

# Private Solutions for Infrastructure in Angola



PUBLIC-PRIVATE  
INFRASTRUCTURE  
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THE WORLD BANK



# **Private Solutions for Infrastructure in Angola**



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## **A Country Framework Report**

The Public-Private Infrastructure Advisory Facility  
and the World Bank Group

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# Contents

<b>Acronyms and Abbreviations</b>	<b>ix</b>
<b>Acknowledgments</b>	<b>xi</b>
<b>Executive Summary</b>	<b>I</b>
<b>1. Introduction</b>	<b>11</b>
Study Goal	11
<b>2. Country Context and Role of PPI</b>	<b>13</b>
Economic and Political Setting	13
Infrastructure in Angola	15
Potential Role of Private Participation in Infrastructure	16
Critical Importance of Independent Regulation	17
Advantages of PPI and Range of Possible Forms	18
PPI Investor Criteria	19
<b>3. Crosscutting Issues</b>	<b>21</b>
Economic Environment	21
Legal and Regulatory Environment	26
<b>4. Electricity and Gas</b>	<b>38</b>
Introduction to the Electricity Sector	38
Key Organizations	38
Legal and Regulatory Framework	39
Current Situation in the Electricity Sector	40
PPI Opportunities in Electricity	45
Identification of Barriers to PPI in Electricity	49
Introduction to the Gas Sector	52
Gas Sector Structure	52
Legal and Regulatory Issues	53
Current Situation in the Gas Sector	53
Future PPI Opportunities	55
Conclusions on Gas	56
<b>5. Water and Sanitation</b>	<b>59</b>
Introduction	59
Legal and Regulatory Framework for the Water Sector	59
Water Sector Structure	60

Current Situation in the Urban Sector	61
Water Supply and Sanitation in Rural Centers	64
PPI Opportunities	65
PPI Constraints—Water and Sanitation	70
Solid Waste Collection in Luanda	70
<b>6. Transport</b>	<b>75</b>
Roads and Highways—Organizations	75
Legal and Regulatory Framework	75
Roads and Highways—Current Situation	75
PPI Opportunities in Roads	76
PPI Barriers in Roads and Highways	78
Railways—Sector Structure and Key Organizations	79
Legal and Regulatory Framework	79
Railways—Current Situation	80
PPI Opportunities in Railways	82
PPI Barriers in Railways	83
Ports—Sector Structure and Key Organizations	84
Legal and Regulatory Framework	84
Ports Sector—Current Situation	84
PPI Opportunities in Ports	85
PPI Barriers in Ports	87
Airports—Sector Structure and Key Organizations	87
Legal and Regulatory Framework	87
Airports Sector—Current Situation	87
PPI Opportunities in Airports	89
PPI Barriers in Airports	90
<b>7. Telecommunications</b>	<b>91</b>
Scope of Sector	91
Key Organizations and Sector Structure	92
Legal and Regulatory Framework	93
Current Situation in the Sector	95
PPI Opportunities in Telecommunications	100
Identification of PPI Barriers	100
<b>8. Promoting PPI: Key Measures and Recommendations</b>	<b>102</b>
Crosscutting Issues	102
Electricity	105
Water, Sanitation, and Solid Waste	109
Transport	113
Telecommunications	115
<b>Appendixes</b>	
<b>Appendix A: Independent Regulation</b>	<b>121</b>
<b>Appendix B: Multi-Utility Regulator</b>	<b>123</b>
<b>Appendix C: Targeting Subsidies</b>	<b>125</b>
<b>Appendix D: Power Plants</b>	<b>129</b>
<b>Appendix E: Telecommunications White Paper Privatization Steps</b>	<b>131</b>
<b>Appendix F: Telecommunications Sector Liberalization</b>	<b>132</b>
<b>Appendix G: Angola Telecom Sales</b>	<b>133</b>



<b>Appendix H: PPI Approval and Post-Approval Issues</b>	<b>135</b>
<b>Appendix I: Angola Power Sector (Map)</b>	<b>137</b>
<b>Appendix J: Angola Water Sector (Map)</b>	<b>138</b>
<b>Appendix K: Angola Transport Sector Potential PPI Opportunities (Map)</b>	<b>139</b>
<b>Appendix L: Angola Telecommunications Sector Proposed Development of Transmission Backbone (Map)</b>	<b>140</b>

## Figures

2.1	Forms of PPI	18
3.1	Approval Process for Investments (US\$ 100,000 to US\$ 5 million)	35
3.2	Approval Process for Investments (US\$ 5 million to US\$ 50 million)	35
3.3	Contractual Regime	36
3.4	Post-approval Process	36
4.1	Power Sector Institutions	39
5.1	Institutional Arrangements for PPI in Urban Water in Mozambique	67
6.1	Road Network in Angola	76
6.2	Port of Luanda Performance	84
6.3	Port of Luanda Forecasts	85
7.1	Growth in Sales of AT by Service	98

## Tables

1.1	PPI Investor Criteria	3
2.1	Educational Expenditures	14
2.2	Main Economic Indicators	14
2.3	SADC Infrastructure Indicators	15
2.4	PPI Experience in Angola	16
2.5	PPI Investor Criteria	19
2.6	Increasing Requirements for Satisfaction of PPI Criteria	20
3.1	Provisions of Law on Tax and Customs Incentives for Private Investment	24
3.2	Main Legal Instruments Relevant to PPI Investors	27
3.3	Infrastructure Sector Legal Instruments	28
4.1	Key Energy Statistics	41
4.2	Forecast Growth in Generation, 2006–2016	41
4.3	ENE's Power Generation Capacity	42
4.4	ENE Rehabilitation Investment Plan	43
4.5	Low Voltage Electricity Tariffs	43
4.6	EDEL Profit/Loss 2001	44
4.7	ENE Profit/Loss 2000	44
4.8	PPI Constraints in Electricity	51
5.1	PPI Constraints in Water and Sanitation	71
6.1	Road Network by Type	76
6.2	Rail Rolling Stock by Company	81
6.3	Operating and Financial Data by Rail Company	81
6.4	Operating and Financial Statistics of Angolan Ports, 2001	85

6.5	Main Airport Network	88
6.6	Airport Passengers and Cargo Traffic, 2000	88
7.1	Telecommunications Act	93
7.2	Forecast of Fixed and Mobile Markets	96
7.3	SADC Countries: Comparative Teledensity	97
7.4	Estimate for Active Mobile Customers	99
8.1	Recommendations: Crosscutting Issues	104
8.2	Recommendations: Electricity	108
8.3	Recommendations: Water and Sanitation	110
8.4	Recommendations: Transport	116
8.5	Recommendations: Telecommunications	119
AI.1	Safeguards to Ensure “Independence”	122
CI.1	Designing Incentive Structures	126
CI.2	Structuring Subsidy Flows	127
CI.3	Contract Procurement	127
DI.1	Hydro Power Plants in Angola	129
DI.2	Thermal Power Plants in Angola	130
EI.1	Privatization Steps Proposed in the Telecommunications White Paper	131
FI.1	Preparation for Liberalization	132
FI.2	MCT Strategies and Liberalization	132
GI.1	Angola Telecom Sales	133
GI.2	Angola Telecom UTT Sales	134

### Boxes

3.1	Infrastructure Political Risk Factors of Concern to PPI Investors	22
3.2	Improved Accounting and Fiscal Discipline in Public Enterprises	22
3.3	Angolan Taxation Policy and Levels	23
3.4	Concessionary Finance for Infrastructure Investments	25
4.1	Electricity Supply in Huambo	47
4.2	Guatemala: Large-Scale Rural Electricity Implementation	48
4.3	Cambodia: Small Rural Electricity Enterprises	49
5.1	Luanda’s Chafarizes	63
5.2	Technologies to Provide Different Levels of Water Supply Service	66
5.3	PPI to Disseminate Alternative Water Delivery Technologies	68
5.4	Community Involvement in Solid Waste Management in Luanda	72
6.1	Private Sector Involvement in Road Maintenance and Construction in Mozambique	79
6.2	Recent Trends in Private Participation in Port Facilities	86
6.3	Recent Trends in Private Participation in the Airport Sector	90
HI.1	Legal Fees and Registration	135

## Acronyms and Abbreviations

ANIP	National Private Investment Agency ( <i>Agência Nacional de Investimento Privado</i> )	DEORSA	Western Electric Distribution Company, Guatemala ( <i>Distribuidora Eléctrica de Oriente, S.A</i> )
AT	Angola Telecom	DNA	National Directorate of Water ( <i>Direcção Nacional de Águas</i> )
bbf	Barrel	DNE	National Directorate of Electricity ( <i>Direcção Nacional de Electricidade</i> )
BCI	Banco de Comércio e Indústria	DNT	National Directorate of Telecommunications ( <i>Direcção Nacional das Telecomunicações</i> )
bcm	Billion cubic meters	EAIF	Emerging Africa Infrastructure Fund
bn	Billion	EDC	Cambodia Electric Power Company ( <i>Electricité du Cambodge</i> )
BNA	National Bank of Angola ( <i>Banco Nacional de Angola</i> )	EDEL	Electricity Distribution Company of Luanda ( <i>Empresa de Distribuição de Electricidade de Luanda, E.P.</i> )
BOO	Build-own-operate	ELISAL	Sanitation and Wastewater Company of Luanda ( <i>Empresa de Limpeza e Saneamento de Luanda</i> )
BOT	Build-operate-transfer	ENANA	National Airport and Air Navigation Development Company ( <i>Empresa Nacional de Exploração de Aeroportos e Navegação Aérea</i> )
BPC	Banco de Poupança e Crédito	ENATEL	National Telecommunications Company ( <i>Empresa Nacional de Telecomunicações</i> )
CCGT	Combined-cycle gas turbine	ENCT	National Post and Telegraph Company ( <i>Empresa Nacional de Correios e Telégrafos</i> )
CFB	Railway Company of Benguela ( <i>Companhia de Caminhos de Ferro de Benguela</i> )	ENE	National Electricity Company ( <i>Empresa Nacional de Electricidade</i> )
CFL	Railway Company of Luanda ( <i>Empresa de Caminhos de Ferro de Luanda</i> )	EPAL	Water Company of Luanda ( <i>Empresa Publica de Águas de Luanda, E.P.</i> )
CFM	Railway Company of Moçamedes ( <i>Companhia de Caminhos de Ferro de Moçamedes</i> )		
CFR	Country Framework Report		
CM	Council of Ministers		
CRA	Water Regulator ( <i>Conselho de Regulação do Abastecimento de Água</i> )		
CRIP	Private Investment Registration Certificate ( <i>Certificado de Registração de Investimento Privado</i> )		
DEOCSA	Eastern Electric Distribution Company, Guatemala ( <i>Distribuidora Eléctrica de Occidente, S.A.</i> )		

ESCO	Energy Service Company	MOF	Ministry of Finance ( <i>Ministério das Finanças</i> )
FADCOM	Angolan Telecommunications Fund	MOP	Ministry of Planning ( <i>Ministério do Planeamento</i> )
FIPAG	Water Supply Investment and Asset Fund, Mozambique ( <i>Fundo de Investimento e Património do Abastecimento de Água</i> )	MPLA	Popular Movement for the Liberation of Angola ( <i>Movimento Popular de Libertação de Angola</i> )
GARE	Office for Entrepreneurial Restructuring ( <i>Gabinete de Redimensionamento Empresarial</i> )	Mt	Million tons
GDP	Gross domestic product	Mt/yr	Million tons per year
GOA	Government of Angola	MV	Medium voltage
GPL	Governo da Provincia de Luanda ( <i>Luanda Provincial Government</i> )	MW	Megawatt
GT	Gas turbine	NFOBN	National Fiber Optic Backbone Network
GURN	Government of Unity and National Reconciliation ( <i>Governo de Unidade e Reconciliação Nacional</i> )	NGL	Natural gas liquids
GWh	Gigawatt hour	NGO	Nongovernmental organization
HDI	Human Development Index	NIE	National Institute of Electricity ( <i>Instituto Nacional de Electricidade</i> )
HV	High voltage	NRECA	National Rural Electricity Cooperatives Association
IIE	Foreign Investment Institute ( <i>Instituto de Investimento Estrangeiro</i> )	OBA	Output-based aid
IMF	International Monetary Fund	OGE	Central government budget ( <i>Orçamento geral do estado</i> )
INACOM	Angolan Institute of Communications (regulator) ( <i>Instituto Angolano das Comunicações</i> )	p.a.	Per annum
INE	National Statistics Institute ( <i>Instituto Nacional de Estatística</i> )	PES	Economic and Social Program for 2001 ( <i>Programa Económico e Social para o Ano de 2001</i> )
INEA	National Road Institute of Angola ( <i>Instituto Nacional de Estradas de Angola</i> )	POTS	Plain old telephone services
IPP	Independent power producer	PPI	Private participation in infrastructure
IRSE	The Electricity Sector Regulator ( <i>Instituto Regulador do Sector da Electricidade</i> )	PPIAF	Public-Private Infrastructure Advisory Facility
ISP	Internet service provider	PSA	Production sharing agreement
ITEL	Telecommunications Institute ( <i>Instituto de Telecomunicações</i> )	REE	Rural electricity enterprise
JV	Joint venture	ROO	Rehabilitate-own-operate
km	Kilometer	ROT	Rehabilitate-operate-transfer
kV	Kilovolt	SADC	Southern African Development Community
Kz	Kwanza	SMP	IMF Staff Monitored Programme
kWh	Kilowatt hour	SOE	State-owned enterprise
LNG	Liquefied natural gas	Sonangol	National Petroleum Company of Angola ( <i>Sociedade Nacional de Combustíveis de Angola</i> )
LOT	Lease-operate-transfer	SSA	Sub-Saharan Africa
LPG	Liquid petroleum gas	TAAG	Angolan Airlines ( <i>Linhas Aéreas de Angola</i> )
LV	Low voltage	tcf	Trillion cubic feet
MCT	Ministry of Posts and Communications ( <i>Ministério dos Correios e Telecomunicações</i> )	UNITA	National Union for the Total Independence of Angola ( <i>União Nacional para a Independência Total de Angola</i> )
MINEA	Ministry of Energy and Water ( <i>Ministério da Energia e Águas</i> )	US\$	United States dollars
		UTT	Telecommunications tariff units
		WP	Telecommunications White Paper

## Acknowledgments

The Country Framework Report for Angola is one of a series of country reviews aimed at improving the environment for private sector involvement in infrastructure. Prepared at the request of the government concerned, country framework reports have three main objectives, namely to: (1) Describe and assess the current status and performance of key infrastructure sectors; (2) Describe and assess the policy, regulatory, and institutional environment for involving the private sector in those sectors; and (3) Assist policymakers in framing future reform and development strategies and to assist potential private sector investors in assessing investment opportunities.

The Public-Private Infrastructure Advisory Facility (PPIAF) and the World Bank are publishing this report jointly. PPIAF is a multi-donor technical assistance facility aimed at helping developing countries improve the quality of their infrastructure through private sector involvement. For more information on the facility see the website: <http://www.ppiaf.org>.

Alan Townsend and Stephan von Klaudy of the World Bank led the design and preparation of this report, with inputs from and a subsequent review by members of the World Bank's Angola Country Team. In addition, the report was subject to an assessment by the World Bank's Quality Assurance Group. The main counterpart on the part of the Government of Angola was the Ministry of Planning. The Ministry of Planning headed an inter-ministerial steering group comprising representatives from the Ministry of Planning, the Ministry of Communications, the Ministry of Petroleum, the Ministry of Water and Power, and the Ministry of Public Works, which supported the country

framework report process. The steering group also organized reviews of the report's drafts at various stages of the process. Work on the report began in September 2002 and was completed in December 2003.

The report preparation process of all country framework reports is intended to facilitate dialogue among key stakeholders on priorities for government reform and the concerns of investors, policymakers, and consumers of infrastructure services. Therefore, work in progress for the report was discussed at two high-level workshops held in Luanda in March and July 2003, where representatives participated from the relevant government ministries, sectoral agencies, infrastructure state companies, and the private sector.

The consulting firm ECA Economic Consulting Associates prepared the report, under the leadership of Ray Tomkins, with the participation of PARTEX Informação, Gestão e Economia, and CONSULT Sociedade Angolana de Estudos e Consultoria Lda.

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The contents and recommendations of the report are the exclusive responsibility of the study team and do not represent the official position of the Government of Angola, PPIAF, or the World Bank.



## Executive Summary

A team of British, Portuguese, and Angolan consultants prepared *A Country Framework Report for Angola* for the Ministry of Planning (MOP) in Angola. A country framework report (CFR) describes the opportunities, barriers, and measures to promote private participation in infrastructure development. The work was done for the Government of Angola (GOA); PPIAF financed the activity.

The study's main aim is to assist the government in developing policies and a framework to promote private participation in the rebuilding and development of Angola's infrastructure.

Following the years of conflict and the resulting damage to the country's infrastructure, as well as the negative impacts on economic growth and development, the country's investment needs are enormous. This study is particularly focused on how to maximize the private sector's role and contribution. The report's scope is on investment in infrastructure in the following sectors:

- Electricity and gas
- Water and sanitation
- Transport
- Telecommunications

For each sector, a separate section in the report covers the current situation, opportunities for private sector participation in infrastructure (PPI), PPI barriers, and measures and actions to promote more private involvement. A further section covers cross-sectoral issues. The CFR concludes with an action plan that identifies the steps that need to be taken to promote,

encourage, and facilitate PPI in the short, medium, and long term.

The CFR examines PPI opportunities over the medium to long term, interpreted to mean from about 2005 to 2020. There is also much need for short-term and emergency infrastructure rehabilitation and repairs. Although these are mainly outside the study's scope, the CFR identifies some immediate actions that can be conducted now at limited cost to start the process of promoting PPI.

***Economic and Political Setting*** The April 4, 2002, signing of a formal ceasefire agreement between MPLA and UNITA in Luanda marked the end of nearly four decades of conflict in Angola. The protracted conflict has had a devastating effect on the economy and on social conditions. While accurate data are lacking, it is estimated that over 1 million people may have been killed since the armed conflict began between rival groups following independence in 1975. The conflict also displaced about 4 million people, about one-third of the country's 13 million citizens (UN estimates as of April 2003). About 100,000 of these are unaccompanied children. Most of the displaced fled from rural areas to Luanda, Lobito, and other coastal cities. The capital, Luanda, for example, a city designed for a population of half a million, grew from 1.6 million in 1990 to about 3.6 million in 2002. Together with the other 17 provincial capitals and smaller urban centers, the urban population is estimated to be 7.4 million, which is 57 percent of the total population. The social

infrastructure to support the explosion in the urban population is grossly inadequate, but with the rural areas more severely impacted by the war and neglected by government services, standards of living are even worse among the rural population. The situation is becoming even more complex as millions of internally displaced people are now returning to their provinces of origin, and many resident communities, also severely affected by the war, are struggling to cope with the sudden influx of returnees.

Due to oil, Angola's average GDP per capita at US\$ 710 is relatively high.<sup>1</sup> However, the average masks the distorted structure of the economy and the very high levels of absolute poverty in the country. In terms of the UNDP Human Development Index (HDI), the country is ranked 164 in the world. Life expectancy at birth is 40.2 years, the under-five mortality rate, estimated at 250 per 1,000 live births, and the infant mortality rate at 154 per 1,000 live births (compared with 91 for Sub-Saharan Africa as a whole) are among the worst in the world; the adult literacy rate is 42 percent and gross educational enrolment only 23 percent. Malnutrition is acute and, within the Southern African Development Community (SADC), Angola has the highest proportion of underweight children (42 percent).

Angola has struggled for years with an unstable macro-economy. A succession of failed or only partially successful stabilization plans characterized Angola's economic policy history since its first major attempts to stabilize in 1987. Since 1987, the government has pursued a series of programs to move from the command economy introduced at independence to a more market-based structure, but progress has been slow. Until recently, the economy was characterized by successive inflationary peaks [reaching briefly 12,000 percent per annum (p.a.) in 1996], as well as rapid depreciation of the kwanza (kz) exchange rate, that were only slowly reduced after introduction of the Nova Vida Plan, which strengthened the connection between "dollarization" and inflation. During the past two calendar years, inflation has averaged about 100 percent. Real growth rates in recent years have been positive, but at 2.7–3.2 percent per year they have been little different from the population growth rate of 3 percent. Despite the revenues generated by the country's oil wealth, Angola is facing significant current account, as well as overall fiscal deficits, mainly as a result of

dividend payments to foreign oil companies and the service on its substantial external and internal debt.

Significant progress has been made towards macro-economic stabilization over the last year. Major achievements include: a decline in the 12-month inflation rate to below 36 percent in August 2004, from levels persistently in excess of 100 percent in previous years; a downward trend in the fiscal deficit, benefiting recently from higher oil prices; a decline in the non-oil fiscal deficit; positive real interest rates for government debt; a decline in money supply growth (M3) to a 15 percent level in July 2004, compared to a 40 percent growth rate in July 2003, and a considerable deceleration in the rate of depreciation of the kwanza exchange rate. There has also been a consistent improvement in the current account balance since 2000, mirroring growing oil export values.

The sustainability of this progress, however, may be limited by some associated developments: external debt levels have continued to rise following the accumulation of more, expensive oil-backed loans; international reserves are at a low level that is sufficient to cover less than one month of imports; the potential cost competitiveness of Angolan goods has been reduced; and, with inadequate expenditure control mechanisms, continuing payment arrears, and rising debt levels, the fiscal position remains vulnerable to changes in oil prices.

**Infrastructure in Angola** The country's infrastructure is in a perilous state, negatively impacting both the quality of life of the people and the operation of almost all economic activities. At present, among the SADC countries, Angola has the lowest level of access to safe water (22 percent of rural and 46 percent of urban population). Public water supply systems have either been destroyed during the civil war or have deteriorated over decades due to lack of maintenance and investments. The result is undersupply for a large part of the population, which in urban areas frequently depends on expensive, often unsafe water purchased from unregulated private providers. In the transport sector, the road system is in a shocking state of disrepair, making several provincial capitals all but inaccessible by road. In some areas, the roads have been mined and at least 300 bridges have been destroyed. The three railway systems at their height carried 9.3 million metric tons of freight to the Atlantic ports, but this has now



fallen to insignificant levels. The electricity system covers only a small part of the country, is outdated and war-damaged, and lacks renewal and maintenance. Some areas are today without any electricity supply and most areas still being supplied suffer from frequent outages. Urban infrastructure has dramatically deteriorated, the streets in most urban areas are in a state of virtual collapse, and there are essentially no functioning sewerage or drainage systems. The fixed-line telephone system is antiquated, very limited in coverage, and prone to service interruptions, while the two small cellular networks, largely servicing the capital, are unable to meet fast-growing demand.

To bring an immediate “peace dividend” improvement in people’s lives and to lay the basis for productive sector investment and hence higher GDP and employment growth, substantial changes are needed in the way the infrastructure sectors are operated coupled with massive investments to expand capacity and enhance access. Hitherto, infrastructure provision has been almost the exclusive preserve of the public sector, but the current context’s requirements will be impossible to meet on that basis, given the human capacity and national budget constraints.

The government’s recognition that it cannot alone meet the development challenges are contained in a number of policy statements. For example, in connection with the recent reform Programa Económico e Social para o Ano ole 2001 (PES), the government Letter of

Intent states that it “will rely heavily on the private sector to accomplish its economic growth objectives, limiting its own role to that of creating the enabling environment for the private sector to flourish, or providing basic services (such as fuel, electricity, telecommunications, domestic air transport, water and sanitation) in which the private sector will also be invited to participate.”<sup>2</sup>

A number of changes have already been made to enable private sector participation in different areas, with notable progress in telecommunications. However, further and much more profound reforms will be necessary to ensure that private operators gain the needed confidence in the business environment and assume a more significant role in meeting Angola’s vast infrastructure needs. It is against this background that the Government of Angola has requested this Country Framework Report to analyze and document the barriers, opportunities, and measures to promote private sector participation in infrastructure over the 2005–2020 period.

**PPI Experience and Investor Criteria** Potential private sector investors in infrastructure would need a number of conditions to be satisfied before they would begin formally appraising an investment opportunity in Angola. These criteria and the likely related questions and concerns of investors are summarized in table 1, below. The criteria have been formulated primarily with international investors in mind, but also apply to domestic investors in infrastructure projects.

Criterion	Investor questions and concerns
1. Data/Studies	Is there a credible sector or project database available that covers demand, consumption, operating and capital costs, institutional structure, pricing regulation, measures of success, and so forth? Are there any comprehensive studies available (not just technical, but also economic and financial)?
2. Legal and Regulatory Framework	Is the activity reserved for the public sector? Are there legal gaps or conflicts? Is the public procurement process transparent and fair? Are the identity, scope, and competence of the regulatory entity clear? Is the regulator able to operate without undue political interference?
3. Cost Covering Tariffs/Assured Revenue Stream	Do current tariffs cover the provision costs, including not only operating costs, but also adequate maintenance, depreciation or capital cost provisions, financing costs, and rate of return? Are prices of infrastructure services equitably structured? If subsidies are to continue, what assurance is there of prompt and reliable payments?
4. Contract Structure	Is the proposed structure of rights and obligations to be transferred to the private sector realistic? Are the obligations, such as the private sector’s capital investment requirements, consistent with the project’s funding capacity?
5. Capital and Credit Markets	Can the domestic credit and equity market supply loans and investment capital at reasonable prices? Will foreign institutions extend loans or make investments?
6. Political Commitment	Does the government have a clear objective for private sector participation in infrastructure? Is it to improve productivity and efficiency, reduce government spending, or expand supply through introduction of technology or commercial management? Are there interest groups that might divert the policy’s intentions?

There has been very limited recent experience of involving the private sector in infrastructure. The most high profile of these is the mobile phone license that was issued to Unitel in April 2001. Telecommunications is also the only infrastructure sector for which a specific regulatory body is operational. In some other sectors there have been management contracts that are considered to have been reasonably successful (i.e., the water supply in Soyo and Caxito, solid waste collection in Luanda, terminal operations in the port of Luanda, and ground handling services in Luanda airport). New concession contracts are being formulated for solid waste collection in Luanda and terminal operations in the port, while a concession was recently awarded in the electricity sector to Alrosa for a small power project; in the telecommunications sector, four new fixed line licenses were issued to private operators.

These examples are important in demonstrating that private sector participation can proceed in Angola, but in view of the long history of centralized control of the economy, quite profound changes are required to fully accommodate and promote private sector participation in infrastructure.

**Crosscutting Issues** In preparation for the introduction of PPI, public infrastructure enterprises should be encouraged to review current cost bases and set new levels and structures for infrastructure prices that will move towards tariffs not only covering all production and maintenance costs, but also generating an after-tax profit sufficient to satisfy the return on initial capital investment.

Transparent accounting consistent with international practices is important to help value the activities. The government has been tightening up accounting requirements for public enterprises and introduced mandatory fiscal councils for the supervision of public enterprise accounting. The measures should improve the management and governance of infrastructure services providers, thereby providing greater confidence to PPI partners and a more satisfactory basis for the risk transfer implied by PPI contracts.

The domestic banking system's financial capacity is very limited. Access to foreign sources of finance for infrastructure investment will be improved if some of the foreign banks are encouraged to expand their operations. The establishment and development of long-term

lenders, such as pension funds and insurance companies, could provide some future funding sources. The availability of finance may also change significantly if plans for expanded (doubling) oil production are successful. As the economy starts growing and confidence is restored, the return of private funds held offshore could also provide significant levels of foreign resources to be channeled into investments to sustain economic growth. Consideration could be given to the establishment of an infrastructure development fund.

Another one of the elements of critical importance to foreign investors is the prevailing foreign exchange regime and law pertaining to the convertibility and transferability of profits and investment proceeds. The National Bank of Angola supervises the market-determined kwanza exchange rate and authorizes dealers and banks to trade in foreign exchange.

A key matter of concern to all foreign investors is the approach towards "Angolanization." This term is used both in respect to the creation of a national bourgeoisie that has a significant ownership stake in the country's productive assets and to refer to the various laws that require or reward a high level of employment of Angolan nationals in enterprises. Against the background of the extremely low education level in Angola, the practical problem for an investor is to find Angolan employees with the requisite skills.

A primary concern of foreign investors relates to the legal framework for foreign investment. There is a new Private Investment Law (11/03) that updates the previous Foreign Investment Law (Law 15/94), updating the provisions to reflect postconflict circumstances and to create a level playing field between domestic and foreign direct investors. The main investor risk arises from the provisions in the sectoral laws that enable the state to nationalize assets (*proceder ao resgate*) when it deems it in the nation's interest to do so. However, the legal framework does guarantee the foreign investor the right to compensation if this occurs, in accordance with international law and international dispute resolution procedures. At this point, there is also a high level of regulatory risk in that regulatory frameworks are largely undeveloped.

There are a relatively small number of entities involved in providing approvals for a project and this function tends to lie with the Ministries and National Private Investment Agency (ANIP). Therefore, the

initial approval process is highly centralized, with large projects being directly accepted or rejected on the basis of a decision by the Prime Minister or Council of Ministers. However, the post-approval process involves many entities and long delays.

There are steps to be taken in the short term to help nurture a more streamlined and transparent route to PPI approval and realization of a transaction. In particular, it is necessary to simplify and make less onerous the processes for establishing and regularizing commercial enterprises and obtaining permits (including work permits) to exercise the commercial activity. The Private Investment Law aims to achieve much of this streamlining, but it remains to be tested in practice.

**Electricity** Despite the low-income levels and limited access to electricity in Angola, a large part of the population is willing and able to pay high prices for electricity supply. Private operators could play an important role in helping restore the system during the rehabilitation phase provided that the legal and institutional framework is amended to allow this to happen. A competitive power market would not be possible or desirable but, if the framework were in place, the private sector could play an important role in restoring and expanding supply to consumers in the small or not-so-small isolated networks.

Further concessions could be foreseen that are similar to the Alrosa project (which involves a large consumer as both investor and purchaser and therefore avoids the need for state guarantees).

There are significant PPI opportunities in electricity in the short and medium term in five main activities:

1. Increasing access to the electricity supply through the electrification of rural areas;
2. The operation and development of grids that have been isolated from the main network as a result of the civil war;
3. Rehabilitating and operating power plants that sell to the National Electricity Company (ENE) under power purchase agreements;
4. Building and operating power plants that sell to ENE, or the Electricity Distribution Company of Luanda (EDEL), or to large consumers under power purchase agreements;<sup>3</sup> and
5. Providing services under contract to ENE and EDEL.

In the long term there could be additional PPI opportunities through the transfer of ENE and EDEL to the private sector.

Ambiguities exist in the General Electricity Law, article 19, which states that concession contracts cannot exceed 50 years, but article 20 allows for cancellation of the concession contract if it is in the “public interest” to do so. Unfortunately, article 20 offers the potential for nationalization of assets at any time and could be a serious deterrent to investors.

The absence of powers for an independent regulator to set prices will deter private investors. Institutional arrangements that provide information and support to potential and prospective private rural operators would help speed up the electrification process. No such institution exists at present.

A lack of adequate prices implies operating subsidies to both EDEL and ENE. A major risk associated with subsidies is that they may be withdrawn if the government budget is constrained.

Measures to promote PPI include improving the general financial operating environment, where there is a need to limit subsidies to capital subsidies and not operating subsidies and to make those subsidies available to private service providers as well as ENE and EDEL. In addition, there needs to be consideration of the introduction of nonuniform tariffs in an effort to improve the performance of both ENE and EDEL.

The commercial performance of ENE and EDEL should be improved to strengthen their credibility as private power buyers. To promote PPI in electrification, ENE should prepare, publish, and regularly update an electrification plan. In accordance with this plan, a private operator should be contracted to provide support services to private and municipal rural electricity operators. A simpler system for licensing off-grid or small-scale electricity schemes should be introduced.

The general obligations of concessionaires should be spelled out in advance and be transparent. Alternatively, a licensing system that the regulator operates could replace concessions.

The regulator should be made fully operational, be independent, and be responsible for setting electricity prices.

**Gas** In the Angolan domestic market, gas could be used potentially for power generation, large industrial

consumers, or distribution to small consumers. However, the domestic market is too small to support gas development on its own and is dependent on the implementation of the Liquefied Natural Gas (LNG) Export Project.

Onshore pipelines are the main infrastructure development opportunities.

Gas distribution would be developed under a licensing regime. Considering the lack of specific legislation concerning gas distribution, the cooperation of the local authorities will be required to secure the necessary land use access and rights-of-way.

Domestic gas exploitation has not yet started and is dependent on the development of the offshore gas industry, which is itself an offshoot of the vitally important oil industry. Gas development could proceed on the back of a proposed 4 million metric tons per year LNG Export Project, which is planned for 2006 and would require about 6 billion cubic meters (bcm) of feed gas per year. However, the siting of this project at Soyo, which is some 300 kilometers from the main demand centers near Luanda, is likely to significantly delay the start of the domestic market exploitation of gas.

**Water and Sanitation** The National Directorate of Water has prepared a comprehensive Water Sector Development Strategy<sup>4</sup> and is forthright in identifying and analyzing current deficiencies and bold in formulating an ambitious 14-year program that requires approximately US\$ 3 billion in investment.

In Luanda, where people living in the *musseques* (shantytowns) are accustomed to paying a high proportion of their income to obtain extremely limited amounts of water, it is highly likely that the population would be willing to pay cost-recovery tariffs for higher standards of service.

Even before PPI options could be seriously pursued, there is need to allow the Water Company of Luanda (EPAL) to become more commercial in its operations, that is, to be given the financial and managerial autonomy necessary to conduct its mandate effectively.

One PPI option that EPAL is actively examining is the Mozambique model of the water assets being housed in a holding company that the state owns, with a private company being given either a lease or a management contract. There is also a regulator to set tariffs and performance standards.

An initial step for EPAL should be the unbundling of discrete components of the water supply system and making separate PPI arrangements for these, in all cases transferring as much responsibility and risk as the private sector is able to bear. The unbundling might apply to raw water capture and storage, water treatment works, and possibly to the trunk transmission network. At the consumer end of EPAL's system, functions that are critical to generating a secure revenue source, such as meter reading, billing, and revenue collection, might also be outsourced on a performance-related basis, again with the progressive transfer of investment responsibilities and risk.

There are a number of alternative technologies that could play a role in improving the access of people in the *musseques* to water. The quickest way to ensure that the potential of these technologies is realized would be to bring in the private sector. A regulatory framework that sets prices and standards of service needs to be created and then bids invited from prospective private sector operators. The first target should be to encourage private operators to improve on the design and operation of *chafarizes* (communal standpipes where water is sold), where (based on comparable facilities in other southern African cities) there is considerable scope for efficiency improvements.

A number of possible PPI opportunities are emerging in sewerage and sanitation facilities in Luanda, such as maintenance contracts and sewerage rehabilitation. Sewerage charges could be introduced. Options for new forms of contracting solid waste collection in Luanda are under development. In peri-urban areas the private sector should be encouraged to collaborate with local entities and NGOs to provide more basic sanitation services.

In other urban centers public municipal enterprises need to be established and allowed to operate on commercial principles prior to involving the private sector. In rural areas opportunities are limited, but the private sector could provide services such as well drilling, pump installation, and basic sanitation maintenance.

PPI in water is complicated by its nature as a local service with large health and environmental externalities; it is easily politicized, with services being extended irrespective of ability to pay; the assets are largely underground and thus difficult to value, and there is a large currency risk.

The most pressing issue to overcome is the political pressure to maintain low tariffs for the minority with

access to piped water, while accepting that the poor majority often have to pay more for water. In Luanda the informal market prices are 30 to 60 times higher than the piped water price.

Immediate actions have been identified to improve the sector's operational performance and increase its preparedness for involving the private sector. The action plan focuses on short-, medium-, and long-term actions on tariffs, the legal framework, commercialization of public enterprises, planning, and institutional reform covering urban water and sanitation supply, solid waste, and rural areas. A key objective is to have the Water Law of June 2002 and associated regulations fully operational.

In Luanda, EPAL's financial performance has to be improved by raising tariffs to the maximum extent permitted by Executive Decree 27/98. In the short term, EPAL should be provided with resources to enhance competition in the truck-tank supply chain, while at the same time discussing, finalizing, and promulgating truck-tank regulations. Resources are also needed to carry out projects to rehabilitate the sewerage and storm water system, investigate options for sewage and wastewater treatment, and invite bids for a concession to build and operate the treatment plant.

In reference to alternative technologies, a simple regulatory framework needs to be established, which specifies prices and standards of service. The private sector should then be invited to tender for the design and operation of chafarizes and to carry out pilot projects on other water supply technologies.

In the provinces, water and sanitation should be moved out of provincial directorates and public enterprises created to take responsibility for these functions in all the major urban centers. Where feasible, these companies should be given responsibility for other utilities as well (electricity being the most obvious sector to combine with water and sanitation in a single utility).

**Transport: Roads and Highways** Transport infrastructure was severely damaged during the conflict years and is a problem in its own right as well as a constraint to the development of the other infrastructure sectors. Road and bridge rehabilitation is an early priority. With the exception of Luanda, traffic densities and volumes are low. Vehicle ownership and density are low outside urban areas.

The Angola Roads National Institute (INEA) is willing to implement the private ownership of the road brigades through the transfer of workers and the selling of brigade assets to private operators. A further option could be to privatize the brigades through the provision of national and regional rehabilitation and maintenance contracts, permitting the brigades to acquire the equipment and so increase the number of road management operators in Angola. INEA recently invited private operators to supply management services to 10 provincial brigades.

Toll-funded improvements depend on sufficient traffic volumes to provide sufficient revenues. Shadow tolls are payments by the government to a road operator rather than being collected from the road user. Shadow tolls do not affect demand but are a way of paying the operator for the actual usage. This approach's viability depends on a government capable of paying them and providing adequate revenue to the operator. Maintenance and rehabilitation contracts based on shadow tolls are a potential way of dramatically attracting financing and improving the state of public road maintenance.

Many constraints exist in financing road development. At present, financing road rehabilitation and maintenance is directly dependent on the state budget as the Road Fund is not yet in operation. Gasoline and diesel prices are heavily subsidized by the state, and there is no collection of taxes from fuel consumption by road users. Until the road user charges are reviewed, the Road Fund will be unable to serve as intended. The Road Fund should be revitalized and properly financed. Fuel and lubrication taxes, motor vehicle import duties, registration and road user charges, and so on would be the primary mechanisms for establishing the Road Fund's operating base.

Opportunities for shadow tolls or performance-based maintenance contracts should be examined, mainly for connections between Luanda-Viana, Benguela-Lobito (short distance), Huambo, and the cities of Benguela, Lubango, and Kuito (long distance).

A key obstacle to PPI relates to the government's credit rating among private contractors. However, the most important difficulty is the poor knowledge and limited prospects of the demand for services in terms of traffic volumes and composition. Current data relate to road traffic in 1970, before independence. It is



necessary to improve data collection to understand the nature and volume of road traffic, to improve planning, to provide information to the private sector, and to examine the respective roles of road, rail, and air modes in the major transport corridors.

Finally, there is no clear legal framework concerning private sector involvement in roads.

**Transport: Railways** There are enormous investment requirements for the three rail systems. Not only does the network require substantial rehabilitation as a result of prolonged disuse and war damage, but also in many cases rolling stock and motive power have exceeded their economic life.

The government has concluded the negotiation process with the Chinese government to open a credit line of US\$ 90 million for the reconstruction of the railway trunk Bungo-Musseques-Baia (in Luanda's railway) and the railway network inside Luanda's port.

The concessioning of rail operations may start on suburban lines like the Luanda-Viana-Cacuaco and Benguela-Lobito rail lines, supported by subsidized pricing. For the Luanda region in particular, suburban rail transport may assume an important role for moving people in a city already overcrowded with private vehicles.

The government believes the long-distance lines from Luanda-Malange (supporting the whole diamond activity) and the Lobito-Benguela-Huambo-Kuito corridor (supporting all the Central Region reconstruction and development) are able to attract PPI in the medium term. Longer-term studies would need to be commissioned to examine the viability of the three lines involving private interest.

However, recent PPI developments in southern African rail sectors show it is not easy to introduce PPI. In Angola, present traffic is a fraction of prewar levels. Network costs frequently remain on the government's account; the private sector is unwilling to assume the liabilities of existing public rail companies; overseas operators are reluctant to commit substantial funds on capital expenses for infrastructure or equipment and then seek early renegotiation of obligations.

Considering the huge investment thought to be needed for the three lines, including the suburban lines—more than US\$ 4.5 billion—approaches need to be viewed with caution. Studies are needed to

realistically assess traffic demand, plan the development of rail lines, and provide information to the private sector. Surveys of the networks should be carried out to gain a better understanding of the true situation of the lines, in terms of investment needs and reliable market surveys of users' intentions, competitive position, and capacity to pay.

However, even if the renewed road and highway system capabilities will compete strongly with rail, rail traffic still could have an important role for the development of hinterland economic activity. Access is essential to the main traditional agricultural and mining regions, such as the Luanda and the Central and South regions. Therefore this requires an overhaul of current legislation and the development of a legal framework for rail operations and concessions that recognizes the opportunities and constraints of the present publicly owned companies.

**Transport: Ports** The country's principal cargo ports are at Luanda, Lobito, Namibe, Soyo, and Cabinda. In the past they were used for exporting, but today they are principally used for imports.

The private sector already plays an important role in the Port of Luanda. Currently under way is the reassignment of the port into four concession areas, namely, general cargo, multipurpose (including bulk), containers, and support to oil companies. The objectives of the new contracts are focused mainly on improving the existing infrastructure and equipment, extending warehouse facilities, providing more client-oriented services, and improving productivity. Under the new concessioning arrangements, new operators are understood to be required to invest around US\$ 83 million in new equipment and rehabilitation of facilities.

Lessons learned from the experience of early management contract forms and later concessions in Luanda could be applied to opportunities in the other ports when there is sufficient demand (although low volumes now indicate private interest is unlikely except for service contracts without revenue risk).

Cabinda rehabilitation is included in the program of emergency repair and reconstruction of ports and should be carried out as a part of an agreement with a private port operator. Investment estimates for 2003 are US\$ 6 million that the state and the petroleum companies involved will finance.

One problem is that private operators need secure and predictable revenues from port operations, but clearing goods is subject to long delays. Most of the current delays in port operations are related to importers' financial constraints. Importers typically hold goods at the port warehouses until payment has been made; the importer only pays port fees and import duties after payment has been received from the customer. Clearing procedures need to be streamlined.

At present all goods are entering and leaving Luanda port by road, due to the rail link being inoperable. An interesting potential strategy is for the opportunity of multimodal connections in the Port of Luanda. In coordination with the Railway Company of Luanda (CFL) and within a larger project for the rehabilitation of the Luanda suburban rail system, a study could examine the feasibility for the development of rail evacuation of container and bulk cargo and the redevelopment of the CFL marshalling yards in central Luanda.

**Transport: Airports** Demand for future air transport will be determined by the pace at which the economy normalizes as well as the nature of the country's medium-term economic development and the development of competing transport modes, especially roads.

Some of Luanda's airport services are already concessioned to private operators. The airport authority has concessioned cleaning, security, parking, and duty-free shops; the national carrier TAAG (*Linhas Aéreas de Angola*), baggage handling and catering.

The GOA and the National Airport and Air Navigation and Development Company (ENANA) are also studying the alternative of building a new airport in Luanda. For these projects, particularly for Luanda, a strong PPI is being considered through concessioning of the different activities or terminals. This extension and rehabilitation will involve building a new taxiway, expanding parking facilities, and renovating the passenger and cargo terminals.

In furthering the environment for private sector participation, it is strongly advised to incorporate ENANA, even if it remains state owned.

Private operators (mainly mining companies) are already operating six local airports, mostly without a formal arrangement with ENANA.

Apart from opportunities in Luanda, conditions do not exist at the majority of provincial airports for profitable private operation, unless their operations are related directly to private economic activities, as it is the case for some mines or the Capanda Dam.

The principal obstacles to the introduction of PPI in the port and airport sectors (to include international bidders) relate to the degree to which the incumbent public owners are able and prepared to transfer responsibility to the private sector and the terms and conditions attached to that transfer.

Rehabilitation priorities are to improve the functionality of the Luanda and provincial airports, including runways, parking space, and terminals. Beyond this there is a requirement for changes and enactments of certain necessary legislation.

As with all other main infrastructure sectors, an independent economic regulator for the airport sector should be established with the power to set cost-reflective prices. The legal basis for private participation in airport infrastructure needs to be clarified.

Once the minimum steps have been undertaken as highlighted above, an analysis is needed of the opportunities for concessioning Luanda airport passenger and cargo terminals and some of the provincial airports.

**Telecommunications** The major PPI development has been the introduction of a private, competing mobile service provider, but the growth of connections has been hindered by problems that are partly due to the sector's structure and partly due to the general difficulties of investment in Angola. A more recent development has been the issuing of four new fixed line licenses to private operators. Concerning Angola Telecom privatization, the GOA has taken some actions such as a basic network diagnosis, a study on the economic and financial restructuring of Angola Telecom, and the recent appointment of a committee to study the action plan to implement the incumbent's privatization and prepare a performance contract. The first performance contract draft for Angola Telecom (AT) was ready in 1995, and it was the first state-owned enterprise (SOE) performance contract made in Angola.

The telecommunications sector presents many opportunities given the expectations that it is moving

towards full liberalization in the medium term. Full market liberalization may occur before the end of the current decade. During 2003-04, the GOA intends to ensure free competition in all the services, except nationwide fixed voice. From 2005, the GOA will prepare the transition to full competition.

One of the GOA strategic goals is the implementation of a long-distance national transmission backbone network as the basic infrastructure to support the development of an information society, of Plain Old Telephone Services (POTS), and of cellular networks in Angola.

Other attractive PPI opportunities are likely to be the letting of a further mobile license and private sector involvement in some of Angola Telecom's activities (as strategic partners or, eventually, in privatization).

Private investment is not authorized in the basic network infrastructure because it is an area of absolute reserve. So PPI in this area can take place only in the form of financing, but cannot involve any type of ownership.

Although it is recognized that the GOA may retain a special role in and control over basic network development due to the substantial financial efforts required, a change in the law would be necessary so that the GOA could find other methods and forms (see chapter 2) to develop the telecommunications infrastructure. There is an urgent requirement for investment funds for all telecom services. However, capital is not available in sufficient volume in Angola's domestic financial and banking system.

A proactive, medium-term approach would be to enact legislation that defines the basic network as controlled reserve as opposed to absolute reserve, thereby

allowing a partial privatization of Angola Telecom and the acceptance of a strategic foreign partner.

The Angolan Institute of Communications (INACOM), a regulatory agency, was established and does have some real powers; however, there is still a requirement to improve the regulatory structure and clarify roles in regulation.

AT should be restructured and unbundled into separate incorporated business units. This would aim to enhance the necessary efficient signals for prospective investors and encourage the initiation of strategic partnerships. A further mobile GSM license would promote competition in mobile services.

As with other sectors, regional integration is a keen objective in Angola, and this gives additional emphasis to the need to develop a National Fiber Optic Backbone Network (NFOBN) as a means of facilitating interconnection among all the regions of the country and among operators/service providers.

Within the next five years, up to five mini-backbone networks will coexist in Angola, nearly one for each licensed operator, due to the lack of a national long-distance backbone.

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## Notes

1. Figure for 2002, calculated using the World Bank Atlas method.
2. Government of Angola, Memorandum of Economic and Financial Policies, April 3, 2000.
3. The proposed LNG project could provide such an opportunity as the plant will need its own power generation and additional capacity could be provided to supply local consumers.
4. Ministério da Energia e Águas, Estratégia de Desenvolvimento do Sector das Águas, November 2002. The strategy was approved by the Council of Ministers in early 2004.





## Introduction

### Study Goal

The main goal of the study is to assist the Government of Angola (GOA) in developing policies and a framework for the promotion of private participation in the rebuilding and development of Angola's infrastructure. Angola is emerging from a long period of civil war and its infrastructure is severely damaged. It is an opportune moment to create a more comprehensive understanding and framework for the promotion and financing of the infrastructure investment required to rehabilitate and extend the provision of infrastructure service, especially for the poorer sections of the country.

Following the years of conflict, the resulting damage to the country's infrastructure, and the negative impacts on economic growth and development, the country's investment needs are enormous. Investment in infrastructure will require multiple funding sources including the GOA's own resources, international donors, and the private sector. This study is particularly focused on how to maximize the private sector's role and contribution.

The report scope is on investment in infrastructure and improved operations in the following sectors:

- Electricity and gas
- Water and sanitation
- Transport
- Telecommunications

It should be emphasized that the scope is specifically on infrastructure. For example, in road transport the project will look at the highway infrastructure but not the vehicles.

Another issue concerning the study's scope is the time frame. The Country Framework Report (CFR) examines opportunities for private participation in infrastructure (PPI) over the medium to long term, interpreted to mean from about 2005 to 2020. Therefore, the CFR does not directly address the immediate short-term needs, such as the urgent repairs required to roads, water supply, and sewage systems, as these aspects are the concern of other investment and assistance programs. However, some immediate actions are covered, which are relevant to PPI development.

The project has resulted in a CFR in collaboration with the GOA. CFRs have been prepared for a number of countries with the assistance of PPIAF and generally cover three types of topics, which are reflected in the contents of this CFR report:

- **Crosscutting issues**, which relate to common themes across sectors for establishing the appropriate regulatory, financial, and institutional environment for private sector participation.
- **Sector analyses** that provide a description of the current sectors, their trends, performance, reform options, and investment opportunities, leading to conclusions on the modes of promoting PPI in each sector.
- **Recommendations**, which detail the time-bound steps to be taken to strengthen the policy framework and business environment.

This final CFR covers all items above and focuses specifically on key measures to be taken (i.e., the recommendations) to promote PPI.

The CFR was developed with the GOA and interested stakeholders through a series of steps, as follows:

- First draft of the CFR (prepared in February 2003);
- A workshop to review and discuss the first draft report; the workshop focused mainly on the opportunities for PPI in the sectors;
- Second draft of the CFR (prepared in June 2003);
- A second workshop with a wider audience including participants from the potential investment community to focus discussion on the recommendations; and
- Final CFR.

# 2

## Country Context and Role of PPI

### Economic and Political Setting

The signing in Luanda of a formal ceasefire agreement between the MPLA and UNITA on April 4, 2002, marked the end of nearly four decades of conflict in Angola. The liberation struggle to free the country of Portuguese colonial rule began in the early 1960s. Following the revolution in Portugal in 1974, a transitional government was formed that included the MPLA, FNLA, and UNITA, but this soon collapsed and civil war erupted even before independence was formally declared on November 11, 1975.

Since that time, the MPLA has been the recognized government in Luanda, initially under President Agostinho Neto until his death in 1979, and since then under President José Eduardo dos Santos. Following the Bicesse Agreement in 1991 and the Lusaka Protocol in 1994, there were short-lived periods of peace. These agreements made possible the establishment of multi-party structures of government, notable events being national elections in 1992 and the formation of a Government of Unity and National Reconciliation in 1997. The UNITA leader, Jonas Savimbi, was unwilling to accept a subordinate role and continued the civil war until government forces killed him in February 2002.

Angola is potentially a wealthy country. In addition to substantial reserves of oil (8 billion barrels), rich diamond deposits and other minerals, the country has considerable hydroelectric potential, extensive agricultural land, and good rainfall. The protracted conflict has had

a devastating effect on the economy and on social conditions. Prior to independence, the economy was relatively diversified with agriculture, fishing, mining, and light industry making significant contributions to GDP. Oil production was around 170,000 barrels per day.

With the decimation of other sectors and an increase in oil production to around 1 million barrels per day, the petroleum sector presently totally dominates Angola's economy. Oil and gas constitute over 60 percent of GDP and 90 percent of exports. Diamonds are also important (around 9 percent of GDP and 13 percent of exports), with other sectors lagging way behind. Agriculture, which provides a livelihood for the majority of the population, accounts for only 7–11 percent of GDP, the main crops being maize, cassava, potatoes, beans, bananas, and coffee (in colonial times an important export). Livestock rearing and fishing are also important.

The rural population was particularly hard hit by the civil war, resulting in a huge influx of people into urban areas. Luanda, a city designed for a population of half a million, grew from 1.6 million in 1990 to about 3.6 million in 2002. Together with the other 17 provincial capitals and smaller urban centers, the urban population is estimated to be 7.4 million, which is 57 percent of the total 2002 population of 13 million. The social infrastructure to support the explosion in the urban population is grossly inadequate, but with the rural areas being directly impacted by the war and neglected by government services, standards of living are even worse among the rural population.

**Table 2.1** Educational Expenditures

Percent of government budget spent in education								
1999	2000	2001	1992–2000					
Angola			Zambia	Mauritius	Namibia	Zimbabwe	Botswana	Lesotho
3	4.3	5.2	14	16	22	24	26	27

Source: UN System in Angola, Common Country Assessment–2002.

Due to oil, Angola's average GDP per capita at US\$ 710 is relatively high (45 percent above the average for SADC, excluding South Africa). However, the average masks the distorted structure of the economy and the very high levels of absolute poverty in the country. In terms of the UNDP Human Development Index (HDI), the country is ranked 164 in the world (above only Mozambique in SADC). Life expectancy at birth is 45.2 years; adult literacy rate is 42 percent and gross educational enrolment only 23 percent.<sup>1</sup> Within SADC, Angola has the highest proportion of underweight children (42 percent), the next highest being Malawi (30 percent).<sup>2</sup>

With the advent of peace, there is now an imperative for the country's development needs to be addressed. The problems are daunting, however. As indicated by the education statistics just quoted, human capital is a major constraint in Angola. The paucity of education made available during the colonial period has not been offset during the civil war period, education expenditures being subordinated to military spending. Table 2.1 provides some comparative figures on the relative effort made by some SADC governments in allocating budgetary spending to education.

The result is that the quality of the educational system remains very poor. Only 1 percent of the population of higher education age has access to a university. In the last 10 years, not a single engineer has graduated. The lack of local skilled and highly educated staff implies the need to recruit expatriate manpower. Operating costs become very high, and usually there are some difficulties getting the necessary entry visas and work permits. The short time since the market economy started in the 1990s means that entrepreneurial skills are also barely developed.

The macroeconomic situation is another significant constraint. Since 1987, there have been a series of programs to move from the command economy introduced at independence to a more market-based struc-

ture, but progress has been hesitant. The legacy of past fiscal profligacy is a very high level of national debt amounting to over 150 percent of GDP in 1999 and an unstable macro economy with three-digit inflation and a sharply depreciating exchange rate (see table 2.2). Real growth rates in recent years have been positive, but at 2.7–3.2 percent p.a. have been little different from the population growth rate (3 percent). The most recent reform program (PES 2001<sup>3</sup>) committed the government to a comprehensive set of macroeconomic and structural reforms over the years 2000 and 2001. The program was agreed with the International Monetary Fund (IMF) as a Staff Monitored Programme (SMP) but, with many of the targets being missed, did not lead to a resumption of IMF lending to Angola.

The extent and depth of the problems are such that even Angola's immense oil wealth is no panacea. While the oil revenues give rise to a balance of trade surplus, dividend payments to foreign oil companies and other transfer payments result in a significant current account deficit (–32 percent GDP in 1999 and –11 percent GDP in 2000). Similarly in the fiscal domain, while oil provides the bulk (88 percent) of a relatively high level of national revenues (48 percent GDP in 1999), even non-interest expenditure is much higher and when interest on accumulated debt is added the overall fiscal deficit is over 10 percent of GDP (–13.1 percent GDP in 1999). The authorities are in the difficult position of

**Table 2.2** Main Economic Indicators

	1997	1998	1999	2000	2001	2002
GDP growth (percent)	6.2	3.2	2.7	3.0	3.2	9.0
kz-US\$ exchange rate, unofficial, average	0.3	0.6	3.2	10.7	24.4	45.3
kz-US\$ exchange rate, official, average	0.2	0.41	2.84	10.16	22.27	44.0
Inflation (percent)	111	134	329	268	116	106

Sources: World Bank, IMF, BNA, and the Economist Intelligence Unit.

needing to increase substantially recurrent expenditure in the social sectors—particularly education, health, and poverty reduction programs—and capital expenditure (a meager 4.2 percent GDP in 1999), while at the same time reducing the overall budget deficit. Unless and until a fiscal balance is restored, the underlying inflationary momentum in the economy will continue, undermining attempts to restore national savings and investment, and achieve higher levels of economic growth and standards of living.

Angola is a country in transition—from war to peace and from poverty to prosperity. In starting to rebuild the economy, the first target for increased investment is infrastructure. As is elaborated in the next section, the country’s infrastructure is in a parlous state, negatively impacting both the quality of life of the people and the operation of almost all economic activities. To bring an immediate “peace dividend” improvement in people’s lives and to lay the basis for productive sector investment and hence higher GDP and employment growth, substantial changes are needed in the way the infrastructure sectors are operated coupled with massive investments to expand capacity and enhance access.

Hitherto, infrastructure provision has been almost the exclusive preserve of the public sector, but the requirements in the current context will be impossible to meet given the human capacity and national budget constraints. It is against this background that the Gov-

ernment of Angola has requested this Country Framework Report to analyze and document the opportunities for private sector participation in infrastructure over the period 2005–2020.

### Infrastructure in Angola

Table 2.3 presents data for SADC countries on access to water, sanitation, electricity, and telephones. The table is ranked by the UNDP HDI and indicates that one of the characteristics of countries with higher development levels is that they have progressively higher levels of access to infrastructure. At present, Angola has the lowest level of access to safe water and scores badly on the other types of infrastructure listed.

The picture is similar in the transport sector. The road system is in a shocking state of disrepair, making several provincial capitals all but inaccessible by road. In some areas, the roads have been mined, and at least 300 bridges have been destroyed. The three railway systems at their height carried 9.3 million metric tons of freight to the Atlantic ports, but this has now fallen to insignificant levels. On the 1,340 km Benguela line, for example, services are now limited to the 30 km stretch between Lobito and Benguela, and it is mainly passengers rather than freight being carried.

Contained in a number of policy statements is the government’s recognition that it cannot alone meet the development challenges the country faces. For example,

Class of human development	HDI rank	Country	Percent of population with access to safe water			Percent of population with access to sanitation			Electricity kWh per capita per annum	Telephones per 1,000 population (2000)		
			Rural	Urban	Total	Rural	Urban	Total		Fixed line	Cellular	Total
High (1)	47	Seychelles								235	320	555
Medium (7)	67	Mauritius								235	151	386
	107	South Africa	70	99	87	80	92	87	3,587	114	190	304
	122	Namibia	71	100	83	20	93	62	1,022	63	47	110
	125	Swaziland							576	32	33	65
	126	Botswana	88	100	90	41	91	55	755	93	123	216
	128	Zimbabwe	69	99	79	32	96	52	715	18	23	41
	132	Lesotho	57	91	62	35	56	38	188	10	10	20
Low (6)	151	Tanzania	58	92	66	83	98	86	45	5	5	10
	153	Zambia	10	84	38	57	94	71	609	8	9	17
	155	DRC	26	89	42	6	53	18				
	<b>161</b>	<b>Angola</b>	<b>22</b>	<b>46</b>	<b>31</b>	<b>27</b>	<b>62</b>	<b>40</b>	<b>69</b>	<b>5</b>	<b>2</b>	<b>7</b>
	163	Malawi	40	95	47	1	18	3	71	4	5	9
	170	Mozambique			63			54	40	4	2	6

Source: SADC.

**Table 2.4** PPI Experience in Angola

Sector	Public entities	Form of PPI contract
Urban Water	DNA and provincial governments	Water supply management contracts in Soyo and Caxito (at termination, responsibility reverted to provincial directorates of water)
Municipal Waste	ELISAL and Luanda Provincial Government	Management contract by Urbana 2000 of ELISAL's responsibilities for waste collection New concessions being formulated
Port	Port of Luanda	Outsourcing of terminal operations and management in the port of Luanda Four new terminal concessions in process of tendering
Airport	ENANA	Outsourcing of ground handling services at Luanda airport
Electricity	ENE and DNE	Concession for power generation for use by mining company. Concession recently awarded to Alrosa.
Telecommunications	INACOM and DNT	Mobile phone license for Unitel Three new fixed line licenses issued, one being negotiated

in connection with the recent reform program PES 2001, the government Letter of Intent states that it “will rely heavily on the private sector to accomplish its economic growth objectives, limiting its own role to that of creating the enabling environment for the private sector to flourish, or providing basic services (such as fuel, electricity, telecommunications, domestic air transport, water and sanitation) in which the private sector will also be invited to participate.”<sup>4</sup>

To date, the experience of involving the private sector in infrastructure has been quite limited (see table 2.4). The most high profile of these is the mobile phone license issued to Unitel in April 2001. Telecommunications is also the only infrastructure sector for which a specific regulatory body has been established. In some other sectors there have been management contracts, which are considered to have been reasonably successful (water supply in Soyo and Caxito, solid waste collection in Luanda, terminal operations in the port of Luanda, and ground handling services in Luanda airport). New concession contracts are being formulated for solid waste collection and terminal operations in the port, while in the electricity sector a concession was recently awarded to Alrosa, and in the telecommunications sector four new fixed line licenses are being issued.

These examples are important in demonstrating that private sector participation can proceed in Angola, but in view of the long history of centralized control of the economy, the changes that are required to fully accommodate and promote PPI are quite profound. The changes that have already been made are documented in the following chapter, which analyzes the extent

to which the economic and legal environment is presently amenable to PPI. Further changes will be necessary, however, and the final chapter of the report draws on the detailed sectoral reports (chapters 3–6) to propose recommendations.

### Potential Role of Private Participation in Infrastructure

Far from being unique, the problems that Angola now faces in providing adequate infrastructure for economic development and enhancement of the quality of life have been tackled in recent years through sector reforms in many developed and developing countries. The main lesson that can be drawn from this experience is that countries that have pursued reforms vigorously and consistently have derived substantial benefits, whereas countries that have been hesitant in their approach have not seen much improvement.

Countries have treated different sectors differently, in some cases progressing only as far as commercialization that is requiring state-owned infrastructure service providers to operate on a commercial basis, while in other sectors there has been full privatization. In between these extremes are a large number of intermediate PPI possibilities, which are reviewed in the next chapter.

Whatever the type and degree of privatization, the main objectives governments have sought to pursue are:

- **Improvement in the efficiency with which infrastructure services are provided.** Careful formulation of PPI arrangements can ensure not just immediate

efficiency gains but lasting performance improvements as well.

- **Reduction in infrastructure demands on the national budget.** The greatest budgetary benefit is to be derived from full privatization, but the first privatization transactions may still require government guarantees, implying large contingent liabilities for the national budget. However, under a comprehensive program, which gathers momentum and encourages investor confidence to grow, government support mechanisms will diminish. Under partial privatization options, the government may have to continue to provide capital and recurrent subsidies, but it is highly desirable for recurrent infrastructure commitments to be phased out and subsidies limited to capital provisions. Priority should be given in the national budget to resources being used for social service provision (health and education), while infrastructure services can be self-sufficient, with vulnerable groups being protected via “lifeline tariffs” that are cross-subsidized by other infrastructure consumers.
- **Expand affordable access to infrastructure services to the majority of the population.** Within a privatized framework, clever use of national subsidy resources can result in much more rapid progress towards the goal of “universal service” than has typically been the case in fully state-owned and -run infrastructure sectors. The main rules are for the state to avoid subsidizing recurrent costs and to offer capital subsidies to private operators on a competitive, performance-related basis.<sup>5</sup>

### Critical Importance of Independent Regulation

Comprehensive infrastructure reforms often involve the “unbundling” of sectors to break them up into viable business entities at the various industry levels. The unbundling has to be carried out in such a way as to maximize the competitive character of the structure that emerges, but there are aspects of the infrastructure industries that are inherently monopolistic. This creates the potential for a utility to exploit its monopolistic position, charging excessive prices, and delivering a poor-quality service to the customer, who cannot turn to any other supplier for infrastructure services. In addition, a monopolist may well underinvest, depriving

those without access to modern infrastructure of the opportunity to be connected to the network. These tendencies may be evident even if the utility is state owned and is certainly a danger when the private sector is invited to participate in the supply of infrastructure services. As has been proven in many countries undertaking infrastructure reforms, these problems can be overcome by having an effective **regulator** with a mandate to mediate between consumers and suppliers. Each infrastructure sector needs to be covered by adequate legal provisions for effective regulation, but, for reasons of economies of scale, scope, and shortages of capacity, it is likely to be advantageous to have multi-sectoral regulatory agencies rather than costly separate agencies for each sector.

In Angola, it is essential that adequate regulatory capability be established as soon as possible so as to ensure that customer and national interests are protected at all stages of the reform process, while at the same time providing the assurances of a fair and predictable business environment that is needed to attract competent private sector investors.

In the past, departments within government ministries have performed regulatory functions. However, it is no longer considered appropriate for structures that are part of the government to conduct regulatory functions. Governments inevitably have conflicting objectives, and this can result in a lack of consistency about crucial regulatory decisions. Both customers and investors seek regulatory mechanisms that will result in decisions that are fair and predictable, with matters such as changes in tariffs (including lifeline tariffs) being implemented in a routine, transparent fashion. The international “best practice” that has emerged is for infrastructure regulators to be independent agencies, able to operate without political interference, but with a high degree of public accountability for the decisions reached and implemented within the infrastructure sectors.

These concerns strongly apply to Angola, which has a long path ahead in building the confidence that is needed to make infrastructure reforms a success. In view of this, the importance of **independent regulation** of infrastructure is discussed in more detail in appendix 1. Independent regulation is not an optional “add-on,” but a fundamental requirement for attracting investors and ensuring that the overall objective of least



cost, equitable provision of infrastructure services is achieved. The annex describes safeguards to ensure independence in the establishment of regulatory agencies, together with the broader conditions needed for independence to be fully effective.

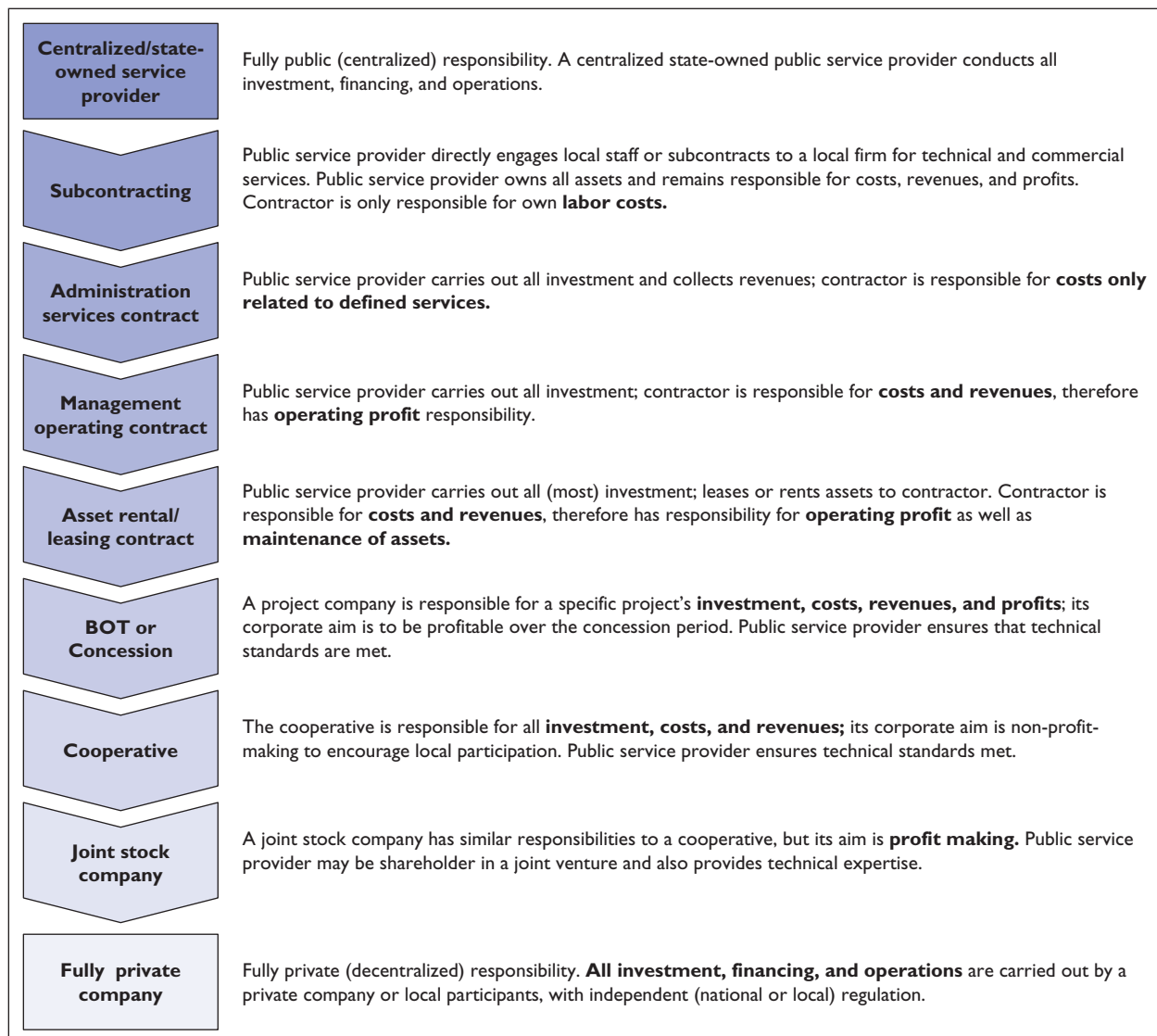
### Advantages of PPI and Range of Possible Forms

At present in Angola, the infrastructure sectors are almost entirely publicly owned and operated with only marginal private sector participation (telecommunications is to some extent an exception). Retaining full

public ownership and control is certainly an option to be considered, provided there is full commercialization of the responsible entities. However, in addition to the major advantages expected from properly planned privatizations discussed in the previous chapter, in the case of Angola there would be some specific additional advantages to fostering PPI:

- Private operators have more flexibility to make best use of human resources, an issue of major concern in a country critically short of skilled manpower.
- It is more acceptable in Angola for a private operator to raise tariffs to cost-recovery levels than it would be for a public enterprise.

Figure 2.1 Forms of PPI





- The payment of arrears and thereafter timely payments for infrastructure services by government departments and other state enterprises (which together constitute a significant part of the customer base) would be more likely when the utility is in private hands.
- Private operators are likely to be more innovative in the choice of technology for service delivery; this is an area that needs serious attention in Angola if the goal of universal access to modern infrastructure services is to be attained over any reasonable time frame.
- Mobilization of private capital would foster the development of capital markets to assist productive ventures in the future.

These advantages apply not just to full privatization, but also in varying degrees to the wide range of options, which exists for PPI. The main types of arrangement are illustrated in figure 2.1. This shows a progression from a centralized public “service provider” (used here as shorthand for state-owned “infrastructure service provider”) to a fully private company. It is important to emphasize, however, that the progression is only notional. In practice, it may often be attractive to have **hybrid arrangements**.

For example, it would be quite possible to combine an overall management contract for a major utility with the operator having service contracts with a

number of other companies fulfilling particular functions. Lease or concession arrangements could be for components of the overall system rather than for the utility as a whole. For example, the public sector could retain full responsibility for transmission and distribution in an electricity or water system while purchasing bulk supplies from an upstream private operator that has a lease or concession over generation or water storage and/or treatment assets.

### PPI Investor Criteria

Potential private sector investors in infrastructure would need a number of conditions to be satisfied before they would begin formally appraising an investment opportunity in Angola. These criteria and the related questions and concerns of investors are summarized in table 2.5. The criteria have been formulated primarily with international investors in mind, but also apply to domestic investors in infrastructure projects. These criteria form the framework for the analysis of constraints to PPI in the sectoral reports (see chapters 4–7). Proposals for addressing deficiencies are made in the sectoral reports and the recommendations in chapter 8.

From an investor viewpoint, the degree to which the above criteria are satisfied is also an important determinant of the form of participation, which can be

**Table 2.5** PPI Investor Criteria

Criterion	Investor questions and concerns
1. Data/studies	Is there a credible sector database available, covering demand, consumption, and operating and capital costs, institutional structure, pricing regulation, measures of success, and so on? Are there any comprehensive studies available (not just technical but economic and financial)?
2. Legal and regulatory framework	Is the sector reserved for the public sector? Are there legal gaps or conflicts? Is the public procurement process transparent and fair? Are the identity, scope, and competence of the regulator clear? Is the regulator able to operate without political interference?
3. Cost covering tariffs/assured revenue stream	Do current tariffs cover the costs of provision (including not only operating costs but adequate maintenance, depreciation, or capital cost provisions, financing costs, and rate of return)? Are prices of infrastructure services equitably structured? If subsidies are to continue, what assurance is there of prompt and reliable payments?
4. Contract structure	Is the proposed structure of rights and obligations to be transferred to the private sector realistic? Are the obligations, such as the private sector's capital investment requirements, consistent with the contract's funding capacity?
5. Capital and credit markets	Can the domestic credit and equity market supply loans and investment capital at reasonable prices? Will foreign institutions extend loans or make investments?
6. Political commitment	Does the government have a clear objective for private sector participation in infrastructure? Is it to improve productivity and efficiency, reduce government spending, or expand supply through introduction of technology or commercial management? Are there interest groups that might divert the intentions of the policy?

**Table 2.6** Increasing Requirements for Satisfaction of PPI Criteria

PPI Option	PPI Criteria					
	Data/ studies	Legal/ regulatory environment	Cost covering tariffs	Contract structure	Credit/ capital markets	Political commitment
Outsourcing and operating contracts	*	*				**
Management contract	**	*	*	**	**	***
Lease	***	**	***	***	***	***
Concession	****	****	****	****	****	****
Divestiture	*****	*****	*****	**	**	*****

\* lowest; \*\*\*\*\* highest

considered technically, economically, and financially feasible. Table 2.6 shows how the feasibility of greater risk transfer from the public to the private sector demands increasing satisfaction of the criteria (\* = minimum level of satisfaction of criterion is necessary, \*\*\*\*\* = maximum level is essential).

As summarized in table 2.6, most PPI examples that have already been identified in Angola have been in the form of outsourcing and operating contracts. These require limited satisfaction of the criteria or necessary conditions. If the government of Angola is determined to go beyond these forms of PPI and to transfer significant investment and operating risk to the private

sector, it will need to be fully aware of the conditions sought by international operators and ensure that the six criteria in tables 2.5 and 2.6 are fully met.

#### Notes

1. United Nations Development Program, *Human Development Report 2002*, New York, table 1.
2. World Resources Institute, *World Resources 2000–01*, Washington, DC, table AF3.
3. Programa Económico e Social para o Ano de 2001.
4. Government of Angola, Memorandum of Economic and Financial Policies, April 3, 2000.
5. Appendix 3 outlines mechanisms for efficient subsidies (such as output-based contracting) and international experience with these.

# 3

## Crosscutting Issues

### Economic Environment

#### *Introduction*

The key criteria for PPI investors identified in the previous chapter (see table 2.5) imply that private sector investments in infrastructure can go ahead even if the business, economic, and legal environment is not particularly conducive. Provided sector-specific assurances are in place (such as good database, independent sector regulator, and cost-covering tariffs), and there is a contract that the investor regards as providing adequate security, the transaction may well proceed.

However, the general business environment in Angola does have an important bearing on the identified criteria, particularly on the PPI investor's perception of risk. As summarized in box 3.1, there are infrastructure-specific risk factors for PPI investors, but there are also broader concerns. A sound economic and legal environment will raise confidence and contribute to reducing the risk premium, which would otherwise be incorporated in the PPI investor's target rate of return. The consumers of infrastructure services ultimately pay for this enhanced profit element via higher tariffs. This impacts negatively on the national objectives of providing access to infrastructure at the lowest possible cost.

#### *Business Conditions*

Following the signing of the April 2002 ceasefire agreement, there is a unique opportunity to capitalize on and reinforce investors' positive perceptions on the

prospects for peace and political stability in Angola. In building confidence, it is equally important for the government to enunciate and begin implementing a coherent macroeconomic stabilization program. It will take some years to achieve the required objectives, but evidence of government commitment to a credible program would be an encouraging start.

For many potential foreign investors considering postconflict Angola, there will be aspects of the business environment, which are unfamiliar. The legal system, based on Portuguese codes, is particularly important in this regard and is analyzed in more detail in the legal and regulatory environment section, below. Accounting practices for private companies are being brought into line and being reformed to be more in line with international norms. Since January 2003 an accounting policy has been put in place that is very similar to that in the European Community.

In the infrastructure sectors, the enterprises are presently all state-owned, most with the legal status of public enterprises (*Empresas Publicas*), which are commercialized state companies. The government has been tightening up on accounting requirements for public enterprises and has introduced mandatory fiscal councils for the supervision of public enterprise accounting. A summary of what is entailed is given in box 3.2. The measures should improve the management and governance of infrastructure services providers, thereby providing greater confidence to PPI partners and a more satisfactory basis for the risk transfer implied by PPI contracts.

### Box 3.1 Infrastructure Political Risk Factors of Concern to PPI Investors

Political risk in infrastructure PPI is always present. From international experience, investors will seek to minimize possible risk that could arise in the following situations:

- Failure of a state-owned entity to pay under a “take or pay” contract such as under a power purchase agreement between a private power generator and, say, a state-owned power distributor, which had been unable to invoice and collect from consumers.
- A competent public authority’s refusal for political reasons to sanction or approve the increase of a tariff under an agreed formula contained in a PPI contract.
- Delay or failure to pay the private sector operators an operating subsidy payment under a PPI contract or failure to make a timely payment for capital works undertaken by the private sector—typically in a construction contract.
- Delay or failure by a competent Ministry or public enterprise to perform some function in preparation of a private sector investment. Examples include securing title to land for transport projects, undertaking complementary investment—a grid connection for a private power station, and so on.
- Change of law that prevents the convertibility or transferability of profits, dividends, or investment proceeds or permits the expropriation of private foreign investment in the sector in question.

Given the short period since the cessation of conflict in Angola, in common with the pattern of investor reaction in other post-conflict states, in the immediate future domestic and international operators and investors will seek specific assurances and insist on structural and contractual ways to minimize or mitigate these risks.

#### *Tax Provisions and Fiscal Incentives*

Angola has a straightforward tax system with relatively high rates, comparable to several other SADC countries. The main elements of the system and the rates applicable up to January 2003 are summarized in box 3.3. The principal legislation is the Law on Taxation Policy and Levels (Law no 5/99 of 6 August 1999). There is a series of other laws for specific taxes. Rates can only be changed by amendments being passed to the relevant laws.

Hitherto, while the Foreign Investment Law did allow for fiscal concessions to be negotiated when the foreign investment was made under the contractual system, there was no system of automatic tax

### Box 3.2 Improved Accounting and Fiscal Discipline in Public Enterprises

Past accounting rules of public enterprises, in the context of high inflation, have distorted enterprise balance sheets and markedly reduced their management value. Fixed assets typically appear in annual accounts at their historic cost without revaluation. This has led to underestimation of tariffs, overstatement of profitability (through charging insufficient depreciation), and the consumption of the company’s capital.

The solution to unsound financial structures of public networks is to raise tariffs, improve revenue collection, and restructure public enterprise balance sheets to include the replacement value of fixed assets to reflect the appropriate profitability and return on assets.

From the beginning of 2002, public enterprises were required (by Decree 38/00 of 10 August 2000) to have chartered accountants audit their accounts. From the start of 2003, public enterprises are further required to abide by the General Accounting Plan approved by Decree 82/01 of 16 November 2001. The General Accounting Plan follows international accounting practice and applies to all companies operating in Angola, whether public or private. Its intention is to improve the quality and detail of the accounting information produced by the enterprises, the comprehensibility of the accounts, and the quality of national statistics.

It should be noted that there is legislation through Decree no. 6/96 of the Council of Ministers for the revaluation of fixed assets for all enterprises.

Public enterprise accounting will be assisted by the mandatory appointment of a fiscal council, appointed jointly by the sector and Finance Ministries, with responsibility for the supervision of the enterprise accounting (Decree 42/01 of 6 July 2001). The fiscal council will have oversight responsibility over the full scope of the enterprises’ activities. It will assess the standard of the enterprises accounts and, in particular, the annual report and accounts, audit the enterprises’ accounting, and verify the equity values. It will report to competent bodies any financial irregularity identified and make declarations on any subject of financial interest to the enterprise.

Under the new rules, public enterprises must submit the annual report and accounts for the previous calendar year to the Finance Ministry by March 31. This document is to include the directors’ report, the balance sheet, the profit and loss statement (including a proposal for the distribution of profits), the source and use of funds, and the fiscal council’s opinion.

incentives for investors. This is a defensible position because evaluation of fiscal incentives in a wide range of countries shows that reducing disincentives (such as weak institutions and poor governance) matters far

### Box 3.3 | Angolan Taxation Policy and Levels

**Corporate profits**—whether public or private, domestic, or foreign—are taxed in Angola at 35 percent. Profits on agriculture, forestry, or cattle-raising attract the only concessional corporate tax rate (20 percent).

**Customs duties** are levied on an “ad valorem” basis, and are charged at rates ranging from 2 to 35 percent. Consumption tax varies from 2 to 30 percent and is applied to both local and imported goods.

**Withholding taxes** are levied at source on dividends and royalties (at a rate of 10 percent) and on interest (at a rate of 15 percent). A **tax on contracts** is levied at the rate of 3.5 percent for construction, improvement, and repair of fixed assets and at 5.25 percent for all other contracts.

**Personal income tax** rates on salaries and wages, bonuses, and benefits ranges from 4 to 15 percent. Contributions for social security are compulsory and total 11 percent. The employee contribution is 3 percent, and the employer contribution is 8 percent. It is understood that the current taxation levels and policies are in the process of being revised.

**Public enterprises** are subject to taxation of profits at the corporation rate—namely, 35 percent—as well as to the other principal taxes. They are also obliged to deduct personal income tax and to contribute to the social security program in the same way as private companies.

more in fostering investment. This applies particularly in the infrastructure sectors. Addressing macroeconomic instability by restoring fiscal balance is a key objective at this point. Once this has been achieved, a policy of reducing corporate taxes across the board is likely to bring larger benefits in terms of encouraging industrial and technological investment than offering selective incentives to particular categories of investors.

Rather than targeting an increase in foreign investment, the incentive legislation passed into law on July 25, 2003, seeks to promote certain sectors, encourage the development of deprived areas of the country, and assist small-scale enterprises. The provisions of this legislation, known as the Law on Tax and Customs Incentives for Private Investment, are summarized in table 3.1.<sup>1</sup> To be eligible for the incentives, an investment project should belong to one of the priority sectors, and the company involved should be legally established, with an adequate accounting system and no debts of any nature to the

state or the social security system. The level of incentives is then related to the development area where the project is to be located. The law also makes provision for the establishment of special economic areas, where additional incentives are to apply.

#### *Prices and Subsidies*

At present most infrastructure service providers are forced to make do with inadequate prices and therefore operate at a loss. Costs overwhelm revenues and enterprises depend on subsidies from central government, although in some cases the subsidies come through provincial governments or other channels. Subsidies generally cover varying proportions of both capital and operating expenses, are untargeted, and do not provide any sort of incentive to enterprise managers to improve efficiency.<sup>2</sup>

High inflation levels require frequent and substantial price increases for providers to break even. When services are prone to interruption or are in short supply, consumers are reluctant to agree to pay higher tariffs. Some consumers, particularly public sector institutions such as hospitals, schools, and the armed forces, are not in a position to pay for budgetary reasons. Revenue shortfalls compound the problems of delayed maintenance and production difficulties.

In preparation for the introduction of PPI, public infrastructure enterprises should be encouraged to review current cost bases and set new levels and structures for infrastructure prices that will move towards tariffs covering not only all production and maintenance costs, but also generating an after-tax profit sufficient to satisfy the return on the initial capital investment. Any review of tariffs would provide an opportunity to introduce new tariff structures, which have an appropriate mix of fixed charges and volumetric charges (where sufficient metering is in place), and make proper provision for “lifeline tariffs” to protect vulnerable groups of consumers.

The new Private Investment Law provides guarantees that the state will not interfere in setting prices. This is an important provision that will in due course require revision of all legislation currently in force that provides for government involvement in the establishment of prices of infrastructure services and a wide range of other goods and services.<sup>3</sup>

**Table 3.1 Provisions of Law on Tax and Customs Incentives for Private Investment**

Category	Detailed provisions
Priority Sectors	Agriculture, livestock, fishing and fishery products Industry (packaging; capital goods—machinery, equipment, tools, and accessories, especially for the agricultural, textile, and footwear industries; wood, paper, and plasterboard industries; food industry; construction materials; information and telecommunications technologies) Health and education Civil works, roads, highways, railways, and telecommunications infrastructure
Development areas (A = least favored) <sup>+</sup>	Area A—Includes Luanda Province and the seats of the municipalities of Benguela, Huila, and Cabinda provinces Area B—Remaining municipalities of Benguela, Cabinda, and Huila provinces, and South Kwanza and Zaire provinces Area C—Bengo, Uige, North Kwanza, North Lunda, and South Lunda Provinces Area D—Huambo, Bié, Moxico, Kuando-Kubango, Cunene, Namibe, and Malange provinces
Allowable expenses	Up to 120 percent of all expenses incurred with the construction and rehabilitation of roads, railways, telecommunications, water supply, and social infrastructures for workers, their families, and populations in those areas Up to 100 percent of all professional training expenses of Angolan workers Up to 100 percent of all expenses with the purchase of art objects from Angolan artists, provided that such objects remain in the country and are not sold during a 10-year period
Waivers of customs duties*	<i>Capital goods</i> : 3 years area A, 4 years area B, 5 years area C, 6 years area D (50 percent duty reduction for secondhand capital goods) <i>Imported inputs</i> : 5 years
Other waivers	<i>Industrial tax</i> : 8 years area A, 12 years area B, 15 years area C, 15 years area D <i>Withholding taxes</i> : 5 years area B, 10 years area C, 15 years area D
Small-scale enterprises (US\$ 50,000–US\$ 250,000)	<i>Customs waivers</i> *: 50 percent when various conditions met, including creating 20 jobs (75 percent when equipment is secondhand) <i>Industrial tax waiver</i> : for 5 years when 30 or more jobs created (plus other conditions) <i>Withholding tax waivers</i> : for 10 years when 50 or more jobs created (plus other conditions)
Transport companies	<i>Customs duties waiver</i> * on trucks, buses, vans, and other vehicles (50 percent duty reduction for 3 years in case of secondhand equipment)
Special economic areas	<i>Customs duties waiver</i> *: for 10 years <i>Income tax</i> : blanket waiver for capital-related income and loans and income arising from technology transfer; other income exempt from tax for 12 years <i>Urban property tax</i> : owners of buildings in special economic areas exempt for 5 or 10 years.
Schools and clinics	Reduction of <i>income tax</i> from 20 percent to 10 percent when 10 percent of private school and health clinic capacity is granted to poor students and patients.

<sup>+</sup> Parliament changed the Council of Ministers' definition of the development areas.

\* Stamp duty and taxes related to provision of import services still payable.

### Financing Environment

The finance sector in Angola is not well developed. There is no stock market, the money market has very few tradable instruments, the insurance sector is dominated by two state enterprises,<sup>4</sup> and there are no institutions specializing in housing finance. The banking sector consists of nine commercial banks, one merchant bank, four representative offices of foreign banks, and a few institutions providing loans to small-scale enterprises. Among the commercial banks, three are foreign-owned and two are state banks, *Banco de Poupança e Crédito* (BPC) and *Banco de Comércio e Indústria* (BCI). The state banks account for about 45 percent of commercial bank assets.

In the prevailing macroeconomic climate, profitable opportunities lie in short-term commission-related activities, such as currency trading, trade finance, and commercial business. Lending for productive purposes has largely been to petroleum and diamond-related enterprises. At the end of 2002, commercial loans amounted to just kwanza 7.7 billion (US\$ 230 million) or 13 percent of the total commercial bank asset base of kwanza 58.5 billion (US\$ 1.74 billion at the prevailing market exchange rate of 33.6). Low lending levels have also been due to a lack of demand, perhaps because for borrowers the very high interest rates (84 percent to 120 percent p.a. over the last three years) may have appeared unattractive and risky. More



recently, however, it is reported that demand for credit has been strong, with lenders seeking to take advantage of interest rates, which remain negative in real terms.

Over the medium term, if the government succeeds in strengthening the macro-economy, a much higher level of commercial bank lending could be anticipated. However, infrastructure investment is inherently long-term, and normal commercial bank instruments are not well suited to this. Further development of the insurance and pension industry and the establishment of a stock exchange to provide equity finance would greatly enhance domestic financing capacity. The establishment of a special purpose Infrastructure Development Fund to mobilize and channel resources from government, donor, and private sector sources may also be beneficial. This idea is discussed further in the recommendations (see chapter 8).

Access to foreign sources of finance for infrastructure investment and competition within the banking sector will be improved if some of the foreign banks obtain banking licenses and convert their representative offices into substantive banks. The availability of finance may also change dramatically if plans for expanded oil production are accompanied by maintenance of high prices on world oil markets (thereby perhaps doubling current oil revenues). Return of private funds held offshore as the economy starts growing and confidence is restored could also provide significant levels of foreign resources to be channeled into investments to sustain economic growth.

In sectors such as telecommunications, it should be possible to finance much of the equipment component of investments through supplier credits. Angola will also be eligible for various types of concessionary finance for infrastructure investments. This is discussed further in box 3.4.

#### **Foreign Investment**

Potential foreign investors in infrastructure services in African postconflict states such as Angola realize they operate in the most challenging parts of the world and in some of the most difficult sectors to gain economic returns. To be successful in attracting foreign investment, governments must therefore be able to meet the competition for those investment resources from the many other eligible countries. With the commitment the government has made to modernizing its private investment regime, Angola is well placed to do this.

#### **Box 3.4 Concessionary Finance for Infrastructure Investments**

Potential sources of equity as well as of debt finance for infrastructure investment in Angola include regional development banks (such as the African Development Bank, the COMESA Bank, and the Development Bank for Southern Africa), and multilateral sources (including, within the World Bank Group, the International Finance Corporation).

There are a growing number of multilateral and bilateral funds that are targeted specifically at assisting PPI in sub-Saharan Africa (SSA). One example is the Emerging Africa Infrastructure Fund (EAIF). This US\$ 300 million concessional lender was established in 2001 with a view to supplying senior debt to viable infrastructure projects in SSA countries. Soundly structured medium-sized (up to US\$ 30 million) infrastructure projects in Angola would satisfy the principal geographic and investment criteria for the Fund.

The PPI investor criteria section above deals with the criteria for achieving private sector participation in infrastructure. Once these criteria are satisfied, governments are in a position to invite bids, usually by way of international competition, in response to detailed requests for proposals to transfer risks to the private sector under the appropriate PPI contractual arrangements. The structure and quality of the transaction that Angola offers is probably the single most important determinant of whether investment will occur, but there are a number of other key issues which the foreign investor will need to consider.

One of the primary concerns of foreign investors in Angola will relate to the legal framework for foreign investment. This is discussed in the introductory overview and investment, privatization, and labor laws sections, below, where the provisions of the recent Private Investment Law (Law 11/03 of 13 May 2003) are discussed. When it comes into force, this law will replace the previous Foreign Investment Law (Law 15/94), updating the provisions to reflect postconflict circumstances and to create a level playing field between domestic and foreign direct investors.

Critically important elements to foreign investors are the prevailing foreign exchange regime and law pertaining to the convertibility and transferability of profits and investment proceeds. The exchange rate for the kwanza is market determined, but is supervised by the National Bank of Angola (BNA), which authorizes

dealers and banks to trade in foreign exchange. All capital operations and invisible operations greater than US\$ 50,000, including movements of investor funds and repatriation of dividends out of Angola, are subject to prior license from the BNA. Foreign investors may remit profits and dividends, subject to authorization by the Ministry of Finance and provided the investment exceeded US\$ 0.25 million.

Another key matter of concern to foreign investors is the government's policy on employment. The new Private Investment Law requires an investor, whether foreign or Angolan, to employ Angolan nationals, while the Law on Tax and Customs Incentives has provisions to reward companies for employment creation and for the provision of training to Angolan staff. Employment of foreign workers is also allowed, but there is to be no discrimination between local and foreign workers. In all cases, salaries and social conditions are to be compatible with the employee's qualifications and experience.

This is consistent with previous legal requirements, in particular Decree 5/95 of 7 April 1995 and Decree 6/01 of 19 January 2001. The first of these decrees set a specific target for all companies with more than five employees, namely that 70 percent of them should hold Angolan nationality. Against the background of the extremely low level of education in Angola (documented in the economic and political setting section, above), the practical problem that investors have encountered has been to find Angolan employees with the requisite skills or an education level such that the employee can be readily trained. A provision of Decree 6/01 is that expatriates cannot stay in Angola for more than 36 months. However, exceptions are regularly made for high-ranking managers and highly skilled staff.

In sum, it is clear that while the investment climate for potential participants in PPI contains a number of constraints, these are clearly articulated and can be understood and planned for in advance. As the government's program of legislative and administrative simplification of investment procedures and requirements gathers pace, the climate will become increasingly attractive for foreign as well as domestic infrastructure investors.

#### **Other Constraints**

There are a number of other constraints that all investors face, whether domestic or foreign. One of the

most significant is in fact the *raison d'être* of PPI in infrastructure, that is the lack of reliable supply of infrastructure services, resulting in either interruptions to production (for example, when there is no water or electricity) or unnecessarily high costs (e.g., the purchase of a standby generator or the use of airfreight because cheaper forms of transport are too unreliable).

Other major day-to-day concerns in operating a business in Angola are the state-imposed bureaucratic requirements and the expectation by underpaid civil servants of additional remuneration for overcoming some of the delays and frustrations that are involved. The establishment of a new business obviously entails a high degree of engagement with the bureaucracy (see the section on the road map to transaction process and PPI approval, below), but this can be perpetuated if the firm has ongoing requirements, such as the need to import raw materials on a continuous basis.

## **Legal and Regulatory Environment**

### *Introductory Overview*

To consolidate its pro-market economic policy stance, the government has committed itself in 2002–03 to overhaul the legislative framework for private enterprise activities in Angola. Of the nine main laws, supplemented by various decrees, which constitute the overall legal framework for private investment in infrastructure in Angola, one was revised in 2002 and four are new legislative instruments, which were passed in 2003. These are the Law on the Delimitation of the Sectors of Economic Activity (revised in May 2002), the Private Investment Law, the National Private Investment Agency Law, the Law on Tax and Customs Incentives for Private Investment, and the Voluntary Arbitration Law (all passed in April 2003).<sup>5</sup> A revised Privatization Law is expected to be passed in 2003.

As a result of the promulgation of the new laws, investment in Angola will be more attractive, easier, and more rapid than has been the case in the past. In particular, the Private Investment Law establishes a system of prior declaration, whereby the National Private Investment Agency (ANIP) will take a final decision on investments of up to US\$ 5 million within 15 days. The Council of Ministers will approve larger investments and those involving licenses or concessions (provisions that will apply to most if not all infrastructure projects) within a period of 30 days. These



approval mechanisms will remove a significant element of uncertainty at an early stage in the project cycle. However, many of the detailed provisions relating to large complex projects will remain to be negotiated and finalized in the postapproval phase and this will involve interacting with a number of national, provincial, and local government agencies. The requirements and procedures involved in this process are explained further in the discussion of the “road map,” below.

An unambiguously beneficial advance relates to the new law permitting voluntary arbitration. In the past, resorting to the overburdened and cumbersome Angolan court system to resolve disputes has taken up to 10 years to produce a result, even in quite straightforward cases. The new law creates an alternative, yet robust, legal mechanism for the resolution of commercial

disputes. This has the effect of replacing a key source of concern with a structure offering the flexibility, confidence, and efficiency required by investors.

The main legal instruments relating to private infrastructural investments are summarized in table 3.2, below. These define which infrastructure activities the private sector is permitted to undertake (on its own or in partnership with the state), the contractual regime for activities involving the private sector, the approval process for investments (including the National Private Investment Agency’s role), and the requirements for privatization of state activities. The laws also lay out the fiscal rules and incentives and the legal requirements for the employment of foreign and Angolan employees, and create the mechanism for private arbitration of commercial disputes.

**Table 3.2 Main Legal Instruments Relevant to PPI Investors**

Law	Number	Date
1. Constitutional Law	Law 22/92	September 16, 1992
2. Law on the Delimitation of the Sectors of Economic Activity	Law 5/02 (replacing Law 13/94)	April 16, 2002
3. Private Investment Law (replacing and supplementing Foreign Investment Law)	Law 11/03 (replacing Law 15/94)	May 13, 2003
4. Privatization of Public Enterprises (being revised)	Law 10/94	August 31, 1994
5. Taxation Policy and Levels	Law 5/99	August 6, 1999
6. Law on Tax and Customs Incentives for Private Investment	Law 17/03	July 25, 2003
7. Labor Law	Law 2/00	February 11, 2000
8. Voluntary Arbitration Law	Law 16/03	July 25, 2003
Decree	Number	Date
1. Prices Decree	Decree 20/90	28 September 1990
2. General Accounting Plan	Decree 82/01	November 16, 2001
3. Public Enterprise Accounts Requirements	Decree 38/00	August 10, 2000
4. Public Enterprises Fiscal Councils	Decree 42/01	July 6, 2001
5. Employment of Non-residents, Foreigners and Angolans	Decree 5/95	April 7, 1995
6. Professional Activity of Nonresident Foreigners	Decree 6/01	January 19, 2001
7. National Private Investment Agency (ANIP)	Decree 44/03	July 4, 2003

**Table 3.3** Infrastructure Sector Legal Instruments

Sector and report chapter	Law/Decree	Number	Date
Energy (see chapter 4)	General Electricity Law	Law 14-A/96	May 31, 1996
	Provision for Electricity Sector Regulation	Decree 27/01	May 18, 2001
	Creation of Electricity Sector Regulator	Decree 4/02	March 12, 2002
	Revocation of Electricity Licenses	Decree 43/01	July 6, 2001
	Regulation of the Production of Electrical Energy	Decree 47/01	July 20, 2002
	Regulation of the Distribution of Electrical Energy	Decree 20/90	July 13, 2001
	Sonangol sole concessionaire for exploration and production	Hydrocarbon Law	1978
Water (see chapter 5)	Water Law	Law 6/02	June 21, 2002
	Water Pricing	Decree 27/98	May 22, 1998
Transport (see chapter 6)	Creation of INEA	Decree 28/90	
	Enactment of Road Fund	Decree 27/94	
	Concession of Port Services	Decree 53/97	
Telecommunications (see chapter 7)	Liberalization and complimentary services	Decree 18/97	March 27, 1997
	Decree 18/97 Modified	Decree 9/99	June 4, 1999
	Concession for mobile services	Resolution 12/00	May 19, 2000
	DNT functions	Decree 2/98	January 16, 1998
	INACOM's statutes	Decree 19/99 and 12/99	June 25, 1999
	Rules for access to public telecommunications services	Decree 44/02 & 45/02	September 6, 2002
	Approval of GOA ToR for public fixed line operators competition	Executive Decree 12/01	March 30, 2001
	Telecommunications Act and creation of FADCOM	Law 08/01	May 11, 2001

As already mentioned, PPI will generally require the issuing of a license or a concession. The license and concession regime requirements are not uniform and are defined in the specific legislation for each sector. Table 3.3 provides a summary of the main legal instruments by infrastructure sector.

In assessing the PPI legal framework in Angola, an investor has to assess the framework laws and sector laws together and ensure that when it comes to negotiating a contract there are no conflicts with either set of legal instruments. The centralization of the approval process for concession contracts in the Council of Ministers, together with the lack of a single legal framework for concessions, remains a barrier to private sector participation. When the Private Investment Law and other new legislation come into force, the previous highly bureaucratic process concerning privatizations, specific foreign investment requirements, and the approval of work visas for expatriate workers should

be dramatically simplified and streamlined, but this remains to be tested in practice.

The main investor risk arises from the provisions in the sectoral laws, which enable the state to nationalize assets (*proceder ao resgate*) when it deems it in the nation's interest to do so. However, the Constitution, the Private Investment Law and the sectoral framework laws do guarantee the foreign investor the right to compensation if this occurs, in accordance with international law and international dispute resolution procedures. At this point, there is also a high level of regulatory risk in that regulatory frameworks are largely undeveloped. The only stand-alone infrastructure regulatory body presently in operation (telecommunications sector) does not have an adequate degree of autonomy from government. Without a more robust legal framework for infrastructure regulation, there is a high risk of political intervention in the granting of licenses and concessions and the determination of prices.

## Investment, Privatization, and Labor Laws

### Constitutional Law

Law 22/92 of 16 September

The Republic of Angola's economic system allows for the coexistence of several types of public, private, mixed, cooperative, and family property, all afforded equal protection under the law. The state encourages the participation of all economic agents and capital, in the interest of national economic development and of satisfying the basic needs of the citizens. The law determines those sectors and activities for which state control is a necessity due to the national interest. According to the law, it is incumbent upon the state to protect foreign investment and the property of foreigners.

### Law on the Delimitation of the Sectors of Economic Activity

Law 5/02 of 16 April, replacing Law 13/94

The original Law 13/94 was a fundamental piece of legislation in defining the change from the centralized state-controlled system towards a market economy. It established the concept of three levels of "reserve" economic activities for which the state reserved a special role, in recognition of its right to participate in those areas that require coordination for the general public good. The three levels of reserve, which are maintained in the recently issued replacement Law 5/02, and how these impact on the infrastructural sectors are as follows:

6. *Absolute reserve*: activities, which can only be carried out by the state or wholly state-owned entities.

The basic network infrastructure for telecommunications and airport and port infrastructure are defined to be areas of absolute reserve.

7. *Controlled reserve*: activities, which must be carried out by the state or entities in which the state has a majority shareholding.

The postal service and local communications network, when they are an extension of the basic telecommunications network, are considered to be areas of controlled reserve, that is, where control, though not necessarily outright ownership, is reserved for the state. They can be developed by public companies or private organizations in which the state has a majority shareholding.

8. *Relative reserve*: activities in which concessions can be granted to private firms to carry out the activities for a defined period of time.

The following infrastructure activities are considered as the relative reserve of the state and therefore require concession contracts if they are to be carried out by companies or entities not in the public sector:

- Electricity generation, transmission, and distribution for public consumption;
- Water capture, treatment, and distribution for public consumption through fixed networks;
- Basic sanitation;
- Exploitation of port or airport services, rail transport, and regular air transport of domestic passengers;
- Complementary postal and telecommunication services, infrastructure that is not an integral part of the basic telecommunications network and associated telecommunication services.

In summary, national and foreign private investors are allowed to participate in those areas specified as the controlled and relative reserve of the state. Various forms of participation are possible, including in the areas of relative reserve management contracts or leasing contracts.

The delimitation law reiterates that the state is committed, under the Constitution of Angola, to providing all types of property and management systems with equal protection and promotion and no discrimination.

### Private Investment Law

Law 11/03 of 13 May

The Private Investment Law 11/03 succeeded the Foreign Investment Law 15/94. It is significant that the new law applies to all private investment and is not specifically oriented to foreign investment. One of its major objectives is to avoid any distinction being made between national and foreign investors. For example, the definition of an external investor refers to the origin of the capital investment, not to the nationality or country of residence of the investor. Angolan investors and those from abroad are to be treated in the same manner, with no special privileges, but with the assurance of the same legal rights and guarantees, which are spelled out in detail in the law.

As mentioned in investment, privatization, and labor laws, above, the Private Investment Law establishes a system of prior declaration, whereby a final decision on investments of up to US\$ 5 million is to be taken within 15 days by the National Private Investment Agency. The lower limit of projects to be considered by ANIP is US\$ 50,000 in the case of Angolan national investments and US\$ 100,000 for external investments. Projects involving capital investments greater than US\$ 5 million, or those requiring a concession, are to be approved by the Council of Ministers, but ANIP is still to be involved in receiving and processing the applications.

A proposal can usually only be rejected for reasons of a legal nature. Once a proposal is approved (whether by ANIP or by the Council of Ministers), the law specifies that ANIP is to issue a Private Investment Registration Certificate (CRIP). This is to contain identification details of the investor, the procedural regime for the investment, the economic and financial parameters of the investment, its location and time frame, and the manner in which the project is to be implemented. The CRIP is to be the document certifying the acquisition of rights and the assumption of duties by the investor and then is the basis for all investment operations, access to incentives and benefits, obtaining of licenses, and registration for the settlement of litigation.

The Private Investment Law makes provision for fiscal incentives. Eligibility for incentives and the detailed provisions are laid out in the companion Law on Tax and Customs Incentives for Private Investment: this is summarized in this report in table 3.1, above. The law also specifies certain financial rules for private investment operations. These include mandatory use of legally authorized banking or financial service institutions and access to foreign currency at market-determined exchange rates.

In times of exceptional balance-of-payments stress, the governor of the National Bank of Angola is empowered to schedule the transfer of funds abroad over a period to be negotiated and agreed with the investor. The import of machinery and equipment is to be licensed directly by the National Bank of Angola. A period of 15 days is stipulated for the issuance of an import license, after presentation of the necessary documentation, including the CRIP.

While allowing for the contracting of qualified foreign workers, the Private Investment Law obliges private enterprises to employ Angolan workers, assuring them of the necessary professional education and offering a salary and social conditions compatible with their qualifications and experience. Any type of discrimination between local and foreign employees is forbidden.

#### *National Private Investment Agency*

Decree 44/03 of 4 July

The National Private Investment Agency's (ANIP) role and functions are spelled out in the ANIP enabling legislation and in the Private Investment Law. ANIP is the body that henceforward will be responsible for enforcing the national private investment policy defined by the government, as well as for the promotion, coordination, orientation, and supervision of private investment.

ANIP's key roles in approving investments between US\$ 50,000 and US\$ 5 million, receiving and processing project documents, which are to be considered by the Council of Ministers, and issuing the crucial CRIP certificates to project promoters, have been spelled out in the previous section. ANIP is also to be in charge of the administration of the incentives system applicable to investment projects. In exceptional circumstances, the incentives can include compensation for aspects of employee training costs (to overcome skills shortages), for the additional costs of establishing a project in a very remote area, or for having to provide infrastructure services, which would normally be expected to be available from public utilities.

ANIP is to be controlled by a board of directors with four members appointed for a three-year renewable mandate by the Council of Ministers. There is also to be a fiscal council and an advisory technical council. ANIP reports to the head of government. However, for a number of specific matters (participation in private entities, acceptance of donations, inheritances, legacies, and so on), it reports to the Minister of Finance.

#### *Privatization of Public Enterprises Law*

Law 10/94 of 31 August<sup>6</sup>

The privatization of enterprises and private participation in other assets of the state are supposed to be made through public tenders, but in many cases limited

tenders or direct negotiations are used. The Minister of Finance is responsible for making a final decision based on the evaluation and results approved by a Negotiation Committee [including representatives of the sectoral and finance ministries, the privatization unit of the Ministry of Finance (GARE), the Office for Entrepreneurial Restructuring, and the National Private Investment Agency]. The Minister of Finance is also responsible for the approval of the privatization operations of small and medium enterprises, other parastatal assets, and participation of the state or state enterprises in commercial firms.

Approval of the privatization of large enterprises is the responsibility of the Council of Ministers on the recommendation of the Minister of Finance. In the case of total or partial privatization of the property of a state-owned enterprise, the state will assume the amount of liabilities necessary to ensure the enterprise's economic and financial feasibility. In other words, liabilities will be assumed by the state to an extent sufficient to provide the buyer with an enterprise that can be operated in a commercially viable fashion, and not one that is burdened by a legacy of unserviceable debts.

The employees of the enterprises or parastatal organizations subject to privatization keep their rights and obligations. Employee participation is encouraged through a proportion of the shares of the enterprise being sold being reserved for employees (30 percent in the case of medium enterprises; 15 percent in the case of large enterprises). Employees benefit from a 30 percent discount on the price of shares in the entity.

### *Labor Law*

Law 2/00 of 11 February

The Labor Law applies to all workers in Angola, whether local or foreign. It lays out the basic rights of workers as being the right to work (including the free exercise of their profession), to join a trade union, to participate in collective negotiation, to participate in meetings, and to strike. The law makes various provisions, which are intended to protect workers' rights, but are also likely to make employers more hesitant about employing workers.

Employers are required to have contracts with workers. These will generally be written contracts,

although consensual oral contracts are permitted for local employees. Normally contracts are to be of unlimited duration; contracts of restricted duration are only allowed under specific conditions laid out in the law and then for no more than 6–12–36 months (depending on the type of provision that applies). Continued employment after the expiry of the limited duration contract requires an unlimited duration contract to come into force.

The law specifies the conditions under which an employment contract may lapse or in which an employee may be dismissed. In the latter case, the employee may seek the assistance of the Trade Union or petition the Ministry of Labor or, ultimately, the Labor Tribunal. In almost all cases of workers leaving jobs, termination benefits will have to be paid, according to formulae defined in the law.

With exceptions provided in the law, the normal period of work cannot exceed 8 hours per day or 44 hours per week. Workers have the right to 22 working days of paid leave p.a., with a holiday and Christmas bonus equal to 50 percent each of the monthly salary being paid amounting to 100 percent in total. Women have the right to three months of maternity leave on full pay.

### *Public Procurement, Licensing and Concessions*

**Public Procurement** The license and concession granting process has to be preceded by a tender following one of the possibilities defined within the law relating to public procurement (Decree 7/96 of 16 February): public tender, limited tender with pre-qualification, limited tender without expression of interest, negotiation with or without previous advertisement, and direct award. The easier processes are for less complex and lower-valued public procurement transactions. However, because the financial limits for these options are not indexed in the law, inflation has severely eroded the financial values for the different levels. As things stand at present, any procurement involving an amount above US\$ 6,600 in terms of the law should be subject to the provisions of a full public tender.

In practice, some discretion is applied to the procedure that is relevant in any particular circumstance.

License and concession applications for infrastructure projects would all fall under public tender or else, in some cases, limited tender with pre-qualification requirements. At the same time, the specific requirements of the sectoral laws have to be fulfilled. The steps that are involved, taking both public procurement and sector-specific infrastructure issues into account, are spelled out in the road map to transaction process and PPI approval section, below. Tenders have to be opened in public, bidders have the right to scrutinize all the tenders, and there is a tight time-bound procedure for appealing against tender awards.

**Licenses and Concessions** Licenses are considered to be of a lower level of national importance than concessions. This is evident from the fact that licenses are issued and supervised by the sectoral ministries, the regulatory bodies, or by provincial governments, whereas concessions fall under the Council of Ministers.

The sector laws that regulate the issuing of licenses do not grant specific rights to the licensees but do stipulate their duties (the water and telecommunications sectors are exceptions, as both rights and duties are specified in the recent Water Law and in Decree 44/02 of 6 September 2002, respectively). Most of the rights stipulated in licenses are transmissible. By contrast, the transmission of the rights of a concessionaire is dependent on a previous authorization by the Cabinet or the conceding entity or on the expiry of a previously fixed term.

Licenses and concessions are annulled by lapse, revocation, redemption, reversal, cession by the license owner, or agreement between the parties. The revocation of licenses is a major constraint. In fact, licensees may be revoked for reasons that are not stipulated in the legislation, since the reasons included in the legislation are merely considered as examples. Another factor already highlighted in the introductory overview section, above, is that both licenses and concessions may be revoked when the government deems it in the national interest to do so. In such cases, licensees or concessionaires would be entitled to compensation, but the criteria for determining the compensation amount and terms of payment is not clearly specified.

The concessions regime is spelled out more clearly in legislation than that for licenses. The concession

provisions in the sector laws and related regulations for electricity, water, ports, and telecommunications are briefly reviewed below. In all cases, the concessionaires have to pay taxes and tariffs that the government sets.

Concessions for electricity generation, transmission, and distribution will be granted for a period of up to 50 years, and the concessionaires have to submit a guarantee with a maximum limit of 5 percent of the investment's total value. They are also liable to the taxes and tariffs that are fixed by decree of the Minister of Finance. The electricity tariff system and the general conditions of purchase and selling electricity at different levels within the public power system are the subject of government regulations. Concessionaires are required to make tariff proposals, which may be approved only after consultation with the representatives of consumers and the local government authorities. Concession contracts must include an initial tariff framework with a validity of five years.

Concessions for the private use of water are granted for a maximum of 50 years and are subject to renewal. This is a provision of the recently passed Water Act, and as yet there are no regulations or examples of operational concessions in the water sector.

Concerning the ports, the domainal uses can only be granted by means of a domainal license title, a domainal concession contract, or under a public service concession contract. Unless there is a contrary resolution of the Council of Ministers, a domainal concession contract cannot be granted for a period longer than 30 years, and it cannot be renewed or extended in any way. The concessionaire has to submit a guarantee, to be defined in the contract, and pay the domainal rent plus taxes. Port concessions will be granted for periods of up to 30 years; it is not possible to transfer the concession to a third party. At the end of the contract, all the assets integrated in the concession establishment revert automatically to the port authority without any additional compensation being payable. The tariffs associated with the concession are submitted to the concession authority for prior approval.

In the telecommunications area, the following services are subject to concession contracts: cellular mobile service, leased line services, local telecommunications services when representing an extension to the basic network, Internet services, and other services subject



to the availability of limited resources deriving from their public utility, particularly the radio frequency spectrum. The direct or indirect participation of single or collective foreign entities in the equity capital of public telecommunications or added value operators cannot exceed 49 percent. Therefore, foreign entities must remain minority shareholders. It is the regulatory body's responsibility to establish the tariff structure for each type of service.

Telecommunications concession contracts have a maximum validity period of 15 years, successively renewed after a five-year period. The concessionaires have to pay an amount equivalent to 5 percent of the investment's total cost projected for the first five years, (which represents the price of the license plus taxes), and to submit a guarantee with a minimum value of US\$ 300,000. The minimum amount to be invested is US\$ 3 million.

### *Land and Pricing*

**Access to Land** The Constitutional Law, Law 22/92 of 16 September, establishes the principle that the land is originally the property of the state, but that the rights to usage of the land can be transmitted via concessions to individuals or legal entities, whether national or foreign. Law 21-C/92 of 28 August defines the right of use and improvement of three categories of land, with most of the provisions relating to agricultural land (the other categories are "nonagricultural" and "special"). PPI investors will mainly be interested in land that is designated for nonagricultural use. The first point is that the state may auction concessions to non-agricultural land. There are also annual fees that have to be paid. Land concessions may be unlimited in duration, but more typically are issued for a period of less than 45 years, with provision for renewals (for periods no longer than the original fixed period). The concessions can be revoked under strictly defined circumstances, with compensation then being payable to the concessionaires. Land concessions can be transferred in certain cases, although the state may have preferential rights. Permission to make a transfer has to be obtained and a fee paid equivalent to 5 percent of the amount involved in the transfer. Land rights are in rare cases accepted as surety for loans by certain Angolan banks.

### *General Basis for the Organization of the National System of Prices*

Decree 20/90 of 28 September

This decree lays out principles for establishing prices of all goods and services available in the Angolan economy. It also makes provision for the government to directly control certain prices. In principle, the state fixes prices in the case of those goods and services that have a significant impact on the population and are of strategic importance to Angola's economic and social development. The state also intervenes in the setting of prices for goods and services for which demand is not elastic or for which production or distribution and sale are monopolistic or oligopolistic.

The Minister of Finance is responsible for establishing the lists of products and services that will be subject to an administered price regime. Infrastructure items that are subject to direct price controls are water, electricity, ports, airports, and fixed line communications. In some cases, the Ministry of Finance has delegated some of its price fixing powers to other agencies. This may be part of government policy to decentralize (for example, water tariff setting has been delegated to the provincial governors via Exec Decree 27/98, 22 May 1998), or due to the establishment of a professional regulatory body (such as INACOM in the telecommunications sector).

As mentioned in the investment, privatization, and labor laws section, above, the new Private Investment Law provides guarantees that the state will not interfere in setting prices. This is an important provision that in due course will require revision of the legislation discussed above in respect to the pricing of goods and services provided by private sector entities.

### *Judicial Process and Dispute Resolution*

There is provision in Angola for a three-tier court system—Supreme Court, Provincial Courts, and Municipal Courts—although as of the start of 2003, only a tiny fraction of the municipalities have courts in operation. The Constitutional Law, Law 22/92 of 16 September, grants sovereignty to the courts and independence of judges in the administration of justice for the people of Angola. The President of the Republic appoints and dismisses Supreme Court judges, while Provincial Court judges fall under the responsibility of the Minister of Justice.



In situations of interest to potential investors, such as lodging a claim arising from a breach of contract, there are clearly laid down procedures in the Provincial Courts, with rights of appeal if necessary to the Supreme Court. In practice, the major obstacle to utilizing the judicial system in Angola is its extreme slowness. As a result, legitimate grievances remain unresolved for long periods. For example, resorting to the courts to settle disputes over compensation under a contract can take at least a decade. The long delays are caused by a number of factors including the cumbersome system inherited from the colonial period (with no significant changes after independence), the extremely low qualifications of the administrative staff, low salaries, low morale, work interruptions, and frequent strikes in the sector.

Because of these difficulties, it has become increasingly common to resort to unofficial arbitration courts and to include provision for this in all commercial contracts. These cases have generally followed the judicial rules of the Chamber of Commerce of Paris or UNCI-TRAL. In response to this development, as mentioned in the introduction, the government has introduced a modern Voluntary Arbitration Law. This allows for contractual parties voluntarily to agree to the settlement of disputes in an Arbitration Court via a pre-specified arbitration convention. The court will be composed of one or more referees selected by the parties for their independence, impartiality, and ability to provide a rapid and fair process. The arbitral verdicts will have the same executive force as judicial verdicts and a similar system of appeals (via the Supreme Court).

The Voluntary Arbitration Law is expected to become the main framework for settling conflicts on issues arising from commercial contracts and asset rights, avoiding the overburdened public judicial system. The arbitration procedure established under the new law offers an expeditious mechanism, which also ensures juridical safety and predictability that investors require for the settlement of disputes arising from internal and external commercial relations.

#### **Road Map to Transaction Process and PPI Approval**

This section summarizes the key steps in gaining the necessary permits, licenses, and approvals for a privately

financed project. It is subdivided into the preapproval and postapproval stages.

**PPI Approval** Private sector investment plays an important role in the development of a country's economy, and its legal regime should be attractive to potential investors, offering them an environment that guarantees the security and juridical stability of their projects.

Difficulties associated with private sector participation in Angola generally do not emanate from a complex legal and regulatory framework. The number of entities involved in providing approvals for the project is relatively small and tends to lie with ANIP. Therefore, the initial approval process is highly centralized, with large projects being directly accepted or rejected on the basis of a decision by the Council of Ministers. However, the postapproval process involves many entities and long delays.

In accordance with the private investment law, there are a number of different approval processes that are to be followed depending on the project size and whether or not the sector investment qualifies as part of the contractual regime.

The National Bank of Angola can authorize foreign investments with a minimum value of US\$ 60,000 and a maximum of US\$ 250,000, but in this regime there is no right to expatriate the dividends or profits. Typically, three types of investment regime are defined:

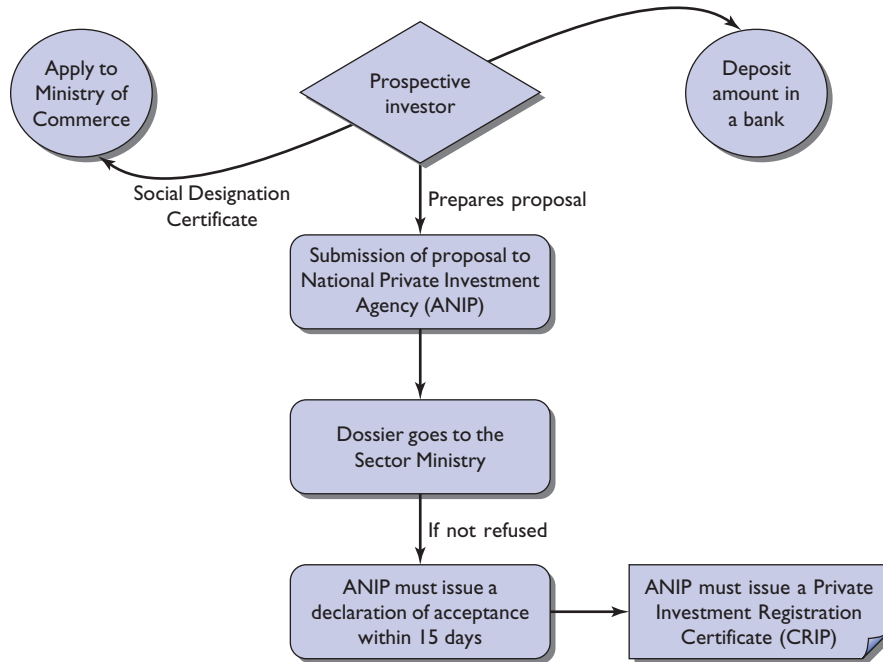
- Investments greater than US\$ 100,000<sup>7</sup> and less than US\$ 5 million
- Investments greater than US\$ 5 million and less than US\$ 50 million
- Contractual regime
  - Investments greater than US\$ 50 million or
  - Investments being channeled into strategic sectors.

**Investments Between US\$ 100,000 and US\$ 5 Million** Figure 3.1 shows the approach to gaining approval for a prospective investment in the stated range.

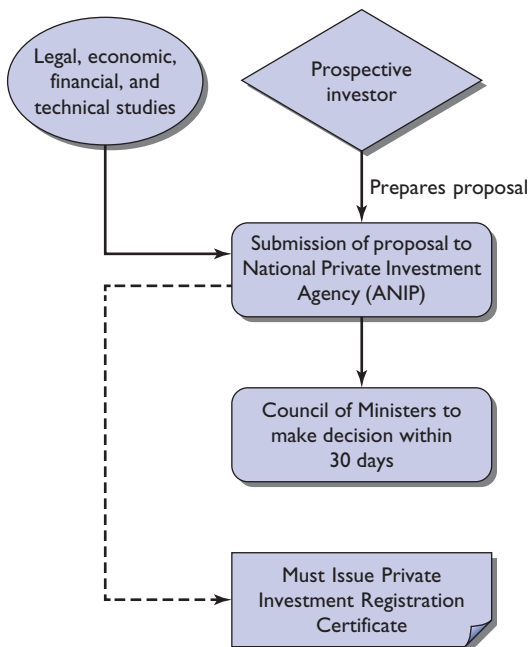
**Investments Between US\$ 5 Million and US\$ 50 Million** Figure 3.2 shows the approach to gaining approval for a prospective investment in the stated range.

**Contractual Regime** The contractual regime is mandatory for all investments that are to be channeled to

**Figure 3.1 Approval Process for Investments (US\$ 100,000 to US\$ 5 million)**



**Figure 3.2 Approval Process for Investments (US\$ 5 million to US\$ 50 million)**



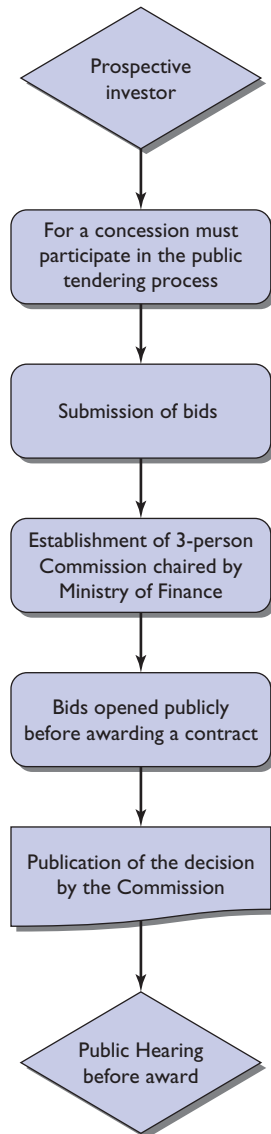
special or restricted economic activities where its management and exploitation can only be legally made under a concession. Such is the case for all activities that are considered as a relative reserve of the state under the Law on Delimitation of the Sectors of Economic Activity. It also covers investments of equivalent value or higher than US\$ 50 million or those, regardless of the amount, that are considered to be of special interest for the national economy due to its structural impact.

Figure 3.3 shows the basic steps towards a concession, which is an example of the contractual regime.

This is a lengthy and time-consuming process, which takes at least one year, as demonstrated by previous cases, e.g., in the ports and telecommunications sectors.

**Postapproval Issues** Figure 3.4 shows the necessary procedures that should be followed once the project has been approved. The postapproval requirements such as permits, fees, and taxes are a significant part of the process to realize the PPI transaction.

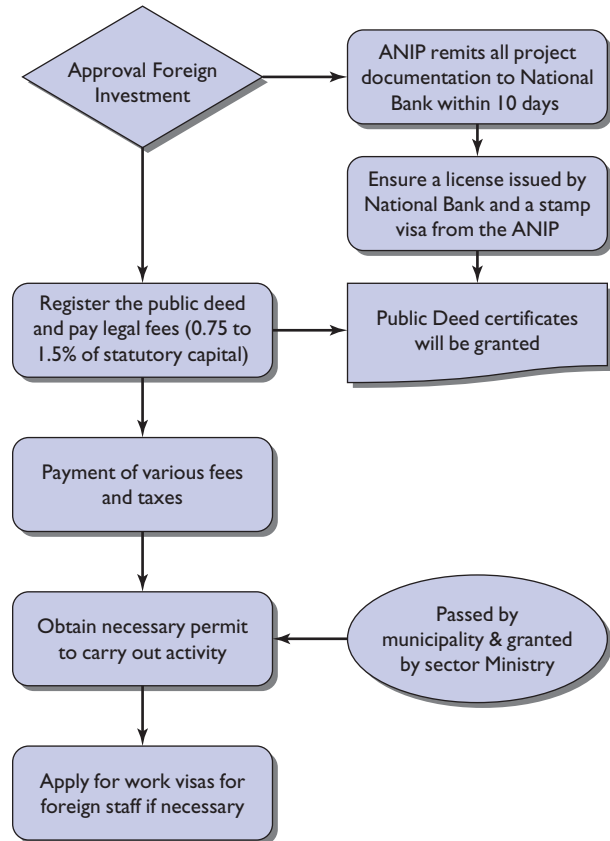
Figure 3.3 Contractual Regime



Key issues affecting investors, which can lead to significant delays, are the registration of the enterprise (with tax, commercial, statistical, and other authorities) and obtaining work permits for foreign citizens. These steps are summarized in appendix 8.

Commercial activity in Angola is subject to inspection by the following bodies: Economic Activities' National, Provincial, and Municipal Directorates, which depend on the Ministry of Interior; Fiscal Police; Inspection Services of the Ministry of Commerce; Inspection Services of the Ministry of Finance; Inspection Services of the Ministry of Health; Labour Inspection

Figure 3.4 Postapproval Process



Services of the Ministry of Public Administration, Employment and Social Security; Inspection Services of the Provincial Governments; Inspection Services of the Fire Brigade; and Inspection Service of the Regulators.

**Way Forward** There are steps to be taken in the short term to help nurture a more streamlined and transparent roadmap to PPI approval and realization of a transaction. In particular, it is necessary to simplify and make less onerous the processes for establishing and regularizing commercial enterprises and obtaining permits to exercise the commercial activity. Simplification of the existing bureaucratic and administrative processes can be achieved by reducing the costs and also the substantial number of official entities intervening in these postapproval processes. A lack of transparency and the time-consuming nature of the process tend to encourage a system of *urgent fees*, which does not facilitate a fair and conducive investment environment.

It is also important to regulate, in a clear and unequivocal way, the inspection practice of the various regulatory entities and inspection bodies and to coordinate their respective activities to avoid their multiple, persistent, and sometimes coincidental visits, which can be construed as a real obstruction to free and legal exercise of commercial activity.

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#### Notes

1. The summary is based on the version of the law approved by the Council of Ministers and reported amendments by Parliament. Therefore, the provisions in table 3.1 should be treated as indicative rather than definitive.

2. Ways in which subsidy systems could be better designed are referred to in the potential role of private participation in infrastructure section and are analyzed in more detail in appendix 3.
3. More detail is given on the new law and the existing pricing regime in the investment, privatization, and labor laws section and the land and pricing section.
4. ENSA with a 55 percent market share and AAA with a 45 percent market share.
5. The summaries provided in this report are based on the texts approved by the Council of Ministers, together with reported amendments by Parliament.
6. Law 8/03 of 18 April addressed to the transference of property (buildings) from the state to private entities. This law did not change the main rules regarding state companies.
7. It is US\$ 50,000 in the case of Angolan national investments. Investments of less than US\$ 50,000 can only be from internal capital.

# 4

## Electricity and Gas

The main energy infrastructure issues in Angola are related to the development of the electricity sector. There is a minor interest in the development of a domestic gas sector linked to a gas export project (LNG); an important part of the demand for gas would be for power generation.

### Introduction to the Electricity Sector

The electricity sector infrastructure has been damaged in many areas of the country, and major investment is needed in the rehabilitation of the system. Further, only 20 percent of Angola's population has access to "formal" electricity supply, though many more may have access through illegal connections to the state-owned networks or through small privately supplied electricity. Angola has one of the lowest per capita consumption levels in the SADC region.<sup>1</sup> Major investment will be required to extend access to a larger proportion of the population and to provide for increased electricity consumption levels as normality is restored and the economy grows.

The government's strategy and policy for the power sector are contained in the Development Strategy of Angola's Power Sector, which was approved by the Council of Ministers in September 2002.<sup>2</sup> The document proposes a number of strategies and policies aimed at providing sustainable and reliable electricity supply, including private sector participation in both the urban and rural areas.

This CFR study is concerned with the potential for development in the electricity sector through private sector participation in both urban and rural areas.

### Key Organizations

The Ministry of Energy and Water (MINEA) is responsible for the overall policy making in the sector. MINEA supervises the activities of electricity generation, transmission, distribution, and usage. The Directorate Nacional Electricidade (DNE) is part of MINEA; its role is to advise the Ministry on policy-making for electricity and proposals for tariffs. DNE has offices within the provincial government that support the development of electricity supply among municipalities that are not connected to the main grids.

EDEL<sup>3</sup> is the distribution company responsible for the electricity supply in Luanda Province. ENE is responsible for electricity generation, transmission, and distribution in the main cities of the 15 provinces outside of Luanda. Neither has exclusive concession.<sup>4</sup> EDEL supplies approximately 65 percent of national consumption and ENE 35 percent. ENE's supply includes some high and medium voltage customers in the city of Luanda.

The private operator Alrosa is an example of private sector participation. Alrosa, a diamond mining company, was recently granted a concession contract for a 16 MW hydropower plant.

In those isolated regions where there is no grid-based electricity, municipal governments often provide electricity within the larger towns.

A government decree<sup>5</sup> established a regulator, Instituto Regulador de Sector Eléctrico (IRSE), for the electricity sector. IRSE exists only in name but is

Figure 4.1 Power Sector Institutions

Power Sector Functions	Central Government	Provincial Government	Parastatals	Private Sector
<b>Policymaking and planning</b>	MOP, DNE, MINEA			
<b>Regulation</b>			IRSE	
<b>Generation</b>		3 provinces	ENE	Alrosa
<b>Transmission</b>			ENE	
<b>Distribution</b>		3 provinces	ENE (60 kV), EDEL	
<b>Concession</b>	COM-concession			
<b>Funding</b>	MOF			Private Co.

Key: MINEA = Ministry of Energy and Water; MOP = Ministry of Planning; DNE = National Directorate of Electricity; IRSE = National Regulatory Institute of the Electricity Sector (the Regulator); ENE = National Electricity Enterprise; EDEL = Electricity Distribution Enterprise of Luanda; COM = Council of Ministers; MOF = Ministry of Finance.

expected to be established with a budgetary allocation for the coming financial year (2003/04). Once in operation, IRSE will be responsible for the general supervision of the electricity sector by enforcing the General Law of Electricity.

Figure 4.1 summarizes the institutional arrangement of the power sector and the relationships among the major players.

## Legal and Regulatory Framework

### Introduction

A legal framework exists for private sector participation in the electricity sector. A regulatory framework also exists but it is deficient in several areas. The framework is described below. Comments on barriers to private sector participation contained in the legal framework are discussed in the identification of barriers to PPI in the electricity section, below.

The Law of Delimitation of the Sectors of Economic Activity<sup>6</sup> specifies in Article 13 that the “production, transport and distribution of electric power for public consumption” are areas of *relative reserve*. This means that companies or other forms of private entities can participate in these activities through concessions. The law does not distinguish

activities by scale. This implies that even small, isolated electricity schemes are restricted to *relative reserve* status.

### Licenses and Concessions

The General Electricity Law of 1996<sup>7</sup> allows for private sector participation in the electricity sector. It also includes a framework for concessions, licenses, and the import and export of electricity, and provides for a regulatory body. The law states that the Council of Ministers is responsible for granting concessions, and the provincial governments have the power to grant licenses.

The law stated that a concession is granted where the generation capacity is either greater than 1 MW or where there are more than 50,000 inhabitants in the town. Where the generation capacity is below 1 MW and there are fewer than 50,000 inhabitants, then the Provincial Government can issue a license to an operator. However, the Law of Delimitation of the Sectors of Economic Activity was enacted in 2002 and supersedes the 1996 Electricity Law. The former states that electricity is an area of relative reserve and can be performed only as a concession; this implies that any “production, transport and distribution of electric power for public consumption,” whatever the size, must be implemented through a concession.

Decree 43/01<sup>8</sup> cancelled all existing concessions and licenses in the electricity sector in preparation for the introduction of new concession arrangements. It states that those concessions or licenses existing on May 31, 2000, were to be replaced by temporary concessions lasting for a period of up to three years.<sup>9</sup>

Decree 47/01<sup>10</sup> regulates the physical production of electricity. It gives the Council of Ministers the right to grant concessions to electricity producers. The decree covers both public and private electricity generation. Also included are the conditions and procedures under which a concession can be obtained.

### **Restructuring**

To further the restructuring process, the strategy<sup>11</sup> highlights the need for ENE to achieve financial stability. As an initial step, the focus is on the accounting separation and unbundling of generation, transmission, and distribution activities. This will allow the effective identification of cost drivers and determination of transparent transfer prices.

After financial unbundling is completed, it is envisaged that the next stage of restructuring will focus on the physical and managerial separation of generation, transmission, and distribution. This will facilitate the future objective of creating separate and autonomous enterprises for each of the business functions.

### **Regulatory Body and Price Setting**

The 1996 General Electricity Law provided the enabling regulation that gave authority to the Council of Ministers to establish a regulatory body. The Council of Ministers passed Decree 4/02<sup>12</sup> in 2002, which established the regulatory body (IRSE), in principle. It is anticipated that IRSE will be set up, in reality, during 2003.

Unlike most regulatory bodies in other countries, IRSE is not granted authority to set prices or to issue licenses. IRSE's main role is to ensure that the General Electricity Law is followed. The regulatory body has a board of administration, consultative council, tariff council, and financial council. The administrative board has three people, including a president of the organization, who are nominated by the Council of Ministers. There is an obligation on the Tariff Council to give advice on a proposal for a new tariff. After seeking advice from the tariff council, the Administrative board

reviews the tariff proposal. However, tariffs are actually set by the Ministry of Finance in accordance with Council of Ministers Decree 20/90 that gives the Ministry of Finance the power to dictate electricity tariffs to be charged by public service companies. This power extends to any venture that is a concession or license. On this basis, the most recent tariff increase was introduced through Executive Decree 43/02 passed by the Ministry of Finance. Every tariff increase must be adopted by issuing a similar decree including small isolated electricity schemes.

This is clearly a cumbersome procedure and a hindrance to setting cost-reflective tariffs. An executive decree is being prepared<sup>13</sup> for an interim system of tariff regulation that will allow automatic indexation of tariffs to inflation. This will continue until IRSE begins to function.

According to Decree 45/01, article 6, uniform tariffs apply to both distribution concessions and licenses. However, "approved" differences are allowed based on the geography and characteristics of the system.<sup>14</sup>

Although the new regulator will not issue or terminate licenses<sup>15</sup> or concessions, it can submit a proposal to terminate licenses and concessions.

IRSE has the power to levy fines. In accordance with administrative law in Angola, companies can appeal against fines imposed by IRSE.

IRSE will be financed from the state budget. It can also obtain funds by selling information and policy studies, but this will not provide a substantial share of its budget.

## **Current Situation in the Electricity Sector**

### **Introduction**

The current situation in the electricity sector is described in the strategy. Following the civil war, the physical condition of the infrastructure is very poor, and many consumers cannot depend on the state sector to supply their electricity needs. A map showing the high-voltage electricity network and main power stations is provided in the appendixes.

The poor financial performance of the two state-owned companies is partly the result of the civil war that has affected the costs of power production and has made revenue collection difficult. However, prices have not been raised to match the higher costs or inflation.



Financial problems have limited the ability of the state sector to expand supply. Against this background private sector participation has flourished in the informal sector. The following subsections describe the current situation in the electricity sector before moving on to discuss the opportunities for formalizing the private sector role's in rural areas and for further private sector participation in the urban areas.

#### *Demand in the Formal Sector*

Total electricity consumption in Angola in 2001 was reported in the strategy at 1,274 GWh<sup>16</sup>; this equates to a per capita consumption of 96.9 kWh (table 4.1). The strategy also reports total electricity generation of 1,634 GWh—implying total energy losses of 22 percent. However, this value is inconsistent with information from EDEL, where total losses were 36 percent in 2001.

The majority of electricity, approximately 70 percent of the total supply, is consumed in Luanda. Luanda is supplied principally by EDEL, but ENE does have some high voltage (HV) and medium voltage (MV) industrial consumers in the province.

Only 20 percent of the population currently has access to electricity but the government expects this to rise to 36 percent by 2011. With a very similar per

capita income level to that of Angola,<sup>17</sup> Zimbabwe had a per capita consumption of electricity of 893 kWh compared to Angola's 97 kWh (in 2001). This suggests the potential for significant growth in electricity consumption in Angola.

The electricity sector strategy sets out a scenario for increase in electricity generation<sup>18</sup> as shown in table 4.2, below. This indicates a relatively modest growth of 7.4 percent p.a. between 2006 and 2011 and 6.6 percent p.a. from 2011 to 2016. Acknowledging the low national access rates and the high levels of suppressed demand, the scope for increased sales in electricity is large in both Luanda and the rest of Angola; the government demand projection may be very conservative.

There are about 180,000 consumers that are registered with ENE and EDEL. It is estimated that another 50,000 consumers exist that are not yet registered. The 2001 EDEL accounts report that there are almost 100,000 customers, including 21,000 nonmetered connections. The most recent information<sup>19</sup> from 2002 shows that there are now 102,000 registered EDEL consumers with about 30,000 nonmetered connections.

In Luanda, residential customers consume 57 percent of electricity, the industrial sector 23 percent, the service sector 18 percent, and the agricultural sector 2 percent.

#### *Demand Outside the Formal Sector*

The strategy notes the existence of “a significant informal electricity distribution market” that is illegal and uses power plants licensed for industrial or agricultural purposes. The strategy welcomes this as an indication of opportunities to promote private participation; it proposes that these schemes be properly regulated to safeguard consumers regarding tariffs and technical standards. No information is available on the numbers of such private electricity schemes or on the numbers of customers supplied in this way.

Description	Actual (2001)
Production (GWh)	1,634
Distribution (GWh)	1,385
Consumption (GWh)	1,274
<b>Other Indicators</b>	
Consumption per capita (kWh)	96.9
Population access to power (percent)	20

Source: Estratégia de Desenvolvimento do Sector Eléctrico de Angola.

Year	North	Central	South	Uige	Bie	Cabinda	Others	Total
2006	2,130	409	143	11	10	88	12	2,803
2011	3,006	608	191	16	14	153	18	4,007
2016	4,110	855	260	22	18	215	25	5,505

Source: Estratégia de Desenvolvimento do Sector Eléctrico de Angola.

**Table 4.3** ENE's Power Generation Capacity

System	Nominal thermal capacity (MW)	Available thermal capacity (MW)	Nominal hydro capacity (MW)	Available hydro capacity (MW)	Total	
					Nominal capacity (MW)	Available capacity (MW)
North	177	168	198	180	375	348
Central	62	23	49	4	112	27
South	26	9	41	14	66	23
<b>Subtotal</b>	<b>265</b>	<b>200</b>	<b>288</b>	<b>197</b>	<b>553</b>	<b>397</b>
Isolated	73	29	2	–	76	29
<b>Total</b>	<b>338</b>	<b>229</b>	<b>290</b>	<b>197</b>	<b>629</b>	<b>426</b>

Source: Sistema Eléctrico da ENE, Reabilitação, Carteira de Investimentos; a full list of plants is in appendix 4.

Though there are no statistics, there is clear evidence that a large amount of electricity is produced using autogeneration based on small diesel generating sets. Small diesel generators have very high fuel and other operating costs, and this points to a high willingness to pay for electricity and again points to business opportunities for the private sector to meet this electricity demand reliably using larger, more efficient generators supplying small (or large) networks.

#### Supply in the Formal Electricity System

Electricity generation in Angola is organized into three systems operated by ENE, the Northern, Central, and Southern system (see table 4.3 above). The largest system by far is the Northern system, with 348 MW of available capacity,<sup>20</sup> and includes the capital city of Luanda. Available capacity in the central and southern regions is only 27 MW and 23 MW, respectively.<sup>21</sup>

There are an additional nine separate island grids that ENE operates. Some of these islands were created as the result of the civil war and the destruction of transmission networks, but others have existed since before the war.

In the Northern system, the 220 kV transmission network is relatively intact, with 424 km of the total of 549 km of line in operation. The lower voltage transmission lines were, however, badly damaged during the fighting. None of the 159 km of 100 kV line in the North or the 288 km of 150 kV line in the Central regions are operating. In the South, however, 330 km of the total 450 km of 150 kV line are operating. ENE had a total of 540 km of 60 kV line in total across all of Angola and of this 180 km is functioning.

ENE is responsible for the bulk generation, transmission, and distribution of energy to the major cities of 15 out of 18 provinces.

In addition to the isolated grids operated by ENE and shown in table 4.3, there are a large number of isolated systems where the municipal government organizes its own energy generation and distribution.

Thermal generation capacity in Angola consists of diesel and gas turbine plants. The largest existing hydro plant, Cambambe, is in the North and also the Capanda hydropower plant on the Kwanza River, which is under construction and is due to be completed during 2003. The first two turbines were recently installed with a total generation capacity of 260 MW ( $2 \times 130$  MW). The civil works and reservoir are planned for an eventual capacity of 520 MW. The remaining two turbines have not yet been ordered and would take about three years to install.

Angola's goal is to eventually create a national electricity transmission system that connects all regions to one integrated grid. However, there are also many transmission lines within each region that require rehabilitation. In the absence of interconnection between regions, there are missed opportunities for the import and export of electricity between the regions.

A small interconnection exists with Namibia, but with a maximum import capacity of only 1.5 MW that supplies the isolated system at Ondjiva near the border.

A recent investment plan that ENE<sup>22</sup> prepared and is shown in table 4.4 estimates that Angola needs to invest<sup>23</sup> over US\$ 1 billion<sup>24</sup> over a four-year period to rehabilitate the current system. From this total investment value, US\$ 334 million is allocated for the refurbishment of power plants. The plan does not, however, envisage major electrification programs.

**Table 4.4** ENE Rehabilitation Investment Plan  
(US\$ million)

	Year 1	Year 2	Year 3	Year 4	Total
Generation	164	117	52	1	334
Transmission lines	87	114	27	9	236
Substations	37	31	8	–	75
Distribution	154	175	9	1	339
General	25	2	1	–	28
<b>Total</b>	<b>466</b>	<b>439</b>	<b>96</b>	<b>10</b>	<b>1,012</b>

Source: Estratégia de Desenvolvimento do Sector Eléctrico de Angola, paragraph 130.

Recent estimates prepared by MINEA suggest that the immediate investment program will cost approximately US\$ 320 million, but MINEA acknowledges that there have been no comprehensive technical assessments of investment requirements, particularly for transmission.

#### Prices

The Ministry of Finance sets uniform prices.<sup>25</sup> Historically, electricity tariffs have been below the long run marginal cost<sup>26</sup> and have not even covered operating costs. The shortfall has been met through direct government subsidies to EDEL and ENE. ENE's generation and transmission activities are, in principle, supposed to be financially viable, and subsidies are no longer provided for ENE's generation and transmission activities. We could not confirm whether revenues cover ENE's full costs of transmission and generation at a level that would cover its future investment needs. Formal subsidies continue to be provided only for ENE's distribution activities.

A tariff increase occurred in September 2002 through Executive Decree no. 43/02<sup>27</sup> and raised prices to kz 2.36/kWh (US\$ 0.047/kWh) for residential customers and to kwanza 2.16/kWh (US\$ 0.043/kWh) for low voltage (LV) industrial consumers. The tariffs are shown in table 4.5.

**Table 4.5** Low Voltage Electricity Tariffs  
(kz/kWh, September 2002)

	Social tariff (<50 kWh)	Industrial tariff (<1 kV)	Commercial & service (<1 kV)
Domestic	2.36	1.00	2.40

Source: ENE.

ENE believes that the tariff structure is distorted with low voltage consumers currently benefiting from relatively low prices, and medium and high voltage consumers paying relatively high prices. Tariff increases that ENE proposed to be cost reflective would raise the low voltage tariffs substantially more than high and medium voltage tariffs.

#### Losses and Revenue Collection

Technical and nontechnical losses in the EDEL system are very high with values of 15 percent and 21 percent, respectively, giving total losses of 36 percent. Many of the nontechnical losses are due to inefficient billing and settlement systems, illegal connections, and the lack of proper metering systems.

Revenue collection has improved markedly over the last few years although from a very low base. In 1999, EDEL's average collection rate was only 10 percent. In 2001 this improved to 54 percent, and in September 2002, it had improved to 68 percent. Improvement in EDEL's revenue collection to 68 percent is said to have been achieved through better management efforts, although it should be noted that this is still a very poor figure by international standards.

ENE has experienced a similar improvement in collection performance, but this was largely due to improvements in EDEL payments to ENE.

Combining losses and noncollection together suggests that only 45 percent of the electricity that EDEL receives from ENE is paid for; the other 55 percent is stolen, lost as heat in the transmission or distribution lines, or sold but not paid for.

ENE has negotiated a performance contract with the government and a 30 percent target level for losses and noncollection (combined) was proposed to be

achieved by 2005. This compares with a figure for 2000 of nearly 60 percent.

### Financial Situation and Subsidies

Table 4.6 shows that the total revenue obtained by EDEL from the sale of energy does not even cover the purchase of that energy from ENE. This is still the case, even when the government's subsidy is included.<sup>28</sup> In 2001, EDEL had a loss of Kz 337 million on sales of Kz 399 million (approximately US\$ 15 million). Losses, end-consumer prices, and revenue collection need to be improved significantly if EDEL is to become a viable corporate entity.

ENE's financial performance for the year 2000 is shown in table 4.7. Despite a direct subsidy equivalent to nearly 25 percent of its costs and an implicit subsidy through fuel prices, ENE had an overall loss in the year 2000. The level of loss at Kwanza 27 million (approximately US\$ 4 million) was, however, small compared with EDEL's loss in 2001 (see table 4.6).

	Kz (millions)
Sales from energy (cash receipts)	399
Subsidy	238
Other revenues	8
<b>Total revenues</b>	<b>645</b>
Power purchase costs	675
Other costs	306
<b>Total costs</b>	<b>982</b>
<b>Profit/loss</b>	<b>-337</b>

Source: EDEL, Relatório de actividades 2001.

	Kz (millions)
Sales from energy (cash receipts)	365
Subsidy	150
<b>Total revenues</b>	<b>515</b>
Cost of sales	448
Other operating costs	137
<b>Total costs</b>	<b>585</b>
Profit/loss on ordinary activities	-68
Other earnings	41
<b>Overall profit/loss</b>	<b>-27</b>

Source: ENE Relatório e Contas 2000.

Until the end of 2001, there were considerable accumulated debts among the parastatal companies and between these companies and the government. EDEL's state-owned customers owed EDEL; EDEL and other state-owned customers owed ENE; and ENE owed Sociedade Nacional de Combustíveis de Angola (Sonangol) (for fuel). In January 2002, the balance sheets of ENE, EDEL, and Sonangol were tidied up, and from that date invoices were supposed to be paid promptly.

By the end of 2002, though the debtors' position was much improved, payments from EDEL to ENE continued to be a problem, as did payments by ENE to Sonangol.

Neither EDEL nor ENE borrows commercially to finance investments. Both rely on the government for this purpose.

### Alrosa Private Power Project

There has been very little private sector participation in the formal electricity sector in Angola, but the Alrosa project represents one of the first examples of a project with a concession that the Council of Ministers approved.

The scheme will supply electricity to the Catoca diamond mine, partly owned by the Alrosa mining company,<sup>29</sup> and the local area. The developers and DNE have finalized the contract and concession arrangements. The scheme will cost US\$ 40 million to construct a 16 MW hydroelectric plant on the Chicapa River in northern Angola, together with a transmission line. Most of the generating capacity will be used to supply power to the Catoca diamond mine, cutting fuel costs by one-third. The remaining electricity, estimated at approximately 2 MW, will be sold to a small local network around Saurimo.

A development and operating company, Hydroshokapa, was established as an independent power producer. ENE is involved as a partner with a 45 percent ownership, while Hydroshokapa and Alrosa own the remaining 55 percent of the company. It is understood that ENE will make no investment in the plant but will receive 45 percent of the company's profits.

The security of revenues to Hydroshokapa is based almost exclusively on the power purchase agreement with the Catoca mine, and the project has no government guarantees. Sales to the local area will be a relatively small share of the total revenues.

The concession term will be for 40 years, after which the assets will become state property.

### ***National Fund for Electrical Energy***

As with the transport sector, a national fund is foreseen for the electricity sector to be used to widen access to electricity through a rural electrification program. The fund was foreseen in the 1996 electricity law.

Proposals for activating the fund were submitted to the government in October 2002. It was intended in the 1996 law that the fund could be financed through a range of measures including levies on electricity or petroleum products, state budget, and grants or loans from international financing institutions. The levy on electricity is not, however, expected to raise significant sums of money.<sup>30</sup> Curiously, one suggestion is that reserves created through depreciation of ENE and EDEL assets could be held within the National Fund.<sup>31</sup>

The fund currently exists in concept but not in practice. Levies on electricity or petroleum products need the National Assembly's approval.

The government recognizes that, even when the National Fund is operating, it will be wholly inadequate to finance the investments required in the sector and that private financing will be required.

## **PPI Opportunities in Electricity**

### ***Introduction***

Despite the low access levels to electricity in Angola, a large part of the population is willing and able to pay high prices for electricity supply. In the urban and peri-urban centers, many consumers have electricity access through unregulated markets where prices are high. For example, in one of the suburbs of Cazenga on the outskirts of Luanda, 77 percent of consumers surveyed<sup>32</sup> claimed to have access to electricity, but of these only one-third were EDEL customers. The survey authors suggest that even those who claim not to have access to electricity may in fact be enjoying free electricity but are unwilling to report this. It is not clear how many of the households with electricity access do not pay for electricity. The strategy<sup>33</sup> suggests that intermediaries, as in the water sector, supply electricity in these urban and peri-urban areas, and consumers pay for access to this service at prices that the market will bear. The strategy also suggests that other households rely on supply

from third parties operating very expensive diesel generators. This suggests that ability to pay is favorable for the private sector to invest in electricity supply and that what is needed is a regulatory framework that protects customers but does not discourage entrepreneurial activity.

Private sector participation is also possible in the existing state-owned organizations. Possible forms of PPI include management contracts, concessions, or privatization. These are reviewed below. First, the next section discusses the policy framework.

### ***Policy Framework***

The Council of Ministers approved the strategy in September 2002; the strategy describes current government policy in the electricity sector.

An important element of the strategy is identified as the need to increase access to electricity for a larger proportion of the population and specifically to:

Guarantee the access to the electricity supply service to a growing number of citizens and communities, in appropriate conditions and at affordable prices.

The strategy introduces a target to increase access to electricity from 20 percent in 2001 to:

- 28 percent by 2006
- 36 percent by 2011
- 46 percent by 2015

Another important objective of the strategy is to reduce the regional asymmetries in access to electricity that originated before Angola's independence and were aggravated during the civil war.<sup>34</sup> The strategy notes that there are insufficient data at present to identify the extent of the asymmetry or to identify targets.

The strategy outlines the government's commitment to reform and to private investment in the electricity sector. Proposed reforms include, among other things:

- Accounting unbundling of ENE into generation, transmission, and distribution, and
- Introduction of cost-reflective tariffs.

The strategy welcomes private sector participation.<sup>35</sup> Paragraph 99 states that one objective is to create "conditions to promote the private investment participation in the sector." It recognizes that the state does not have the financial resources to fund necessary investments in the power sector and that the state's annual budgeting process is inappropriate to the needs of major investments, which require a commitment to



finance projects that may take several years to complete.<sup>36</sup> The strategy also identifies the need to promote the establishment of local entrepreneurs to provide electricity services.<sup>37</sup>

However, the strategy believes that possibilities for private participation will be limited during the post-conflict reconstruction because of the “current specific conditions of Angola.”<sup>38</sup> In particular, it believes that Independent Power Producer (IPP) schemes such as that at Alrosa, where an industrial customer is able to provide revenue guarantees, offer the best options for private participation in the immediate future.

On the contrary, we would suggest that private operators could play an important role in helping restore the system during the rehabilitation phase provided that the legal and institutional framework is amended to allow this to happen. This does not imply that a competitive power market would be possible or desirable, but, if the framework were in place, the private sector could play an important role in restoring and expanding supply to consumers in the small or not-so-small isolated networks.

#### *Management Contracts*

Management contracts encompass a range of options that do not involve responsibility for investment, including:

- Outsourcing
- Service contracts (cost responsibility)
- Operating contract (cost and profit responsibility)

All of these are possible in the power sector especially in relation to the activities of ENE and EDEL. Good rewards to strong private management could be obtained, for example, by outsourcing metering and revenue collection services. This approach could be applied to a range of services required to operate an electricity system such as construction, maintenance, and manufacture or treatment of poles.

Outsourcing of metering and/or revenue collection services could require a private contractor to undertake investments in metering equipment or revenue collection facilities (setting up revenue collection service points, computerized billing systems, networks of data entry terminals, and so on), as well as the operation of the service. Or the contractor’s responsibility could be limited to the operation of metering and billing facilities that ENE and EDEL provided. The latter is

unlikely to be effective in achieving improvements in revenue collection and reduction in losses.

Management contracts could also be employed more generally covering the whole electricity businesses of EDEL and ENE:

- The simpler of these could be service contracts where the contractor only takes responsibility for some costs—those over which he has control—and earns profits by reducing those costs.
- Alternatively, a more complex system would give the contractor responsibility for both revenue and cost.

A full operating contract would be extremely difficult at the present time and would require a series of legal and regulatory reforms and changes to policies (such as subsidies) that are discussed in the identification of barriers to PPI in the electricity section, below.

Successful private service contracts of the simpler type, without the transfer of revenue responsibility, could help prepare the companies for later fuller private participation. In that sense they should be seen as transitional steps. Those companies that improve their operating performance would then be more attractive to private investors and their sale value would increase.

#### *Private Investment Through BOO and BOT Schemes*

One of the ultimate objectives in private sector participation is to attract private investment into the sector. The build own operate (BOO) or build operate transfer (BOT) contracts for power plants offer the possibility for private investment. These involve a private investor building a power plant and selling power under a long-term power purchase agreement to an entity such as ENE or EDEL. The advantage of a BOT contract is that the government and ENE are relieved of the direct financing costs and construction and operating risks. However, project developers do not have direct access to consumers and are invariably unwilling to accept market risk; if the market collapses, the developers still expect to be paid. Since ENE and EDEL will be seen as bad credit risks, the developers will also insist on state guarantees. BOO and BOT schemes may transfer the direct financing costs to the private sector, but ultimately the government provides guarantees and the government’s credit rating and borrowing costs would be adversely affected; the net result could be similar to that which would have occurred if government itself had financed the investments.

BOT or BOO contracts are clearly an option for large power plants but can be equally attractive for supply to smaller isolated grids. Huambo city (see box 4.1), for example, is currently supplied from container-mounted diesel generators with a unit capacity of 1 to 1.5 MVA. Container-mounted or skid-mounted plants are ideal for private sector participation. Since they are mobile, they can be relocated if demand declines or if the transmission network is extended, bringing cheaper sources of electricity to the area; this implies that private providers are less exposed to the market risk and revenue risk. Mobility also means that if there is a default on payment, the plant can be moved to another location and to paying customers. Therefore, this can lead to reduced requirement for government guarantees, although the cost of power would be high. Box 4.1 illustrates the electricity supply problems in an example in the provincial capital town of Huambo.<sup>39</sup> This case illustrates both the problems and the opportunities of electricity supply outside Luanda.

A number of variants of BOO and BOT exist, including:

- **Lease-operate-transfer (LOT)** can be used for new plant or existing plant. For example, a lease-operate scheme operates in Guyana for diesel plant supplied by Caterpillar. The generator units are owned by Caterpillar and leased to the power company for a fixed monthly fee. Caterpillar also operates the plants under contract to the power company. Lease schemes have the advantage that the direct financing costs are the responsibility of another party (e.g., the supplier or the private developer). The contract's operation component has the advantage that the private sector undertakes operation efficiently and professionally.
- **Rehabilitate-operate-transfer (ROT) schemes** can be used to rehabilitate existing plant. In Nigeria, for example, some existing gas turbine plants owned by the Nigerian Electricity Power Authority were offered to private developers to rehabilitate and to sell electricity to NEPA over a fixed contract period. The plants would then be transferred back to NEPA. In Huambo, a 10 MW gas turbine has been inoperable for approximately 10 years because spare parts were not available. It is debatable whether this could ever be restored to operation, but other plants that have fewer

#### Box 4.1 Electricity Supply in Huambo

Huambo is one of the key cities of central Angola,<sup>40</sup> but was at the center of some heavy fighting during the civil war. Apart from a handful of factories, industry in and around the city has been destroyed. Agriculture in the province is mainly run on a family scale, producing maize, sweet potatoes, and beans with little or no large commercial-scale farms.

Huambo was originally connected by 150 kV transmission lines with a larger central electricity network that included Benguela and Lobito. The transmission grid was destroyed in the war, and electricity is now supplied to the city's 7,000 customers from five container-mounted diesel generators (3 × 1.4 MVA, 1 × 1.0 MVA, and 1 × 1.13 MVA, although their available capacity is much lower than nameplate capacity because the units were not designed for conditions in Huambo). ENE transferred these units to Huambo secondhand in 1989. A 10 MW gas turbine has not operated since 1993 because of the absence of spare parts.<sup>41</sup> A new diesel plant with a capacity of 2.2 MVA has been installed, but is not yet commissioned. There is insufficient generating capacity to meet demand in full, and there is continuous load shedding in the city. Load shedding also occurs due to fuel shortages.

Outside of Huambo city, each of the 11 district towns has a small isolated electricity distribution network run by the municipal government. Small diesel generators with capacities that generally range from 150 kVA to 350 kVA supply them. The biggest, at Kale, has a capacity of 550 kVA. DNE helped finance the schemes, and ENE provides them with technical help, but otherwise the systems are self-reliant.

Electricity prices in Huambo are the same as those in the rest of Angola, despite the very high cost of running plant-burning diesel that is expensively transported to Huambo by road. The cost of electricity produced in Huambo is around 20 cents; this is said to be four times the price of electricity current in December 2002 (approximately US\$ 0.05/kWh). The losses are covered by cross-subsidies between Luanda and other parts of the ENE system.

problems might be suitable for offering under ROT contracts.

#### Private Investment Through Privatization

One of the major options for PPI in the long term is the privatization of EDEL and ENE. This would pass responsibility for financing investment to the private sector. However, this is unlikely in the near term due to a number of reasons:

- Dependence on unreliable state subsidies,



- Pricing that is dependent on MOF and not on the regulator,
- Unstable macroeconomic situation and uncertain demand,
- Difficulty of quantifying the investment obligations for rehabilitation of the network, and
- Unknown market risk because of unknown demand in different areas.

These barriers are discussed below and in the cross-cutting issues section.

More feasible in the midterm would be concessions to private operators for the larger isolated grids that ENE operates. In addition to ENE's three main grids, it operates nine separate island grids that in some cases were created following the destruction of transmission lines during the war. Some will be absorbed into the wider ENE network when the transmission lines are restored. In addition to ENE's isolated grids, there are a large number of isolated systems where the municipal government organizes its own energy generation and distribution, often with ENE and/or DNE support.

Most of the isolated grids are in need of major rehabilitation and have inadequate generating capacity to meet local demand.

The problems faced by these isolated grids also provide an opportunity for PPI. ENE may not have the resources to invest in new generating plant or to rehabilitate the local network but, under the right conditions, the private sector might be willing and able to undertake such investment and to operate these grids.

When the isolated grids are connected to the ENE grid, the local distributors could continue to operate the local network and purchase power wholesale from ENE. Container-mounted power plants that are installed to meet the demand of these isolated grids could then be transferred to other isolated sites.

To be successful, uniform prices would need to be abandoned and responsibility for pricing transferred to an independent regulator. These preconditions are discussed below in the identification of barriers to PPI in electricity section.

#### *Private Electrification and Off-Grid Investment*

In addition to Alrosa-type investments involving independent power producers selling to large, financially secure customers under long-term power purchase agreements, possibilities exist for small-scale

distribution networks to be developed by the private sector. At the moment there are isolated systems operated by municipalities and some by ENE. There are also an unknown number of informal systems operating outside the current legal framework that suggest that the willingness of consumers to pay for electricity is high. Examples of large-scale and small-scale rural electrification arrangements are given in boxes 4.2 (Guatemala) and 4.3 (Cambodia).

As part of a rural electrification strategy, private companies could be involved in the management and extension of existing distribution networks around the country. For the small isolated towns or even cities, private companies could be involved in the building of small-scale generation and the associated micro-grids for the local community. This could continue up until the time that ENE is able to connect its transmission system to the distribution system, at which time either the distribution grid would be taken over by ENE or

#### **Box 4.2 Guatemala: Large-Scale Rural Electricity Implementation**

In 1999, the Guatemalan government sold concession rights to two rural electricity distribution zones representing the western half and eastern half of the country (outside of Guatemala City) to the Spanish firm Union Fenosa. The two independent private companies thus created were Distribuidora Eléctrica de Occidente, S.A. (DEOCSA) and Distribuidora Eléctrica de Oriente, S.A. (DEORSA), respectively.

DEOCSA and DEORSA were given a 50-year concession and contracted to connect nearly 280,000 new consumers by 2004, and in return they received a grant of US\$ 650 per customer and other transmission investments at total cost of US\$ 333 million. The two companies have nonexclusive concessions but have obligations to connect any consumer who wishes to take a supply within 200 meters of the existing network. The subsidy (grant) is a performance-related payment made after the connection is completed satisfactorily; this is an example of output-based aid.

Part of the funds for the electrification program were provided through the reinvestment of the revenues from the sale of the DEOCSA and DEORSA (US\$ 100 million), with most of the balance financed by the Government of Guatemala and loans or grants from international financing institutions and bilateral aid.

By January 2002, DEOCSA and DEORSA were on target and had made 105,000 connections (target of 280,000 by 2004).

**Box 4.3 | Cambodia: Small Rural Electricity Enterprises**

Like Angola, Cambodia has very low rates of electricity access, estimated to be less than 20 percent of the population, and low levels of per capita income. The state-owned Electricité du Cambodge (EDC) is the main electricity company, with 140 MW of capacity supplying nearly 90 percent of total consumption. EDC operates isolated grids in the 16 main towns. EDC's electricity prices are very high at US\$ 0.15–0.20/kWh. The high prices are because electricity is generated from oil-fired plants.

Outside of the main towns served by EDC there has been little public provision of electricity. This gap has been partly filled by small private entrepreneurs, serving an estimated 115,000 customers in 600 small rural electricity enterprises (REEs), with a total capacity estimated to be around 60 MW and approximately 5 percent of total consumption. Most are very small—the average number of customers is under 200 and the average generating capacity is a little over 100 kW. The schemes are based on diesel generation with high costs and typically operate for only four hours per day. This results in very high final prices in the range of US\$ 0.30–US\$ 0.90/kWh and, on average, are US\$ 0.50/kWh. Nevertheless, the REEs provide a useful service and are welcomed by consumers.

A survey shows that REEs are most likely to be set up on the outskirts of towns (or sometimes on the fringes of the urban areas), which have a large number of households with income levels sufficient to afford to pay for the electricity. This implies that, although some REEs have been established in relatively remote rural areas, the majority are in semi-rural areas and close enough to EDC's operations that the interface between the activities of EDC and the activities of the REEs becomes an issue. REEs face uncertainty concerning when EDC's supply might be extended to encompass their own supply area. To build on the initial success, Cambodia needs a framework to reconcile the roles of EDC and REEs while continuing to encourage REEs.

ENE would supply bulk power to be distributed by the small distributor. Where ENE takes over the network, the distributor should be compensated. The generation costs might also be compensated or ENE could pay capacity payments for the small-scale generation as a standing reserve. It is in Angola's interest to encourage the development of distribution companies to facilitate the population's rapid expansion of access to electricity. The rural distributors should be eligible for similar, or larger, subsidies than those provided to EDEL and ENE's distribution activity.

**Identification of Barriers to PPI in Electricity***Concessions*

The Law of Delimitation of the Sectors of Economic Activity and the General Electricity Law both allow for private sector participation in electricity generation, transmission, and distribution through concessions. In the General Electricity Law, article 19 states that concession contracts cannot exceed 50 years, but article 20 allows for cancellation of the concession contract if it is in the “public interest” to do so. Unfortunately, Article 20 offers the potential for the nationalization of assets at any time and could be a serious deterrent to investors.

The restriction in the Law of Delimitation of the Sectors of Economic Activity potentially acts as a barrier to private investment in small, isolated electricity systems. This implies that all schemes, whatever size, need to be approved by the Council of Ministers. This will clearly be a deterrent to small developers. A simpler licensing (or concession) scheme, operated through IRSE—the electricity regulator—would be much more attractive to small private developers.

The Alrosa IPP concession illustrates some of the problems with the current concession arrangements. ENE has taken a 45 percent share in the development company Hydroshokapa and will be entitled to 45 percent of the profit; but ENE will make no investment in the project or make any other substantive contribution. ENE's 45 percent shareholding was a condition imposed on the developers to allow the concession to go ahead. It is, effectively, a tax on the owners of the diamond mine and is collected through ENE. In this example, the diamond mining company will gain from the scheme through lower net electricity costs, but if similar conditions are imposed on other independent developers, it will be a deterrent to private sector participation and to economic development. It would be better to have a clear, simple, and transparent framework for awarding concessions (or licenses) that IRSE administers, with fair terms for network access.

*Regulator*

The General Electricity Law and Decree 4/02 have created a regulatory body, though it is not yet functioning. However, even when it is functioning, it will

not be responsible for pricing and should not be responsible for awarding concessions. An independent regulatory body with responsibility for pricing is important in providing reassurance to the private sector that prices will be allowed to cover reasonable costs and earn a reasonable rate of return. The absence of a legal framework for an independent regulator with authority to set prices will deter private investors.

#### *Institutional Arrangements for Rural Electrification*

The small size of private rural electricity operators and their dispersion over a wide area will make them difficult to regulate, difficult to support, and difficult to subsidize. Institutional arrangements that provide information and support to potential and prospective private rural operators would help speed up the electrification process. The Institute for Rural Electrification currently exists in Angola and it could serve the function of promoting and providing support to privately operated isolated grids. The support service could be provided by a private operator, similar to an Energy Service Company (or ESCO) in the demand-side management culture. For example, the institution could assist the private developers to put forward applications for investment subsidies.

#### *Prices and Subsidies*

As with many other developing and transition economies, one of Angola's major barriers to private sector participation in the electricity sector is the low level of prices. Electricity prices being charged to end consumers in Luanda do not even cover the purchase cost of that energy. The government is attempting to raise electricity tariffs but price rises have generally not kept up with inflation. There is no provision for automatic indexation of the tariffs.

Uniform tariffs are another obstacle to attracting private participation. Those consumers connected to the ENE grid in isolated areas pay prices that are a fraction of the production cost in those areas, while those without an ENE connection must pay very high prices for electricity produced from small diesel generating sets. A policy of nonuniform tariffs would allow private developers (and ENE) to operate supply systems in rural areas with much reduced or no dependence on the state for operating subsidies.

A lack of adequate prices implies operating subsidies to both EDEL and ENE. A major risk associated with subsidies is that they may be withdrawn if the government budget is constrained. IPPs selling electricity to ENE or EDEL under a BOT, BOO, or similar arrangement are therefore more likely to demand extensive government guarantees.

Subsidized electricity prices also have two side effects:

- Subsidies create a culture in which consumers regard low prices as a right. Private developers that establish isolated electricity networks then find it harder to convince their consumers to pay the full supply cost.
- Even if ENE is not subsidized overall, cross-subsidies can create large distortions between prices in neighboring areas. If ENE applies a uniform tariff across all networks, then prices to end users in rural areas in small isolated grids will be heavily subsidized. Users buying from ENE will pay one price while users buying from a private supplier close by may pay a price several times higher than the ENE price. This may make it harder for the private developer to attract customers or to collect revenues from the customers who do connect to his network.

There is clearly a conflict between the desire to provide electricity to consumers at low (affordable) prices and expanding electricity access to a wider proportion of the population.

The above suggests that in order to maximize access to electricity:

- Tariffs should be nonuniform and, to some extent, should reflect differences in supply cost to rural areas and isolated grids;
- Where subsidies are desired, they should be available to private developers as well as ENE and EDEL.

In 1996, DNE undertook a pilot project to subsidize diesel generators supplied to local entrepreneurs with the intention of developing private distribution networks supplying local communities. We believe that the project was unsuccessful and abandoned after a short time because of the escalating conflict and, because of this, the expected demand did not happen. However, this failure in the particular

circumstances does not mean that it should not be tried again.

### Local Authorities

The strategy mentions the role foreseen in the 1996 Electricity Law for local authorities in the provision of electricity supply: “it is the competence of the local authorities to ensure the public service of electric energy supply, in their jurisdiction areas.” The local authorities did not necessarily have to provide the service themselves, though, in practice, many local authorities have introduced municipal-owned schemes.

The role of local authorities is not developed strongly in the strategy, but it remains a theme. The 2002 Law of Delimitation of the Sectors of Economic Activity gave authority to the Council of Ministers to issue concessions for all electricity schemes; this effectively took away the automatic right of local authorities to license private operators at the municipal level.

The lack of clarity over the responsibility of local authorities to ensure electricity supply services and the role of the Council of Ministers to issue concessions could be a barrier to increased electricity access. It is also possible that local authorities will be competitors to private operators in the electricity supply. It is desirable to introduce a flexible framework that allows local authorities to build and operate electricity supply schemes on a commercial basis if they wish. But to ensure that inefficient local authority “monopolies” are not created that deter efficient private operators, we suggest that these schemes be licensed by an independent regulator and lightly regulated in association with local authorities and the Institute for Rural Electrification mentioned above.

### Summary of Barriers

Table 4.8 summarizes the constraints to private sector participation.

Constraint area	Comments
Legal and regulatory framework	A simple system of licensing or concessions should be introduced for small-scale electricity schemes. The procedures for issuing licenses (or concessions) should be standardized and made transparent. Conditions should not be imposed on developers requiring that ENE hold shares, though developers may voluntarily wish to seek a joint venture with ENE. The regulator should be independent of policymakers and should be responsible for setting tariffs and issuing licenses.
Tariffs and revenues	Tariffs should be nonuniform and, to some extent, should reflect differences in supply costs to rural areas and isolated grids (this is recognized in the strategy). Subsidies should be phased out, but while they exist they should be available to private developers as well as ENE and EDEL. Subsidies should be limited to capital subsidies (not operating subsidies). To benefit rural areas, the subsidies could be targeted at rural networks. For example, subsidies could be targeted on the basis of the number of connections made (output based) in rural areas.
Financial standing	ENE and EDEL need to reduce losses and improve revenue collection. Tariff revenues plus subsidies should be raised to a level that is sufficient to attract financing for new investments. A regulatory framework should exist that ensures that total revenue is adequate.
Rural electrification masterplan	To allow investors to identify opportunities for supplying electricity in isolated grids or rural areas, investors need information about ENE's plans to extend its network to rural areas or to reestablish transmission connections to cities or large towns. ENE should therefore prepare, publish, and regularly update an electrification plan and a transmission plan.
Institute for Rural Electrification	The small size of private rural electricity operators and their dispersion over a wide area will make them difficult to regulate, support, and subsidize. Institutional arrangements that provide information and support to potential and prospective private rural operators would help speed up the electrification process. The role of the Institute for Rural Electrification should be enhanced to encourage private sector participation in rural electrification.

As the strategy recognizes, private sector participation is already happening in the informal electricity sector, but it happens outside the law and is unregulated. Despite the constraints and barriers, further opportunities for PPI exist in the short and medium term in five main activities:

1. Increasing access to electricity supply through the electrification of rural areas;
2. The operation and development of grids that have been isolated from the main network as a result of the civil war;
3. Rehabilitating and operating power plants that sell to ENE under power purchase agreements;
4. Building and operating power plants that sell to ENE or EDEL or to large consumers under power purchase agreements; and
5. Providing services under contract to ENE and EDEL.

The proposed steps to exploit these opportunities are described in the recommendations (see section 8).

### Introduction to the Gas Sector

Angola is a significant oil producer<sup>42</sup> and exporter, but has yet to start exploiting its offshore gas reserves. The development of gas will be dependent on the continuing exploitation of oil. Oil production to date has reached 800,000 bbl/day and is expected to go on, increasing to around 2 million bbl/day at an investment cost expected to be up to US\$ 50 billion. By comparison, this is nearly half the daily production of Norway. Angola exports nearly half its crude to the USA and is dependent on its oil revenues to over 40 percent of its annual GDP and nearly 90 percent of its export earnings. During the years of conflict, it is widely thought that much of the military expenditure was financed through signature bonuses and forward sales of crude and oil-backed loans.

Angola has significant gas reserves in two oil-producing areas: Soyo (which is over 300 km north of Luanda) and Cabinda.<sup>43</sup> About two-thirds of the oil (and gas) reserves are in the offshore Cabinda region and one-third is off the coast near Soyo. Gas is produced in association with oil. Although gas is not supposed to be flared, in the absence of markets for the gas, Angola currently flares over 70–80 percent of its gas,<sup>44</sup> which is estimated to account for 30 percent of

gas flared in Africa. The only significant domestic use of gas is currently for LPG production.

Offshore gas is expensive to develop and requires large “anchor” demands to secure new project financing. Such demands are only likely to come from the power sector or from export projects, although the oil companies have also been investigating the industrial market. However, power sector demand would be insufficient within the next decade to support a gas project on its own. This is the reason why Sonangol and the other producers have been examining the viability of a gas (LNG) export project for a number of years.

The development of natural gas for export is potentially hugely significant for Angola. The global benefit of the LNG project is expected to be a reduction in gas flaring, while the local benefits would be:

- Enhanced oil recovery, with associated revenue for the government and Sonangol;
- Sonangol’s dividends on its equity stake in LNG (offset by remuneration to the international partners for any carry of Sonangol’s interest, which may be considerable if Sonangol requires 20 percent equity), and its revenue from sale of feedstock gas to the plant;
- Tax revenue to the government from LNG (offset by any tax incentives granted to make the project economic);
- Some development of the domestic gas market, particularly through LPG provision; and
- Local sourcing of goods and services for the construction and operation of the plant.

There may also be some positive demonstration effect from LNG being perhaps the first major postwar onshore investment.

However, as regards the CFR, interest in gas is limited to the scope for development of infrastructure for a domestic gas market on the back of the expected LNG export project.<sup>45</sup> Our analysis of the sector will therefore focus on the domestic opportunities created by the spin-off from a large export project.

### Gas Sector Structure

The gas sector as such does not yet really exist but will be created as an offshoot of the oil industry. The main operators in Angola’s offshore oil industry, in addition



to the state-owned company Sonangol, which is the monopoly concessioner, are ChevronTexaco, BP, ExxonMobil, Norsk Hydro, and TotalFinaElf. These producers would be partners with Sonangol in the LNG project.

Gas would be gathered from a number of associated and nonassociated fields in several of the license blocks and brought to shore near Soyo, where a terminal and LNG liquefaction plant would be constructed for LNG export. Private oil and gas producers operating under contracts from Sonangol would conduct the activity.

The earlier concept was for an LNG terminal and liquefaction plant near Luanda. This would have facilitated the development of a domestic gas market, since gas for domestic use would have been taken by short pipeline from the terminal and delivered to major customers such as the power plants and large industrial consumers. Any private or state enterprise may undertake this activity. However, the added distance from Soyo now puts such short-term development of the domestic gas market into doubt.

## Legal and Regulatory Issues

The commercial terms for oil production are set in production sharing agreements (PSAs), which allow the producers to recover their costs and then share the net revenues between the producers and the GOA. Gas is excluded from the revenue sharing arrangements in most of these PSAs and is owned by Sonangol or the state.<sup>46</sup> Sonangol effectively receives the gas free from any upstream tax or royalty payments to the GOA. The Ministry of Petroleum regulates the upstream oil and gas industry.

Sociedade Nacional de Combustiveis de Angola (Sonangol) was established in 1976. The Hydrocarbon Law passed in 1978 made Sonangol the sole concessionaire for exploration and production. Some earlier developments were carried out under joint ventures with foreign companies, but most are now carried out with PSAs in which the foreign company acts as a contractor to Sonangol.

The LNG project has been approved by a resolution of the Angolan Council of Ministers on 21 October 2001. This resolution authorizes Sonangol to continue discussions with the foreign partners and sets up a joint ministerial commission including the ministries

of petroleum, finance, industry, agriculture and rural development, fisheries and environment, and public works.

Sonangol and ChevronTexaco are the joint project leaders under the terms of a Participation Agreement executed in February 2002 by all the partners. This agreement gives ChevronTexaco the role of primary services provider.

The activity of gas distribution (through pipelines) is not specifically mentioned in Law 5/02 on the Delimitation of Sectors of Economic Activity (or the earlier Law 13/94) although article 13 (Relative Reserve) sub-para 3 states that the exploitation of natural resources, which are the property of the state under the terms of the constitution, can only be undertaken through concessions. Offshore gas is under the concession regime while onshore pipelines are to be developed under a licensing regime involving the ministries of industry and petroleum and the local authorities. The Ministry of Industry will have overall responsibility for the development of gas distribution.

## Current Situation in the Gas Sector

### *Gas Production and the LNG Project*

It was estimated in 1998 that Angola had 1.6 tcf of proven natural gas reserves. A 2001 independent consultant study raised this estimate to 4 tcf of proven gas. Even this estimate is likely to be conservative, with some experts forecasting reserves increasing to between 10 and 20 tcf. Current estimates of probable resources south of the Congo River are 8.8 tcf. The lack of gas pipeline infrastructure, underdeveloped domestic markets, and lack of financial resources to develop a gas export project have hindered Angola's exploitation of its gas resources up to now.

The LNG project has been proposed as both a response to environmental pressures to stop flaring gas and a business opportunity to exploit the gas in the rapidly expanding international LNG market. The project is designed to produce 4 Mt p.a. starting in 2006/7. If there were 8.8 tcf of gas, it would be enough to support this level of LNG production for about 40 years.<sup>47</sup> The inclusion of gas from north of the Congo River would significantly increase this period or allow expansion of the export volume.

Angola currently flares over 70 percent of its associated gas (some 20 percent is reinjected, and the rest is for its own use).<sup>48</sup> The benefits of the LNG project are expected to be a reduction in gas flaring and consequent environmental benefits, profits from the export of LNG, as well as the small additional benefit that might come from the establishment of a domestic gas market.

The LNG plant will be sited at Soyo and initially take gas from the producing blocks south of the Congo River. The blocks near Cabinda province and north of the Congo river will face two problems: the distance and the difficulty of crossing the Congo Canyon, as either a deepwater route or a drilled route. This is not considered feasible for the initial development stage of LNG. As there is insufficient demand in Cabinda to support a separate project, the gas from these blocks will not be involved in the first stage of the project. Gas will initially be gathered from the non-associated gas field near Soyo, and the associated gas production from blocks 2, 15, 17, and 18. The gas is high quality and rich in liquids.<sup>49</sup>

A consortium of multinational oil companies have already agreed to develop an LNG project. The project's estimated cost is in the range of US\$ 3.5 to 5 billion.

The participating interests in the LNG project are:

ChevronTexaco	32 percent
Sonangol	20 percent
BP	12 percent
ExxonMobil	12 percent
Norsk Hydro	12 percent
TotalFinaElf	12 percent

Under the terms of the PSAs, the operators are allowed to use the gas for their own operations, but surplus gas belongs to Sonangol (the state). However, the surplus gas from associated oil production will not, alone, be enough for the LNG project, and the operators will be required to invest substantial long-term amounts to increase gas production (as well as for the gas gathering system). Therefore a long-term gas sales agreement (for the LNG) is required to undertake the financing for this major investment.

The economics of LNG projects depends on the state of the international oil and gas markets. The international LNG market is currently highly competitive, with a number of new LNG projects coming on stream. Angolan LNG has low gas costs as the production costs

are reasonable and the offshore pipeline distances are not excessive. However, new "greenfield" LNG liquefaction projects are expensive and have to compete with existing LNG projects and expansion projects (where the capacity of an existing project is increased, with generally lower incremental costs than a new project).

Therefore, the economics of the LNG project are thought to be marginal. The project requires the revenues from the natural gas liquids (NGLs) to achieve an acceptable return and a supportive fiscal regime. The project sponsors are therefore requesting the GOA to provide fiscal and other incentives. In particular, the project is requesting the Ministry of Finance to grant a tax holiday for 10 years on the assumption of a 35 percent corporate tax rate. Such a request was possible under the Law on Foreign Investment and it is still possible under the new Private Investment Law and Law on Tax and Customs Incentives for Private Investment, although for an eight-year period. The GOA has not yet decided whether to grant a tax holiday and, if so, for how long.

#### *Gas Demand and Gas Markets*

In the Angolan domestic market, gas could potentially be utilized for power generation, large industrial consumers, or distribution to small consumers. The last option is not really under consideration, but some demand will exist for power and industrial use. However, as will be seen below, the total domestic demand for gas is unlikely to be more than a small percentage of the gas for export (as LNG). During the next decade, demand from power and industrial consumers together is likely to be little more than 0.5 bcm p.a., which is less than 10 percent of the gas required for the LNG project.

**Power Demand** Many developing countries with access to gas are taking advantage of the efficiency gains in gas-fired combined-cycle plants to introduce gas or expand the share of gas in power generation. However, small gas pipelines are costly and power stations need to be sited reasonably close to the gas field or shore terminal to make a project economic. This means that initial development of domestic gas markets in Angola is likely to be based in or around Luanda.

The major limitation for domestic gas development in Angola is the limited scope for gas in power generation in the medium. Luanda is in the Northern system,



one of three separate electricity networks in Angola. Total capacity in the Northern system is about 350 MW,<sup>50</sup> of which only half (177 MW) is thermal capacity. New hydro capacity of 260 MW at Capanda hydro plant is due to become available in 2003 with scope to double the capacity to 520 MW after 2005. Compared to current capacity (and therefore current demand for electricity in the Northern system), this is a substantial increase. The immediate prospects for gas in power generation are therefore limited to use as a substitute for oil-fired generation (currently jet fuel is used) in Luanda's thermal power capacity.

Luanda's thermal plant comprises two jet B fuel fired gas turbines (GTs) on a site approximately 7 km from the refinery. A 7 km pipeline is planned to be installed soon as a multi-fuel line; it will initially carry jet fuel but could be switched to carrying gas when/if gas becomes available.<sup>51</sup> The two GTs have a capacity of about 130 MW and, if converted to gas and used for baseload generation,<sup>52</sup> would only use about 0.25 bcm/yr of gas, compared to about 6 bcm of feed gas required for the LNG project, i.e., power generation would add only about 4 percent of incremental demand to the project at the start. The conversion to gas of these GTs would have been feasible if the LNG plant had been sited in Luanda, but if sited over 500 km away in Soyo, it is not feasible to build such a long pipeline for such a small demand.

The future demand forecasts (see table 4.2) show that no more major capacity additions are required (after completion of Capanda) in the Northern system up to the year 2016. Therefore, the scope for additional gas-fired generation would be dependent on interconnection of the Northern system with other systems or with more rapid growth in demand.

**Industrial Demand** Industrial demand for gas could potentially come from large industrial users or a petrochemical industry. As the industrial sector recovers from the decline due to the civil war, Angola's main heavy industries would be potential gas consumers by switching from their current fuels (mainly petroleum products). The critical factor for determining the economics of switching to gas (essentially, this is the economics of a gas pipeline) is the length of pipeline required compared to the volume of gas consumption.

Industrial consumers that could theoretically switch to gas and absorb enough gas to justify investments in pipelines are in industries such as glass production (now using LPG), iron and steel, and metallurgy (now using oil). There is also a study going on for an aluminum plant. There are some smaller potential customers such as water supply and drinks producers and bottling plants. Other potential consumers are the cement factory and the Luanda refinery, both located near the Kwanza field. Sonangol is currently carrying out a masterplan for the development of gas including a gas market study. No firm industrial demand forecasts are available, but the total industrial demand is thought to be less than 0.3 bcm/yr in the foreseeable future.

An ammonia/urea plant using gas as the feedstock has been proposed for the Soyo area and has been under study since the 1980s. An economic scale of plant (e.g., 1,500 t/d of ammonia) is far in excess of Angolan domestic requirements and would therefore only be justified on export grounds. It would use less than 0.5 bcm of gas per year. The worldwide urea/ammonia industry is highly competitive, and it is likely to be less economical to construct this type of plant than to use the gas for LNG.

The market potential for gas in the industrial sector is not therefore particularly promising in the short term and could only be developed if the LNG project goes ahead.

Developing LPG is also a policy being undertaken by GOA to reduce the amount of energy wasted in gas flaring, as stripping and marketing LPG (and condensate) from the gas stream will significantly improve the economics of any gas recovery scheme, whether gas is marketed for power generation or industrial use, or is reinjected. Cabinda currently produces 2 million bbl/yr of condensate and LPG.

### Future PPI Opportunities

The offshore gas production and gas gathering components of the LNG project, together with the LNG plant and terminal, are not considered within the scope of this study.

The main opportunities for infrastructure development are the onshore pipelines. There is a definite plan

to construct the 7 km pipeline from the refinery to the Luanda power plants. No plans yet exist to construct pipelines to other larger industrial customers, but since the earliest time for gas is likely to be 2006,<sup>53</sup> it is probably premature for industrial customers to consider the issue.

The oil pipeline to the Luanda power plants is expected to start construction soon. It will be a joint venture project between Sonangol and ENE. However, the gas at Soyo is too far away for connection to such a small demand.

This type of joint venture approach is likely to be taken for pipelines to industrial customers—they could be jointly owned by the consumer and the marketer.

Despite being the owner of the offshore gas, Sonangol does not necessarily expect to be the sole company carrying out local distribution. Gas distribution is not a reserved activity (see legal and regulatory issues, above), and any other company could be involved. Given the risks of pipeline development and the need to secure long-term sales contracts for the financing of pipelines, it seems likely that the major gas consumers will enter into the pipeline construction joint venture. They could then use additional pipeline capacity to on-sell gas to other (smaller) consumers.

Gas distribution would be developed under a licensing regime. Considering the lack of specific legislation concerning gas distribution, the cooperation of the local authorities will be required to secure the necessary land use access and rights of way.

The major barriers to gas distribution pipeline development are likely to be the limitations of the market, economic viability of projects, the monopoly position of Sonangol, the subsidized prices for petroleum products, and the weakness of contract enforceability (discussed in the judicial process and dispute resolution section); one important step Angola could take to improve enforceability of contracts would be to sign on to the New York Convention. As Sonangol is the monopoly offshore gas owner, competing gas suppliers are likely to face barriers unless anti-monopoly practices are controlled. The GOA Oil fixes product prices at very low prices (subsidized),<sup>54</sup> despite the fact that both refinery and distribution costs are high, and GOA pays a price subsidy to Sonangol.

## Conclusions on Gas

The domestic exploitation of gas has not yet started and depends on the development of the offshore gas industry, which is itself an offshoot of the vitally important oil industry. Gas development could proceed on the back of a proposed 4 million metric tons/yr LNG export project, which is planned for 2006 and would require about 6 bcm of feed gas per year. However, the siting of this project at Soyo, near to the gas field<sup>55</sup> but over 300 km from the main demand centers at Luanda, is likely to delay the domestic market exploitation of gas significantly. Under the terms of the PSAs Sonangol mostly owns the gas. Gas reserves are not a constraint, since Angolan gas discoveries (mostly in association with oil) would support the LNG project for at least 40 years. Domestic use of gas in the short to medium term is likely to be limited to areas reasonably close to the expected landing point of offshore gas and the LNG terminal at Soyo. Domestic gas demand is likely to add not more than 10 percent to the gas requirement for the LNG project in the medium term.

The main uses of gas would be for power generation (possible demand 0.25 bcm/yr) and large industrial consumers (possible demand 0.3 bcm/yr). A petrochemical industry is not thought to be viable for now.

The scope of the gas industry as regards this CFR study is limited to the onshore pipeline infrastructure that would be required for gas sales to domestic consumers. With the siting of the LNG project at Soyo, there are unlikely to be short-term opportunities for gas pipelines to gas fired power stations. As yet, there are no definite plans for pipelines to serve industrial consumers. Such pipelines are likely to be developed as joint ventures between the gas suppliers and consumers to mitigate the risks of long-term financing of pipelines.

Gas distribution will be developed under a licensing regime involving the Ministries of Industry and Petroleum as well as local authorities. Sonangol is not necessarily intending to be the sole gas distributor, but any competing supplier would face difficult competition against Sonangol (which also distributes all oil products), unless regulation of oil product and gas prices is designed to facilitate gas competition. Gas marketing would also benefit from the end of subsidies to competing petroleum product prices.

## Notes

1. Angola's per capita consumption is 83.8 kWh, compared with an average of 760 kWh per capita for the SADC region in 1999.
2. *Estratégia de Desenvolvimento do Sector Eléctrico de Angola* announced in *Diário da República I Série* 78 – 01.10.2002.
3. Established by Decree 33/99 as a public enterprise. It operates in accordance with Decree 45/01, which regulates electrical energy distribution.
4. Following Decree 43/01 in 2001, ENE and EDEL were issued with temporary concessions that expire in 2003.
5. Decree 4/02.
6. The Law of Delimitation of the Sectors of Economic Activity (Law 13/94, revised as Law 5/02).
7. The General Electricity Law (Law 14-A/96).
8. Decree 43/01 extinguishes or adapts the licenses for electricity production, transmission, and distribution.
9. Article 1.
10. The Regulation of the Production of Electrical Energy (Decree 47/01).
11. Article 81.
12. The Establishment of the Regulator for the Electricity Sector (Decree 4/02).
13. As of March 2002.
14. It is not clear who approves non-uniform tariffs.
15. Following the enactment of the Law of Delimitations of Sectors of Economic Activity in 2002, the provincial governments will not issue licenses.
16. *Estratégia de Desenvolvimento do Sector Eléctrico de Angola*.
17. In 1999, the EIU estimates GDP per head in Angola to be US\$ 344, and in Zimbabwe to be US\$ 479.
18. This is not necessarily demand but nevertheless provides an indication of expected growth in demand.
19. Data obtained from meetings with EDEL management, October 2002.
20. From *Sistema Eléctrico da ENE, Reabilitação, Carteira de Investimentos*; the nominal capacity in the northern region is 375 MW.
21. Nominal capacity is 112 MW and 66 MW in the central and southern regions, respectively.
22. *Sistema Eléctrico da ENE, Reabilitação, Carteira de Investimentos*, April 2002.
23. This is in generation, transmission, and distribution.
24. In year 2000 terms.
25. As noted in the regulatory body and price setting section, above, nonuniform tariffs may be approved under some circumstances.
26. Long-run marginal cost is said to be US\$ 0.11/kWh, although the authors were unable to identify the basis for the calculation of this estimate.
27. Issued on September 27, 2002.
28. It was reported that until recently EDEL paid 33 percent of the revenue it collected to ENE, and also pays 30 percent of the subsidy it receives to ENE.
29. Alrosa is a Russian diamond mining company that produces 20 percent of the world's diamonds.
30. *Estratégia de Desenvolvimento do Sector Eléctrico de Angola*, paragraph 164.
31. Paragraph 110.
32. Profabril, Community Management of Solid Wastes in the Suburbs of Luanda.
33. *Estratégia de Desenvolvimento do Sector Eléctrico de Angola*, paragraph 130.
34. Paragraph 93.
35. The strategy also qualifies the welcome given to private investors. It suggests that this should be promoted "when it can be done with the due safeguard of the public interest and national interests" (paragraph 100.v).
36. Paragraph 107.
37. Paragraph 83.
38. Paragraph 120.
39. Huambo is provided as an example solely because the consulting team visited Huambo and not because it is necessarily the best electricity system for launching a private power project.
40. The province itself is estimated to have a population of approximately 1 million, but Huambo city suffered rapid population movements as a result of the civil war, and the current population is not known with any certainty.
41. In addition, a small hydropower plant, with its oldest units built in 1929 and located 4 km outside the city, supplies the water treatment plant, but is inadequate to meet the demand of the treatment plant in full. The water treatment plant is separate from the city grid.
42. Angola's oil production reached about one million barrels per day at the end of 2003, making it the second most significant producer in Sub-Saharan Africa after Nigeria and the largest non-OPEC exporter outside the western hemisphere.
43. Oil production in Angola started in 1955 with the discovery of the onshore Kwanza field, which also contains a small quantity of gas.
44. The rest is reinjected back into the oil wells, which can have the benefit of maintaining the well pressure and enhancing oil production. The gas could potentially be produced in the future. The gas from Block 17 near Luanda is reinjected, whereas almost all the gas in Cabinda (blocks 0, 2, 3) is flared.
45. The offshore gas production and pipeline infrastructure is considered out of the scope of this study, although it will almost certainly be financed by the private sector if the project goes ahead. Started in 2002, LPG production and marketing are also outside the scope of the CFR.
46. Gas produced from associated fields is covered by the production sharing contracts, although these allow the parties to negotiate freely with Sonangol for the exploitation of the gas. If the parties are not interested, Sonangol, which has ownership of the gas, decides how to proceed. Nonassociated gas is to be developed through negotiations and contracts with Sonangol.
47. One million tons of LNG requires about 1.4 bcm of gas. One tcf of gas is equivalent to 28 bcm.
48. Estimates of the quantity of gas being flared vary. Sonangol is not supposed to flare gas and is taking steps to reduce the quantity, including the proposed LNG project.
49. In addition to LNG production, LPG and NGLs will be produced.
50. This is about 75 percent of the total capacity in Angola.
51. A fuel pipeline is needed since there is inadequate fuel storage on the power station site and severe logistical problems in carrying enough jet fuel to the power stations by road tanker, especially during the period when the GTs have been working near full capacity due to the shortage of hydro generation, while the reservoir for the new Capanda hydro generators is being filled.

52. GTs on their own are not very efficient and not really suited for baseload operation. They could be converted to combined cycle (CCGT) operation by adding a heat recovery steam turbine. This would significantly improve the overall efficiency (thereby making the plant suitable for baseload operation), but would hardly increase the gas consumption.

53. Sonangol is now expecting the commissioning of the LNG project to be the end of 2007.

54. Jet fuel is sold at market prices; all other product prices are controlled below market prices.

55. The location of the plant near Soyo has the benefit that resettlement impacts are

considerably reduced. However, the local population would expect some benefits from the project, such as access to a power supply from on-site generation at the LNG plant.

# 5

## Water and Sanitation

### Introduction

The coverage of the water and sanitation sector in the CFR is oriented to those aspects of water and related services that have already attracted or may in the near future attract private sector participation. In the main, this involves urban water supply and sanitation (including conventional sewerage systems and basic sanitation facilities) in the urban areas. The map in appendix 8 shows the major water consuming centers by population.

The scope also covers the collection and disposal of solid waste in Luanda. In addition, short sections have been included on the current situation and potential opportunities in rural areas.

At the national level, the water sector is undergoing a major reform process. A new Water Law recently came into effect (June 2002). It is focused more on integrated water resource management than on water supply *per se*. Many of the provisions, which will be important for private sector participation in the water sector, remain to be specified in secondary legislation (regulations). According to the law, the regulations were to be promulgated within 120 days of the law being passed (i.e., by the end of September 2002), but drafting only commenced during 2004. It will thus be some time before the significance of the law from the viewpoint of private sector participation can be fully assessed.

The National Directorate of Water (DNA) and the Ministry of Energy and Water (MINEA) have prepared a comprehensive Water and Sanitation Sector Development Strategy<sup>1</sup> covering both national water resource management and the provision of potable

water and sanitation to the people of Angola. The strategy is forthright in identifying and analyzing current deficiencies and bold in formulating an ambitious 14-year program requiring approximately US\$ 3 billion of investment. The policies and institutions required to implement the strategy are identified, including welcoming private sector involvement (albeit in rather general terms). One of the main constraints highlighted is the shortage of adequately trained staff at all levels. Human resource development is thus a crucial building block in the implementation proposals.

### Legal and Regulatory Framework for the Water Sector

In the Constitution of Angola, it is stipulated that water is the property of the state. The Law of Delimitation of the Sectors of Economic Activity<sup>2</sup> specifies in Article 13 that the “collection, treatment and distribution of drinking water through fixed networks” and the provision of “basic sanitation” are areas of “relative reserve.” This means that companies or other forms of private entities can participate in these sectors through fixed term concession contracts but not outright ownership.

The new Water Law<sup>3</sup> enables a private sector entity to be granted a water right and then to apply for a license or a concession to use water. A license is to be granted for a renewable period of 15 years, whereas a concession is more significant in several respects, including being granted for up to 50 years. *Inter alia*, the new Water Law specifies the duties and rights of licenses and concessions, and the circumstances in

which they can be terminated. One of the main duties is to pay the taxes, which are to be levied in terms of the law to cover the costs of water resource management. Operators are also required to pay tariffs for the use of any upstream infrastructure.

Neither the Water Law nor the Water and Sanitation Sector Strategy envisages an independent regulatory body being created for the service provision aspect of the water sector. Key aspects of both water resource and supply regulation are to be decentralized, reducing the highly centralized situation that has prevailed hitherto. In the crucial area of prices, an Executive Decree from the Ministry of Finance had in 1998 already delegated the responsibility for setting potable water tariffs to the provincial governors. The decree<sup>4</sup> lays out the basis for tariffs as being full recovery of the costs of storage, extraction, treatment, and distribution of potable water. The decree notes “people are prepared to pay a just price for water provided the supply is reliable and attains at least minimal standards.” To bridge the gap between the required level of tariffs and the actual level, the decree makes provision for six monthly real increases (provided these do not exceed 15 percent on each occasion), coupled with three monthly inflation adjustments (the formula for this allows full indexation relative to the national price index). The decree also makes provision for a “Social Tariff” to be set by the MINEA with a view to protecting the poor and other vulnerable groups.

### Water Sector Structure

The DNA is the lead institution in the water sector, and it falls under the MINEA. Under the water sector reform proposals, hydrological information gathering is to be improved by the formation of a Water Resources Institute, with financing being provided by a National Fund that is provided for in the Water Law. For the management of water resources, a National Water Council is to be formed that will be an umbrella body for a decentralized structure of catchment councils.

The exact structure, responsibilities, and functions of the catchment councils are to be specified in detail in the pending regulations, but the Water Law does give the catchment councils the important role of issuing licenses to private water users. Where a catchment council does not exist, the power to issue licenses is granted

to local authorities or else to the DNA. By contrast, concessions for water use are to be decided at the highest level in the state structure (the Council of Ministers). Water rights, which have to be obtained before applying for either a license or a concession, are to be granted by the DNA.<sup>5</sup>

In the urban areas of Angola, the respective provincial government is responsible for the supply of potable water together with the treatment and/or disposal of wastewater. The strategy document enunciates a policy of forming public enterprises in the major urban centers to assume responsibility for potable water and wastewater, with the role of provincial directorates in the future being limited to policy issues and supervision of the enterprises. In addition to Luanda (discussed in detail below), there are a few smaller urban centers that already have enterprises responsible for water supply or where a degree of incorporation of the water supply entities has taken place. These include the provincial water companies created in Benguela and Lobito under the PRUALB project<sup>6</sup> that the World Bank supported, and two cases (Soyo and Caxito) where private Angolan-owned companies were given management contracts to operate the water systems, with the assets remaining the property of the state. The World Bank’s Implementation Completion Report on the PRUALB investment (June 2001) concluded that project implementation was generally satisfactory despite the ongoing civil war in the late 1990s; but further progress would be required in the key areas of human resource development, institutional capacity building, realistic tariffs, and effective financial management if the municipal enterprises were to be viable and sustainable into the future. In the case of Caxito, the contract required capacity building to be carried out and, at the end of the contract, the management of the water system reverted to the provincial government. The DNA has a study in progress that is to provide recommendations on the formation of commercialized water utilities in all major urban centers.

As noted in the previous section, an Executive Decree issued in 1998 gave power to the provincial governments to set water tariffs. The decree envisaged tariffs being raised in real terms to meet costs, with different tariffs applying across the country reflecting variations in the costs of supplying potable water. In fact, tariffs remain remarkably uniform across the



country at levels that the strategy document describes as “derisory” (*irrisório*). It would seem that in practice, the Ministry of Finance (with advice from the MINEA) continues to establish the tariffs for Luanda and the Provincial Government of Luanda’s role is reduced to promulgating the new tariff schedules. Other provincial governments then generally adjust tariffs to the new Luanda levels.

The largest and most important water supply company in Angola is Empresa Pública de Águas de Luanda (EPAL), which is responsible for treating and distributing water in Luanda but is not responsible for the sewerage system (which conveys both sewage and stormwater). EPAL was originally formed as a state entity, but its status was changed (by means of Presidential Decree no. 36/01) to that of a public enterprise in October 2001. The change was the first step in the government’s declared objective to improve and extend service delivery in Luanda. In March 2003, it was reported that senior managers would sign a performance contract that gives increased management autonomy to control and develop the enterprise. Furthermore, in April 2003, the government announced its intention to develop private sector participation in the management and operation of the city’s water supply system.

Nevertheless, at present, EPAL is not free to hire and fire staff, nor is it able to raise tariffs to match its costs. The enterprise is still subject to tariff increases decided by the Ministry of Finance, the last increase being in October 2001. In conditions of three-digit inflation, the mismatch between costs and revenues, which are only sporadically adjusted, tends to grow rapidly. With limited ability to borrow, EPAL’s survival depends on subsidies from the central government budget (OGE). In the last two years, receipts from government for both capital and recurrent purposes constituted between 30 percent and 60 percent of total EPAL receipts. The resources provided to EPAL from the OGE are in the form of general budget support rather than specific, targeted subsidies.

### Current Situation in the Urban Sector

#### *Water Supply and Sanitation in Luanda*

As a result mainly of inward migration, Luanda’s population is estimated to have grown very rapidly from 1.6 million in 1990 to about 3.6 million in 2002

(7 percent p.a.).<sup>7</sup> Approximately 800,000 people live in the “formal” part of the city while 2.8 million live in the so-called “peri-urban” poor areas, colloquially known as musseques. The infrastructure differences between the two parts of the city are stark. Poor housing and roads, and basic services (water, sanitation, and electricity) characterize the peri-urban areas.

In respect to potable water, EPAL has nominal treatment capacity of 93 million cubic meters p.a. (255,000 m<sup>3</sup> per day), which would theoretically allow (with zero losses) an average consumption of 72 liters per capita per day (including nondomestic uses). In practice, with actual treated water production of only around 60 million cubic meters (165,500 m<sup>3</sup> per day—due to technical problems, material shortages, and prolonged power cuts), and substantial losses in the transmission and distribution system, the amount attributed to customers by EPAL in 2001 was only 23.5 million cubic meters<sup>8</sup> (64,000 m<sup>3</sup> per day). Nonrevenue water may be as much as 60 percent of actual production, which is attributable to the age and condition of pipes and equipment, inadequate maintenance, and unofficial consumption (illegal and shared connections<sup>9</sup>).

In view of the almost complete absence of perennial surface water or of nonsaline groundwater in Luanda,<sup>10</sup> city areas that are not on EPAL’s reticulation system are supplied from tanks filled by trucks, some of which buy their supplies from EPAL while others draw unsafe water from rivers. Taking account of the additional bulk supply this represents, the total that is presently distributed may be around 30 million cubic meters p.a. (82,000 m<sup>3</sup> per day). This is equivalent to an average for domestic users of less than 20 liters per capita per day, this being a weighted average of around 34 liters per capita per day in the piped water areas (supplying approximately 1.3 million people) and only 10 liters per capita per day in the areas supplied via the truck-tank chain (approximately 2.3 million people).<sup>11</sup> The World Bank estimates that consumption via the truck-tank supply chain is only half this amount—5 liters per capita per day, equivalent to one-eighth of the minimum amount considered necessary by the World Health Organization (40 liters per capita per day).<sup>12</sup>

The large differentials in per capita consumption reflect grossly inequitable pricing and the limited ability of poor peri-urban households to purchase high-priced water. The price of piped water is heavily subsidized,



but truck-tank supplied water is subject to private sector markups that take advantage of monopoly conditions for a commodity with a uniquely inelastic demand at low levels of consumption. The markups are over 1,000 percent by the truck operators and between 50 percent and 200 percent by the tank owners. These are calculated from a starting price of US\$ 0.45/cubic meter (26 kwanza/cubic meter, exchange rate US\$ 1 = kwanza 55 in late 2002) when the trucks buy water from EPAL. Some truck owners obtain “free” water from the river, but incur other costs to do so. The water is sold to tank owners at prices typically around US\$ 3 to US\$ 6.00/cubic meter (165 to 330 kwanza/cubic meter), who in turn sell to retail customers, who collect water in 20-liter containers, at between US\$ 4.5 and US\$ 13.5 per cubic meter (250 to 750 kwanza/cubic meter, corresponding to 5 kwanza to 15 kwanza per 20-liter container).

This price structure for the truck-tank supply chain in Luanda compares with EPAL’s rising block domestic tariff structure in the piped water area, which ranges from US\$ 0.23 to US\$ 0.36 per cubic meter (12.5 to 20 kz/cubic meter). These figures imply that the price of truck-tank supplied water is roughly 20 to 60 times the piped water price. On a monthly basis, households in the peri-urban areas have to pay between 10 and 20 times as much for water as households in the piped water area, while at the same time consuming 70 percent less water per capita. Average incomes in the peri-urban areas are much lower than those in the central part of Luanda, and relative standards of living are further undermined by the hugely disproportionate cost of water for the poorer majority of the population.

The present highly differentiated market also implies that EPAL only has a small share of the market when measured in terms of turnover. The total revenue associated with the retail sale of water in Luanda is between US\$ 40 million and US\$ 160 million per year, the estimated range being so wide because of uncertainties about both the quantities and the prices paid in the truck-tank channel. What is certain is that most of the turnover is generated in the private domain, with EPAL currently only being able to appropriate between 5 percent and 20 percent of the revenue associated with retail water sales. The challenge is to ensure that EPAL becomes more efficient and expands its sphere of operation. In so doing, new customers will benefit from lower water prices and higher

consumption levels, while it can be confidently predicted that EPAL’s turnover will increase as even low-income households have already demonstrated very high levels of willingness to pay for water.

In many countries, the poor paying more than the rich for water is a common outcome of state-run utilities not being allowed to raise tariffs sufficiently to cover costs. This results in inadequate resources for operations and maintenance, let alone for investment to expand supply. The case of Luanda is an extreme example, and the state has responded by initiating a number of projects to expand supply and extend distribution. For example, the third phase of the US\$ 180 million Sistema III project to improve supplies to southeast Luanda is nearing completion. Households in the area that had been supplied by the truck-tank chain will have access to kiosks (chafarizes), where they will be able to buy piped water at a controlled price. The kiosks introduced by EPAL in project phases I & II have been well received by local communities (see box 5.1).

In 2001, according to DNA, there were 290 chafarizes in Luanda of which 142 (49 percent) were in regular operation and 148 (51 percent) only functioned intermittently due to inadequate pressure and lack of water. EPAL estimates that each chafarize serves approximately 70–80 households, implying that chafarizes can supply about 21,750 households or around 152,000 people. This represents less than 7 percent of the population who do not have access to piped water (2.3 million). Therefore, the majority of poor households are still dependent on the truck-tank supply chain. EPAL has limited capacity to increase the number of chafarizes, but by franchising the chafarize design, construction, and operation to the private sector (as suggested at the end of box 5.1), this constraint could more rapidly be overcome. There are other possible technologies, which could provide water at affordable prices, some of which are suitable for development by private sector operators. These are discussed later in this chapter (see opportunities for private sector participation).

The authorities acknowledge that the truck-tank supply chain will continue to play a key role in many parts of the city and have included additional loading points for the trucks in planned investment projects. This is intended to encourage more trucks to enter the industry, improve turnaround times for many operators, and reduce the risk of truckers loading unsafe river water. It is important that the benefits of reduced costs

### Box 5.1 Luanda's Chafarizes

Grossly inequitable access to water is a common phenomenon in African cities, which have experienced rapid rural-urban migration. Water kiosks—communal standpipes from which water is sold—are increasingly being seen as an appropriate way for water utilities to dramatically improve the access of poor peri-urban communities to clean water at an affordable price. Cities such as Ouagadougou, the capital of Burkina Faso, have shown that it is possible to ensure minimum services for all, yet achieve cost recovery and sustainability.<sup>13</sup> Prerequisites are a water utility with the autonomy to operate on commercial lines, careful design of the kiosk system for operational efficiency and ease of use by customers, and a tariff policy that requires connected households to pay a realistic price for the much higher service level they enjoy.

Kiosk systems are also becoming more widespread in southern African countries such as Malawi and Zambia.<sup>14</sup> The chafarize structure in Luanda is expensive. It consists of a long counter with six sets of taps on each side, with a roof to provide shade. There is a high security perimeter fence with a guardhouse at one end. Customers prepay for the water by buying cards from agents or the EPAL official at the chafarize. During opening hours (typically 6 am to 3 pm), family members collecting water line up and have their cards punched as they are admitted through the gate and allowed to fill their containers. This is a rather hectic process, with the taps being left open continuously, resulting in a considerable amount of water being wasted. A contrast can be drawn with kiosks in Lilongwe, for example, where the investment costs are lower and use of water is more efficient.

Although the presence of EPAL staff and security officers gives the water utility prominence in the chafarizes of Luanda, community involvement is nonetheless very much part of the concept. The cards that cost 24 kwanza (kz) (allowing 50 collections of 20 liters, i.e., 1 cubic meter) or 120 kz (100 collections of 50 liters, i.e., 5 cubic meters) reflect a price made up of two elements: the “social tariff” of 11 kz/cubic meter, which is paid over to EPAL, and a community contribution of 13 kz/cubic meter that is apparently being used for maintenance purposes. Although the utility is adamant that the chafarize tariff is no higher than the social tariff (as is required by Executive Decree 27/98), the effective price from the user's viewpoint (24 kz/cubic meter) is more than double the social tariff and at present is higher than the average domestic piped water tariff (around 18 kz/cubic meter).

Given the observations above about the inefficiencies of the EPAL chafarizes, if private operators were given the opportunity in Luanda to design and operate their own chafarize systems, it is highly probable that they would be able to establish profitable businesses providing water to the public at a price equal to or lower than the effective EPAL chafarize price of 24 kz/cubic meter. EPAL could initiate a franchising system by establishing acceptable service standards and prices at chafarizes and inviting bids from private sector operators willing to meet those standards.

are passed on to the final consumers in the poor peri-urban areas. Indeed, while acknowledging the dependence of a large segment of the population on the truck-tank supply chain, the exceptionally high prices that presently prevail call out for some form of regulation to be imposed. The regulations currently being drafted by the DNA are apparently targeted principally at the truck owners, but the tank segment of the chain needs also to be tackled (by regulation and/or increased competition) if the policy intentions for the final consumer are to be realized.<sup>15</sup>

The losses in EPAL's physical distribution system are mirrored in the financial realm by low billing levels (only 52 percent of the supplied water is billed to 149,000 customers), and an even lower collection rate (44 percent of the invoiced amount). This implies an effective revenue generation from only 23 percent of the water supplied. The largest debtors are government agencies and state enterprises. These figures refer to the supply volume presently imputed by EPAL, but improved distribution system management would allow illegal connections to be identified and the billable customer base to be expanded. There is thus an urgent need for EPAL to install bulk meters and improve the mapping of its distribution system. This would also facilitate pressure management, leading to fewer pipe bursts and better leakage control. The deficiencies in the billing and revenue collection system are being addressed through a US\$ 3 million investment project. In addition, EPAL should actively address the issue of unpaid water bills with the government's full support.

Sanitation services throughout the city and the peri-urban areas are inadequate, in poor condition, and present a serious health risk. The formal part of the city is served by a conventional waterborne sewer system, but much of the network is in a state of virtual collapse. The sewers carry both sewage and storm water. There is no treatment works and most of the raw sewage, which reaches the pipes, is discharged through a 2 km sea outfall pipe. Urbana 2000, the private company responsible for solid waste collection in the city, was awarded a contract to maintain and clean the sewer system, but significant investment is still required to address the underlying structural problems. A sewerage master plan for Luanda was prepared in 1995 by French consultants, and the same consultants completed a technical condition survey of the existing sewerage system in 2002.

Other parts of the city are served by septic tanks, which are periodically emptied by private companies (including Urbana 2000). While the majority of the population in the poor peri-urban areas depend on basic family-owned or communal latrines, many have no basic sanitation facilities at all. In 2001, DNA recorded a total of only 2,612 latrines in Luanda. A study of water and sanitation requirements in the peri-urban areas was completed in 2002 by Italian consultants.

#### *Water Supply and Sanitation in Other Urban Centers*

The prolonged civil war and major movements of rural population into the main urban areas have placed increasing pressure on dilapidated and poorly maintained water supply and sanitation systems. The Water Sector and Sanitation Development Strategy documents the water supply situation in 29 provincial capitals and other urban centers, which together constitute about 25 percent (3.4 million) of the total population of Angola.<sup>16</sup> Service coverage has declined from an estimated 75 percent in 1990 to 51 percent at present, of whom only 16 percent have piped household connections; the majority are dependent on chafarizes, standpipes, and truck-tank systems. The average installed capacity in the urban centers is estimated to be equivalent to 42 liters per capita per day, with actual consumption at around 20 liters per capita per day. Water that is unaccounted for is reported to be as high as 50 percent to 60 percent of nominal production. It is noted that in the peri-urban areas, which house the poorest and most vulnerable communities, consumption is at the grossly inadequate level of around 5 liters per capita per day. Besides Luanda, only four other cities (Huambo, Namibe, Lobito, and Benguela) have waterborne sewage systems, and in all cases, these only serve parts of their respective urban areas. As part of the PRUALB project, sewage treatment works were constructed in Lobito and Benguela.

Although the figures indicate that the situation in other urban centers is as bad as in the capital, most other cities do have the “safety valve” of groundwater being available. In Huambo, for example, families without access to piped supplies are often able to obtain water from hand-dug shallow wells, and therefore are not forced to buy water at very high prices from private vendors. Even those with house connections often supplement piped supplies with water from wells or

boreholes. Development agencies<sup>17</sup> have installed handpumps in various parts of Huambo and built accompanying infrastructure (sinks for washing clothes and bath rooms), these providing a greater range of facilities to the residents than the chafarizes in Luanda. The main types of handpumps used in Angola are Afridev, Volanta, or India Mark II. The Directorate of Water is promoting standardization in different parts of the country and encouraging private suppliers to set up commercial networks to make spare parts readily available for the particular pump that is used in each area.

All of the other urban centers have severe financial problems with inadequate tariff levels, low billing rates, and very poor collection ratios. This leads to low levels of maintenance and continuing degradation of existing water supply assets. Lack of adequately trained and motivated staff is also a major problem.

In terms of sanitation, besides Luanda, only four other cities (Huambo, Namibe, Lobito, and Benguela) have waterborne sewerage systems and in all cases these only serve the central areas (17 percent of the urban population). As part of the PRUALB project, sewage treatment works were constructed in Lobito and Benguela. In general, the systems are poorly maintained and dependent on inadequate government subventions. A mix of septic tanks and pit latrines serves the majority of the urban population, but many have no basic sanitation facilities.

#### **Water Supply and Sanitation in Rural Centers**

DNA estimates that only 15 to 20 percent of the rural population (approximately 6.1 million in 2002) have access to a safe water source, mainly from a network of more than 3,300 water points (largely boreholes with handpumps), of which up to 50 percent could be out of operation due to lack of spare parts and regular maintenance. Therefore, a high proportion of the rural population is dependent on seasonal supplies of surface water that can involve significant distances to collect modest amounts of water. Against this background, the Angolan authorities recognize the need for increased community participation and training, plus effective technical support and secure supplies of spare parts.

With regard to sanitation, DNA figures indicate that only 20 percent of the rural population has access to basic sanitation facilities (mainly pit latrines adjacent to

the home or communal facilities within 25 meters). Improvements in basic rural sanitation need to focus on community education and the provision of appropriate facilities at affordable prices.

## PPI Opportunities

### Introduction

All of the possible forms of private sector participation outlined in chapter 1 (except full privatization), could have a role in water supply and sanitation in the urban areas of Angola.<sup>18</sup> The particular circumstances of Luanda and of each of the other urban centers need to be considered before any particular option is chosen, with a view to further developing the private sector's role as experience is gained and demand for services grows. The objectives of private sector participation are to improve efficiency, reduce infrastructure demands on public budgets, and expand affordable water and sanitation services to the majority of the population.

Private operators have a particularly important role to play in respect of the last objective, as they are likely to be more innovative in the technology choice for service delivery. As was made clear in the previous section, there are a very large number of urban dwellers in Angola without reasonable access to clean water. At present, the technologies being offered are at the two extremes—at the top end, individual house connections to the piped water network, and at the bottom end, shared communal facilities. It would be tempting for the government to set a goal of providing piped house connections for all urban areas, but adopting this as a strategy would entail the majority of the population being condemned to decades of poor water access as the expansion of house connections would necessarily take decades rather than years to complete. At the same time, restricting people to the lowest service levels is both unfair and economically inefficient.

The designation of “unfair” is made in the context of the common finding from willingness-to-pay studies that poor people are willing to pay a surprisingly high proportion of their income in order to obtain not just access to water, but a higher service standard than the minimum that is achieved via shared communal facilities. In Luanda, where people living in the musseques are accustomed to paying an unreasonably high proportion of their income to obtain extremely limited

amounts of water, it is highly likely that the population would be willing to pay cost-recovery tariffs for relatively high service standards. Ideally, a strategy needs to be devised by supply entities to give people the highest service level at the earliest possible time, while making it possible to continuously upgrade technologies once universal coverage at some level of affordable service has been achieved. The same argument applies to providing a range of sanitation technologies.

Bringing in the private sector would be the most expeditious way to get this process started. A regulatory framework, which sets prices and standards of service, needs to be created. This must be designed to create the incentive structure to ensure that private operators deploy the most efficient technologies to provide services to the public.

To broaden consideration of possible technological options for Angola, box 5.2, briefly describes the range to be found in urban water supply in South Africa. Of immediate interest for Luanda are the yard tank options; this is discussed further at the end of the next section. Expanding the range of water delivery technologies is not just an issue for Luanda, however, but potentially has an important role in all of Angola's urban centers.

### Addressing Luanda's Water Supply Challenges

The water utility of Luanda, EPAL, is presently providing a creditable service given the extraordinarily difficult circumstances in which it operates. The problems faced by management span every aspect—technical, commercial, financial, and human resources. On the physical supply side, when the current investment projects and others in the pipeline<sup>19</sup> have been completed, there should be a considerable improvement in the water supply to Luanda and moderation of the highly inequitable prices that exist at present. To address the other problems, there is need at the same time to allow EPAL to become more commercial in its operations; that is, to be given the financial and managerial autonomy necessary to conduct its mandate effectively.

On paper, following its conversion to a public enterprise, EPAL is moving in the direction of commercialization, but in practice, the *modus operandi* of the state economic unit appears to be deeply entrenched. For example, the only financial reporting is a statement of the source and application of funds; there is no balance sheet for EPAL and no profit and loss statement in the

### Box 5.2 | Technologies to Provide Different Levels of Water Supply Service

This box outlines the technological “menu” available to water supply authorities in South Africa. The paper referenced below gives a profile of the technical, social, managerial, and environmental advantages and disadvantages of each option, together with details of the associated capital and operating costs. The options may be classified in various ways, in this presentation by level of pressure at the tap:

*Full pressure (volumetric payments):*

- House connection with prepayment meter
- House connection with conventional metering and monthly billing

*Medium pressure:*

- Regulated roof tank (volume controlled by “equity” valves at key nodes in supply network; customer receives water at roof pressure; flat rate monthly payments)
- Metered roof tank (customer receives unlimited water volume at roof pressure; conventional metering and monthly billing)

*Low pressure (flat rate monthly payments—water supply shut off if customer fails to pay):*

- Regulated yard tank (volume controlled by “equity” valves at key nodes in supply network)
- Manual yard tank (water bailiff opens valve and fills tank on a daily basis)
- Trickle feed yard tank (inlet flow regulator designed for, say, 25 liters per capita per day)

*Basic service:*

- Street tap with prepayment meter (allows 24 hour access and volumetric payment, but prepayment meters are disproportionately expensive at this supply level)
- Communal street tap (in South Africa payments for access to street taps are on a monthly, flat fee basis; design criteria are taps to be within 200 meters of each dwelling and be capable of supplying 25–60 liters per capita per day with 98 percent reliability)

Total monthly supply costs in South Africa (capital repayment, operation, and maintenance costs) range from US\$ 9 per household per month for 25 liters per capita per day collected by the customer from a shared street tap to US\$ 16 per household per month for 120 liters per capita per day for a prepaid full pressure house connection. These figures may not be directly comparable with costs in Luanda, but they do provide challenging food for thought given that the present situation in the musseques is one where a household reliant on the truck-tank supply chain is paying between US\$ 19 and US\$ 38 per month for 10 liters per capita per day.

The philosophy that the South African paper (33) enunciates is that:

Experience has shown that a policy of providing mixed levels of service is usually the most successful strategy. Through the use of alternative service options, one can select the appropriate levels of service and by so doing ensure significantly higher cost recovery and a more sustainable service.

Source: Department of Water Affairs and Forestry, *Water Supply Service Levels: A Guide for Local Authorities*, Pretoria, November 2000.

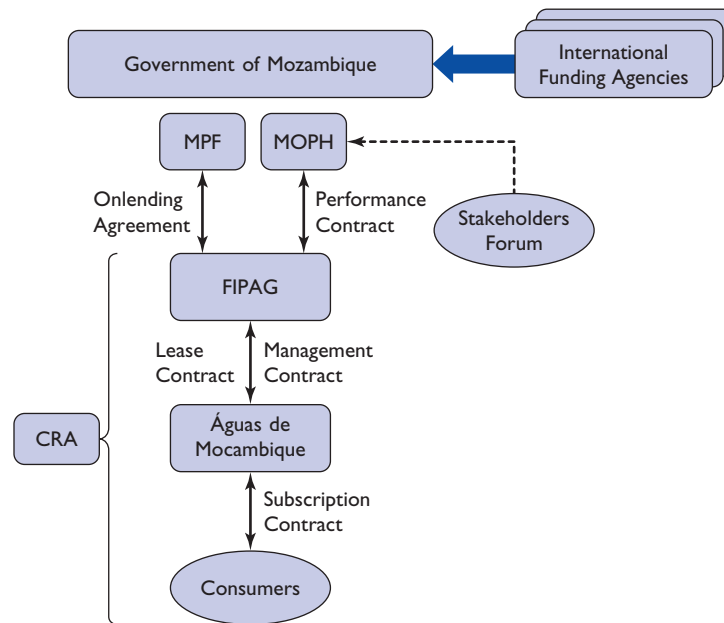
company’s reports. This should now change as the provisions of the General Accounting Plan are to be implemented under the supervision of the Fiscal Council from January 1, 2003.<sup>20</sup> The projects that are intended to improve EPAL’s position are negotiated and financed by the Ministry of Finance, with the utility playing a subsidiary role. Tariffs continue to be decided by the Ministry of Finance, with infrequent and inadequate increases. Being financially dependent on subsidies from the national budget, EPAL lacks the freedom of maneuver to operate as an effective water utility for Luanda.

The commercialization of EPAL would be a significant step in the right direction, paving the way for possible privatization. In some respects, this process has started with the reported signing of a performance contract with EPAL’s senior management in March 2003, followed in April 2003, by the government’s announcement to develop private sector participation in the

operation and management of Luanda’s water services (see below). The options, timing, and contract/concession details should be carefully considered, with the support of appropriate independent advice.

One PPI option which the government and EPAL are actively examining at present is the Mozambique model of the water assets being housed in a holding company owned by the state [*Fundo de Investimento e Património do Abastecimento de Água* (FIPAG)], with a private company *Águas de Moçambique* (majority owned by a competent technical partner) being given either a lease (Maputo) or a management contract (Beira, Quelimane, Nampula, and Pemba). There is also a regulator, *Conselho de Regulação do Abastecimento de Água* (CRA), to set tariffs and ensure adherence to standards and the attainment of performance targets. This institutional structure is illustrated in figure 5.1. Despite various problems (not least the withdrawal of the initial technical partner from



**Figure 5.1 Institutional Arrangements for PPI in Urban Water in Mozambique**


Note: MPF = Ministry of Planning and Finance, MOPH = Ministry of Public Works and Housing.

Source: Fundo de Investimento e Património do Abastecimento de Água, Mozambique.

the operating company), the institutional model is considered to be fundamentally sound. It could be strengthened, however, by extending the jurisdiction of FIPAG and CRA to cover sanitation as well as water supply, and to do so throughout the country (not just in the cities in which *Águas de Moçambique* operates). If Angola does decide to draw on the Mozambique model, it would be advisable to establish national coverage of both water and sanitation by the asset holding company and the sector regulator from the start.

Privatization options for EPAL were the subject of intense scrutiny and debate in 1998–99, culminating in a workshop held in Luanda in January 1999. At the time, a US\$ 102 million Luanda Water Supply and Sanitation project was being prepared for World Bank financing, which was to involve rehabilitation of Luanda’s water and sewerage systems and institutional strengthening.<sup>21</sup> It was concluded that the best way forward for EPAL was to invite bids from potential private operators for a phased 15-year PPI contract. Initially (1–2 years), the technical partner was to be remunerated on a fixed fee basis. During this period the rehabilitation work would commence and more detailed information on the state of the system would be compiled. In years 3–4, the operator was to be subject to

a performance-based management contract, and thereafter a concession was to be negotiated, which was to involve the private operator in successively taking on capital investment requirements and assuming progressively larger shares of commercial, operational, and project-related risks.

A flexible, phased introduction of an increasingly significant private sector role in Luanda’s water supply and sanitation has attractive features for the current situation, where rehabilitation and expansion of EPAL’s network remain very much on the agenda, and the information a private operator would require about the older Sistema’s I and II remains patchy. However, a phased approach to developing the ultimate concession arrangement entails a significant risk that the private operator will exploit its incumbent position once it is on board, demanding generous provisions once it becomes difficult to disengage and start afresh with a new operator. In other words, once the incumbent has a “foot in the door,” it will not be possible to bring any competitive pressure into subsequent negotiations.

In view of these problems, the recommendation made in this report is for a different approach. Taking account of EPAL’s current situation, the most expeditious and risk-minimizing way forward would be to

avoid going straight into a concession arrangement for the utility as a whole, but instead to opt for a progressive approach. Within a very short time frame, this could start with unbundling discrete components of the water supply system and making separate PPI arrangements for these, in all cases transferring as much responsibility and risk as the private sector is able to bear. The unbundling might usefully apply at the upstream end to raw water capture and storage, water treatment works, and possibly to the truck transmission network. At the consumer end of the system, functions that are critical to generating a secure revenue source, such as meter reading, billing, and revenue collection, might also usefully be outsourced on a performance-related basis, again with progressive transfer of investment responsibilities and risk. In addition, steps should immediately be taken to outsource the construction and operation of chafarizes and other technologies suitable for delivering water to those presently without service. One particular technology is highlighted in box 5.3.

Unbundling and outsourcing would have the effect of narrowing EPAL's core functions (largely to operating the transmission and distribution networks), making the enterprise more amenable to tight management. At a later stage, a decision could be made of whether to retain these core functions in state hands or whether to involve the private sector via one or more outsourcing, concession, or joint venture arrangements.

The above recommendation for private sector participation in Luanda's water supply is further elaborated in the recommendations outlined in chapter 8. This strategy is largely oriented to reinforcing EPAL, but as the previous section made clear, a wide-ranging approach will be required if the water supply is to be improved to the majority of Luanda's population living in the musseques.

One element should be to require private sector operators brought into the sector to offer a wider range of water supply technologies than is presently available. Of the technologies described in box 5.2, the yard tank options might be immediately relevant for Luanda. This would be particularly so if the underground tanks, which already exist as part of the truck-tank supply system, were in the future to be supplied via the piped network, with flows being controlled by regulatory valves in the network or trickle valves at the tanks themselves. Being underground, water would have to continue to be

### **Box 5.3 PPI to Disseminate Alternative Water Delivery Technologies**

As outlined in box 5.2, there are a number of technologies that could play a role in improving the access of people in the musseques to water. The quickest way to ensure that the potential of these technologies is realized would be to bring in the private sector. A regulatory framework, which sets prices and standards of service, needs to be created and then bids should be invited from prospective private sector operators.

The first target should be to encourage private operators to improve on the design and operation of chafarizes (see box 5.2). Of the other technologies described in box 5.2, the yard tank options might be immediately relevant for Luanda. This would be particularly so if the underground tanks (*cisternas*), which already exist as part of the truck-tank supply system, were in the future to be supplied via the piped network, with flows being controlled by regulatory valves in the network or trickle valves at the tanks themselves.

Being underground, water would have to continue to be retrieved from the tanks with buckets. Tank owners could initially continue to sell water to their neighbors, but under properly regulated conditions, which would preclude the exploitative prices presently being charged. This approach could readily be upgraded by moving to yard tanks (making it possible to draw water from taps at low pressure), and to roof tank options (higher pressure, allowing reticulation). To promote equity, households that do not presently own underground tanks should be given priority for yard and roof tanks.

In short, supplying existing underground tanks in Luanda with regulated or trickle feed piped supplies looks to be a promising, economical option at this juncture. From the viewpoint of EPAL, the advantages of this would include low peak factor (24-hour supply), self-regulated flow, and flexibility for subsequent upgrading of the service level.

retrieved from the tanks with buckets. Tank owners could initially continue to sell water to their neighbors, but under properly regulated conditions, which would preclude the exploitative prices presently being charged. This approach could readily be upgraded by moving to yard tanks (making it possible to draw water from taps at low pressure), and to roof tank options (higher pressure, allowing reticulation). To promote equity, households that do not presently own underground tanks should be given priority for yard and roof tanks.

In short, supplying existing underground tanks in Luanda with regulated or trickle feed piped supplies looks a promising, economical option at this juncture. From EPAL's viewpoint, the advantages of this would



include low peak factor (24-hour supply), self-regulated flow, and flexibility for subsequent upgrading of the level of service.

With regard to sewerage and sanitation facilities in Luanda, there are a number of possible opportunities to introduce PPI to improve services. In the short to medium term, the current maintenance and cleaning contract (with Urbana 2000) for the central sewer system should be reinforced and extended, with the contractor responsible for all his own machinery and equipment, and subject to a clear set of performance targets. It is also recommended that the government initiate a cost-effective sewerage rehabilitation investment program, with special attention being given to industrial wastewater pollution. These initiatives should be coupled with the establishment of sewerage charges and separate financial accounts. In the longer term, consideration should be given to the water utility taking over responsibility for the waterborne sewerage system (including wastewater treatment). This would be consistent with international practice.

In the peri-urban areas, the private sector in collaboration with NGOs and local community groups could be encouraged to provide more basic sanitation services, for example, construction and servicing of pit latrines and septic tanks, and small bore sewerage systems in more-well-established communities with a regular water supply system.

#### *Water Supply and Sanitation in Other Urban Centers*

In other urban centers, in the period up to 2016, the Water and Sanitation Sector Development Strategy seeks to achieve 85 percent coverage in respect of both water and sanitation. The specific target set for water is 70 liters per capita per day (through increasing production to 90 liters per capita per day and reducing losses to around 25 percent). The estimated financial requirement to achieve these targets is US\$ 2.3 billion (44 percent for water). As in the case of Luanda, it is recommended that this ambitious development program include adopting a range of technologies for water supply and sanitation, and not be limited to those currently in common use (see discussion related to box 5.2). Water and sanitation master plans are presently being developed for seven cities (Lubango, Namíbe, Ondjiva, Huambo, Kuito, Malange, and N'Dalatando). When these are complete, nine more

master plans are to be commissioned (Cabinda, Saurimo, Uíge, Menongue, Luena, Sumbe, Caxito, Dundo, and M'Banza Congo).

The strategy gives priority in the short term to forming public municipal enterprises to take responsibility for water supply and sanitation in all major urban centers. This would be an essential initial step before any of the privatization options specified above could be pursued. Ideally, the municipal enterprises should be given complete managerial and financial autonomy. Provincial governments would need to start implementing the provisions of Executive Decree 27/98 with vigor, as even if the maximum allowed real increase in tariffs of 15 percent every six months were to be consistently applied, together with the indexation formula to prevent tariffs being undermined by inflation, it would still typically require at least five years before cost-covering tariff levels would be achieved.

The negative consequences of extremely low tariff levels in the water sector could be mitigated by possibly allowing temporary cross-subsidies between electricity and water,<sup>22</sup> and to facilitate this, the public enterprises that are to be formed could be given responsibility for electricity, water, and sanitation.<sup>23</sup> Such multi-sector utilities would have a number of advantages. First and foremost, they would make it possible to make the best use of very limited numbers of people with the requisite skills in skilled areas such as accounting and engineering. There are broader ways in which economies of scale and scope would make combined utility companies more cost efficient and sustainable, for example, by having a common meter-reading, billing, and revenue collection system. Furthermore, it is not uncommon in provincial centers for there to be close links between the two sectors at the bulk supply level, for example, water production capacity being limited by inadequate electricity supplies. By putting responsibility for both sectors under one roof, it is more likely that joint solutions to problems will be found. The benefits of this will accrue as improved service to customers in respect of both electricity and water.

Cutting across sectoral boundaries is particularly appropriate for the smaller urban centers, where separate utility companies would clearly be inefficient and wasteful, but multi-sectoral utilities would also be appropriate for the provincial capitals of Angola. The arguments in favor of this approach are spelled out in more detail in

chapter 8. This also deals with broader national issues on how best to use capital subsidies to achieve universal access to services, how to involve recipients in prioritizing the use of such subsidies across sectors, and how best to provide the professional, independent regulation that is needed to ensure sustainable achievement of national infrastructure objectives.

For conventional sewerage and basic sanitation facilities, the private sector should be encouraged to offer maintenance and basic construction services, especially in the peri-urban areas, in collaboration with NGOs and local community groups.

### **Water Supply and Sanitation in Rural Areas**

The introduction of PPI in rural water supply and sanitation will be a challenge for the government to set appropriate incentives and an effective regulatory environment that is not too onerous. The main beneficiaries will be the rural population, but it will also encourage local entrepreneurs and skill development, and foster partnership with local communities and NGOs. The private sector could provide services in the form of well drilling, pump supply, installation, and maintenance, plus construction and maintenance of basic sanitation facilities. The opening up of these opportunities could be accomplished in two ways: through either competitive contracts awarded by the provincial government, or sector deregulation in which the private sector is actively encouraged to develop local and provincial services for the rural water and sanitation sector.

### **PPI Constraints—Water and Sanitation**

Due to the unique risks, water and sanitation are notoriously unattractive for private sector investors. Water and sanitation are local services with large health and environmental externalities, and they are easily politicized with services being extended irrespective of ability to pay; the assets are largely underground and are thus difficult to value and there are large currency risks (revenues in local currency, and capital expenses to a significant extent in foreign currency). “Even in industrialized countries, the credit strength of off-taking municipal governments and the sector’s traditional monopoly structure expose lenders to potentially significant credit, regulatory and political risks.”<sup>24</sup>

These concerns apply *a fortiori* to Angola. The most pressing issue is the political pressure to maintain low

tariffs for the minority with access to piped water, while accepting that the poor majority often have to pay more for water. As noted earlier, in Luanda the informal market prices are 30 to 60 times higher than the piped water price. While this issue is now being addressed through the investment projects, a short-term measure would have been to allow EPAL to purchase trucks to compete with the private truck owners and to subsidize the building of tanks within the peri-urban residential areas to reduce the local monopoly power of the limited number of tank owners.

Table 5.1 summarizes the water supply and sanitation situation as regards the six criteria identified as being important to potential private sector participants for the CFR as a whole (see chapter 1). Each of the issues has been discussed in more detail in previous chapters.

### **Solid Waste Collection in Luanda**

#### ***Legal and Institutional Framework—Solid Waste***

The responsibility for refuse collection, cleanliness, and sanitation of the city of Luanda is legally vested in the state economic entity *Empresa de Limpeza e Saneamento de Luanda, Unidade Económica Estatal* (ELISAL-UEE).<sup>25</sup> In 1997, the Luanda Provincial Government contracted the ELISAL management to a private Angolan-owned company, Urbana 2000. Under the contract, the equipment was to remain state property (through ELISAL), but would be made available to Urbana 2000. Urbana 2000 contracted out equipment maintenance to a German company (Nehlsen), but the contract did not require or make provision for Urbana 2000 to replace equipment or make any other form of investment.

In short, the Urbana 2000 arrangement was a rudimentary management contract, not a performance-based one. The contract ran initially for three years, but has subsequently been renewed twice. It lapsed in September 2002, pending new concession proposals being agreed, and is currently being continued on an *ad hoc* basis.

#### ***Performance of Urbana 2000***

Since it was contracted in 1997, Urbana 2000 has had a significant initial impact, increasing solid waste collection from 869 cubic meters per day in August 1997 to about 3,500 cubic meters per day in 2001. At that time,

**Table 5.1 PPI Constraints in Water and Sanitation**

Constraint Area	Comments
Data/studies	Luanda: Major gaps in both technical & financial information (e.g., information on Sistemas I & II and sewerage network is poor; no balance sheet and proper financial statements for EPAL). Other urban centers: Seven cities soon to have completed master plans with another nine to follow; scant or patchy information about water and sanitation in other urban areas. All urban centers: High levels of water that is unaccounted for; poor maintenance, high rehabilitation costs, and significant underinvestment. Rural areas: Inadequate information on service coverage and conditions
Legal and regulatory framework	New Water Law is not license- or concession-friendly; regulations are yet to be published. Delegation of water tariff-setting to provincial governors has not resulted in higher, cost-reflective tariffs. No commitment at present to establishing a professional regulator independent of policymakers to be responsible for setting tariffs and adherence to standards (for customer service, environmental sustainability, and so on).
Tariffs and revenues	Piped water is heavily subsidized. Revenue deficiencies arise from low tariffs, inadequate billing, and poor collection rates. There are no sewerage charges in the main urban centers with conventional waterborne sewerage systems. In peri-urban areas, people forced to buy water from the informal private market at prices that are 30 to 60 times higher than the piped water tariffs. Even people receiving water from communal facilities (such as the chafarizes in Luanda) pay more for water than consumers with piped house connections (24 kz vs. 18 kz per cubic meter).
Contract structure	Luanda: Most advanced proposal is for flexible, phased 15-year contract with a private operator—if revived, safeguards need to be put in place at the start to prevent undue incumbent advantage in subsequent negotiations. Other urban centers: Limited experience to date of management contracts. Contracts with private operators to supply services across various sectors, including water, would require very careful formulation.
Financial standing	EPAL and other urban water utilities need to reduce financial losses and improve revenue collection. Tariff revenues plus subsidies (with some mechanism to assure adequate and timely payment) should be sufficient to attract financing of new investments. The government should grant more financial autonomy to municipal utility enterprises, including more capital investment to start the process of network rehabilitation.
Political commitment	The government should give a firm lead in implementing key components of the Water and Sanitation Sector Strategy, including commitment to cost recovery tariffs (including capital costs) and private sector participation.

daily garbage generation is estimated to have been around 2,600 cubic meters per day, so Urbana 2000 was beginning to make inroads into the accumulated backlog. However, as the contract progressed, the volume of rubbish generation rose rapidly, for example, to an estimated 3,400 cubic meters per day by 2001, while the company's ability to remove rubbish declined sharply.

With no investment in the already aging fleet of trucks, dumpers, tractors, and other equipment, which Urbana 2000 took over in 1997 from ELISAL, by 2002 only 50 to 60 percent were reported to be still in operation. With growth in traffic, the city also became much less accessible over the years, forcing Urbana 2000 as early as 1998 to abandon daytime shifts in favor of working mainly at night. The company also experienced financial difficulties; in January 2002, for example, the provincial government was one year behind in payments to Urbana 2000, with a debt of over US\$ 10 million.<sup>26</sup>

Future contractual arrangements must involve a mechanism to ensure that there is adequate investment in equipment and containers, keeping pace with

growth in the city, and protection for operators from the risk of late payments by the provincial government. The contracts and associated arrangements (with communities and local enterprises) also need to ensure that a more comprehensive removal of rubbish is achieved. Urbana 2000 is only required to locate and empty skips into which residents place their solid waste. The rubbish around the skips is not collected by Urbana 2000, so that the superficial impression even in the formal part is of a city inundated with refuse. The city's pavements and roads are in poor condition, so there are plenty of indentations, which attract filthy wastewater and rubbish. The main stormwater drains, which are open canals, are also clogged with garbage. These feed into the sewer system, which ultimately discharges into the sea.

Even if Urbana 2000 had had adequate equipment at its disposal, other constraints it has encountered have made clear that a satisfactory solution to solid waste in Luanda must involve the participation of the communities, particularly in the inaccessible musseques. To obtain a better understanding of the problems and the possible role of communities in formulating solutions, the

#### Box 5.4 Community Involvement in Solid Waste Management in Luanda

During 2002, a team of consultants conducted a study on community involvement in solid waste management in the suburbs of Luanda. The report (referenced below) summarizes available information about the demography and socioeconomic status of the residents of Luanda and presents the results of a survey of 362 households conducted in Cazenga and of a focus group discussion held with community leaders. It also analyzes the performance of Urbana 2000 and of two NGO projects established to assist in rubbish collection and removal. The main report findings are that:

- There is an acute awareness among residents of the problem of solid waste accumulation and the health dangers this poses (compounded by the lack of stormwater drainage);
- The areas around and between peoples' houses are kept clean and tidy—garbage accumulates once it reaches a collection point that is not adequately served by Urbana 2000;
- People are willing to participate in the costs of solid waste removal (to the extent of 20 kz to 50 kz per household per month), provided they are involved in defining, monitoring, and refining the way that this is done;
- Local private initiative and the widespread availability of labor should be channeled into solving the problems of solid waste in the city; and
- Another essential ingredient of any solution is the need to greatly increase the amount of heavy equipment available for bulk collection and removal, together with the capacity of containers available to the public (in 2000, installed container capacity was around 4,400 cubic meters, as compared with a minimum requirement of 7,000 cubic meters, most of the deficiency being in the peri-urban areas of the city).

The report's main recommendation is that solid waste bulk collection and removal should be the responsibility of one or more formal private sector operators, while delivery of rubbish from homesteads to the bulk skips should be handled by small-scale local enterprises, paid for by local residents.

Source: AgriPro Ambiente e Profabril Programa de Gestão Comunitária de Resíduos Sólidos dos Bairros Suburbanos de Luanda, November 2002.

Provincial Government of Luanda commissioned a study that was carried out during 2002.

Some of the main study findings are summarized in box 5.4, above. As in the issue of access to water in the center and the peri-urban areas, the solid waste study highlights further inequities within Luanda:

- The formal part of Luanda is well served by garbage containers, the roads are all accessible to collection

vehicles, and residents do not have to make any direct payment for rubbish collection.

- The musseques are presently poorly served by Urbana 2000—the future solution that is envisaged would be a great improvement, but would require residents to pay for what would still be a much lower service level.

To achieve greater equity within the city would require establishing a system of property-based taxation. This should include a rates element to provide a basic revenue level for the Provincial Government, as well as a specific rubbish collection charge. As no such system presently exists, it will be an enormous exercise. Initially, it is the residents of the formal part of the city who should be targeted, as they should be making a specific financial contribution to cover the far superior services they enjoy.

#### Options for the Future

The report summarized in box 5.4 analyzes the pros and cons of a number of options for institutional responsibility for solid waste collection and removal. The five options considered are:

1. Continue with Urbana 2000 covering the whole city;
2. Establish area concessions with different private operators in each area;
3. The nine local municipalities within Luanda assume responsibility for solid waste;
4. A large number of local private enterprises;
5. Community organizations supported by cooperatives and NGOs.

The report does not make a definitive conclusion on which of these options should be chosen, but it does have some overarching recommendations, namely that:

- There should be standardization on the skips used for bulk collection and transport and a standard set for their accessibility (proposal is 12 cubic meter containers adapted by Urbana 2000 for ease of access by children, placed at intervals of 200 to 500 meters on main roads);
- Locally available labor (probably organized in local enterprises paid for by residents) should be involved in transporting garbage from all those parts of the musseques, which are inaccessible to collection vehicles, to the 12 cubic meter containers on the main roads;

- The willingness of the population to separate garbage to facilitate recycling should be exploited, starting with a pilot project to investigate the viability of recycling aluminum beverage cans.

In early 2003, Brazilian consultants completed a complementary report, “Reestruturação do Sistema de Limpeza Pública na Província de Luanda.” The report examined a number of options, including: a state-operated entity; concessions operated by private companies; and a mixed public-private enterprise. The recommended solution favors ELISAL as the main concession holder for solid waste services with the authority to sign subcontracts with private sector operators that, in turn, would be selected through a competitive bidding process. The following general structure is envisaged:

- Provincial regulator for solid waste;
- Provincial supervision unit for solid waste;
- ELISAL to hold the main concession for solid waste services in Luanda and be responsible for the main assets and equipment, which would be leased to the subcontractors;
- Solid waste collection—five private sector subcontracts in five designated areas of the city, including the peri-urban areas;
- Landfill site(s) to be managed and operated by a private subcontractor;
- Hospital and other clinical wastes—a private subcontractor to collect and dispose of hospital and other clinical wastes. It is assumed that this will be supported by the construction of an incinerator;
- Sewerage and drainage system—a private subcontract to manage and operate the sewerage and drainage system in the formal area of the city;
- Industrial solid waste (including solid waste from the port and airport)—a private subcontract to collect and dispose of industrial solid waste.

It is reported that the Provincial Government favors the structure outlined above, because it will introduce more competition, attract more Angolan companies because of the smaller size of the subcontracts, and provide an improved service throughout the city. However, the proposed structure is quite complicated and cumbersome and will require strong leadership by the regulator and the supervision unit if it is to operate with reasonable efficiency. In addition, in the longer term, it would be more appropriate for the water utility company to take responsibility for the waterborne sewerage system.

### *PPI Constraints—Solid Waste Collection*

Since a private sector operator has been responsible for solid waste collection in Luanda for the past five years, there is less concern than in other sectors about some of the general categories of PPI constraints that the CFR has identified. For example, unlike in other infrastructure areas, there is a wealth of information available from recent studies. There is also more experience on the required legal framework and political commitment to private sector participation.

The main constraint or risk from a private operator viewpoint relates to assurances about payments. Until property-based local taxes or service charges are established, there will be no direct payments by the beneficiaries of the solid waste, sewerage, and stormwater services. It is understood that the Provincial Government will continue to pay the private contractors for their services. This presents a major risk for private companies, because late payments will cause severe cash flow problems and a decline in service provision, as experienced recently by Urbana 2000. The risk of late payments could be considerably reduced by adequate letters of credit being established in favor of private sector operators.

It would be possible, however, for the concessionaires to make contractual arrangements with particular customers that generate large amounts of solid waste. Servicing such commercial customers should not be to the detriment of the mass of the population. The contracts should contain specific performance requirements on which payments will be based (availability of skips, regularity of collections, metric tons of garbage moved, and so on), but should also require accountability to Luanda’s citizens and to the local initiative enterprises responsible for moving the garbage from homesteads to the bulk skips. At a minimum, this should involve the formation of joint citizen-government-operator monitoring committees in each concession area. Regular reports should be published in the newspapers and public report-back meetings held.

### **Notes**

1. Ministério da Energia e Águas, *Estratégia de Desenvolvimento do Sector das Águas*, November 2002; at the time of writing still awaiting formal approval by the Council of Ministers.
2. Law 13/94, recently revised and published as Law 5/02 on 16 April 2002.



3. Law 6/02, 21 June 2002.
4. Executive Decree 27/98, 22 May 1998.
5. Water rights falls under the ambit of water resource management, whereas a license or concession will encompass the financial, commercial, and contractual rights and obligations on a private sector operator.
6. World Bank Project P000035: Lobito/Benguela Urban Environmental Rehabilitation Project, implemented over the period 1993–1998 (PRUALB = *Projecto de Reabilitação Urbana e Ambiental de Lobito e Benguela*).
7. Calculations based on data in the Profabril and Agri-Pro Ambiente report on Community Management of Solid Wastes in the Suburbs of Luanda, November 2002. Other sources have higher estimates for Luanda's population (up to 4 million in 2002).
8. Due to a lack of bulk metering, even important global numbers like the total water supplied to customers are not known with any accuracy. Some relatively modest investments on the engineering side could greatly improve the information available to manage the system more effectively.
9. EPAL's contracts with customers stipulate that water should not be passed on to third parties.
10. This situation is especially the case in Luanda; other areas more typically have access to groundwater or boreholes.
11. These calculations allow a modest amount of 6 million cubic meters p.a. for nondomestic uses in the city.
12. If the peri-urban average is 5 liters, the corresponding piped area domestic average would be 43 liters per capita per day.
13. For a description of development of the kiosk concept in Ouagadougou, see R. Werchota (2001), Sustainable Service Provision for the Urban Poor, 27th WEDC Conference, Lusaka, Zambia.
14. See Peter B Robinson (2002) "All for some": Water Inequality in Zambia and Zimbabwe. In *Physics and Chemistry of the Earth*, 851–857.
15. As part of the elaboration on water pricing policy, Executive Decree 27/98 (22 May 1998) empowered provincial governors to stipulate prices for truck-tank suppliers or other forms of informal private providers of water. In Luanda, no regulatory requirements have yet been imposed on the truck-tank operators. While the inordinately high water price to final consumers is bemoaned, there are fears that imposing regulations could destroy this supply channel, thereby making things even worse for people in the peri-urban areas.
16. Tables 2 and 3 of the Strategy document; to be consistent with the figures in the previous section, an adjustment to the population of Luanda has been made to bring it up to 3.6 million.
17. Many of these facilities have been constructed, with a high degree of community involvement, under the FAS Program (*Fundo de Apoio Social*).
18. A slightly different, water-focused presentation of the spectrum of options is available in Penelope J. Brook Cowen, The Private Sector in Water and Sanitation—How to Get Started, Public Policy for the Private Sector Note 126, World Bank, Washington, DC, September 1997 (also available in Portuguese).
19. The largest proposed project is the US\$ 57 million for Luanda water envisaged as part of the World Bank's Post-Conflict Rehabilitation & Reconstruction Program.
20. These public enterprise accounting provisions are summarized in box 3.2.
21. The project was not finalized or implemented due to Angola falling into arrears with the Bretton Woods Institutions.
22. This possible benefit of a multi-utility enterprise presupposes that electricity prices can be set above economic levels in order to provide an element of cross-subsidy.
23. See Appendix 2 for a fuller discussion on multi-utility regulators.
24. For more detail see David Haarmeyer and Ashoka Mody, Financing Water and Sanitation Projects—The Unique Risks, Public Policy for the Private Sector Note 151, World Bank, Washington, DC, September 1998.
25. The legal framework for ELISAL is Decree 26/91. This lays out the rationale for the formation of the company and gives its statutes (including a detailed specification of its structure and operations prior to the management contract with Urbana 2000).
26. Information in this section is from Urbana 2000 and from the consultant report referenced in box 5.4. The estimates of solid waste generated are based on an assumption of 500 grams per resident per day. To convert to tons, the average specific gravity is estimated at 500 grams per liter.



# 6 Transport

The transport sector in Angola is discussed in terms of the four principal modes: roads and highways, railways, ports, and airports. The locations of the main facilities are indicated in appendix map.

## Roads and Highways—Organizations

Responsibility for managing Angola’s national highways lies with the Instituto Nacional de Estradas de Angola (INEA, the Angola Roads National Institute).

Created by Decree 28/90, INEA is responsible for planning and managing the primary road network, and for the operation of a Road Fund, under the umbrella of the Ministry of Public Works and Urbanism. INEA has a staff of 1,300.

Decree 27/94 of July 22 enacted a Road Fund. It was intended to cover financing the construction, rehabilitation, and maintenance of roads and bridges with proceeds coming, according to Executive Decree 61/95, November 24, from the State Budget, 10 percent of fuel taxes and customs duties, 20 percent of lubricant taxes, and 50 percent of the circulation tax and traffic fines, which are collected by MOF and considered quite low.

The Road Fund is not yet operational and will require the Board to be selected and appointed and the Fund and its staff and offices to be established. Road user and motor vehicle charges would need to be revised in order to put the Road Fund on a sustainable basis.

Financing, construction, and maintenance of regional roads are the responsibilities of the provincial governments, under INEA’s technical supervision; this includes procurement of services.

## Legal and Regulatory Framework

Roads services are not specifically mentioned in Law 05/02, of Delimitation of the Sectors of Economic Activities, that grants the opportunity for private participation in the transport sector within certain limitations.

It is not clear if the ownership of the roads network will be considered, in accordance with this Law, as similar to the ownership of ports and airports, which are defined as areas of *absolute state reserve* and limited to the public sector. Neither is it clear if providing roads services would be considered as *relative state reserve*, and can be conducted by corporations or entities that are not in the public sector, but operated by the private sector through temporary concession contracts.

## Roads and Highways—Current Situation

### Road Network

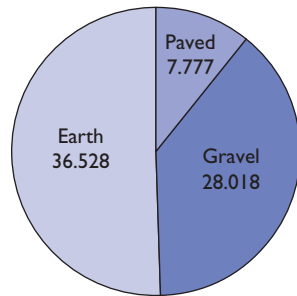
Most of the existing road network was built before independence in 1975. The road network is classified as set out in table 6.1 and figure 6.1.

The national roads network (*Rede Fundamental*), including the paved roads and 15,571 km of earth roads

	Paved	Gravel	Earth	Total
Length (km)	7,777	28,018	36,528	72,323
Percent	11	38	51	100

Source: INEA.

**Figure 6.1 Road Network in Angola (km)**



Source: INEA.

connecting mainly provincial capitals and local roads, is under the INEA's direct supervision.

Much of the network has received little or no maintenance as many roads are located in former war zones and have carried little or no traffic. Because of the security situation, INEA has limited knowledge of the true condition of many roads and of the likely rehabilitation costs. Currently, it is known that over 300 bridges of varying lengths and capacities have been destroyed and will need to be rehabilitated or replaced with Bailey bridges and ferries.

#### **Sector Operating Characteristics**

Demand for road transport has been distorted by security, seasonal, and serviceability considerations. For instance, roads that are passable in the dry season may not be passable during the rains because of the lack of bridges or ferries. During the course of a year, demand may be met by both air and road transport, at vastly different financial and resource costs. It may be several years before the pattern of transport demand stabilizes. Rehabilitation priorities are likely to be determined by needs to resettle population displaced by the war and possibilities for improving access of agricultural production, in particular, foodstuffs, to markets.

Traffic density throughout Angola is still light and is concentrated in Luanda. The number of light vehicles

operating in 2001 was 139,284; there were 27,843 trucks and buses.

The regional concentration of road use is also reflected in consumption of diesel and gasoline. During 2001, 66 percent of the total demand of 340,000 metric tons was sold in the Luanda area. Interprovincial traffic volumes are also still small. Traffic volumes along arterial routes are still affected by security and seasonal factors, but are understood to be very low.

#### **Road and Highway Network Investment**

In April 2002, the GOA approved a program of emergency repair and reconstruction of roads. The first phase, to be completed in the 30 months to September 2004, envisages basic repairs to create the minimum conditions for traffic. The first phase is planned to cost US\$ 55 million, and comprises US\$ 45 million for rebuilding roads and US\$ 10 million for bridges. The second phase is aimed mainly at improving regional connections with the main roads and is budgeted to cost US\$ 171 million.

Fifteen INEA brigades and contractors will undertake the work. The capacity of the INEA brigades will be improved through investment in equipment, and nine new brigades will be created.

#### **PPI Opportunities in Roads**

Road and bridge rehabilitation is an early priority. With the exception of Luanda, traffic densities and volumes are low. Vehicle ownership and density are low outside urban areas. This is the sector background to PPI opportunities, which are short term (e.g., privatizing road brigades) and medium term (e.g., contract road maintenance and tolled facilities).

#### **Privatizing Road Brigades**

INEA has been studying the possibility of restructuring a sample of four road brigades and has evaluated different alternatives for their future:

- State ownership
  - Maintaining the INEA brigades
  - National Enterprise of Road Equipment
  - Provincial Enterprises of Road Equipment
- Private operations
  - Joint venture
  - Private enterprise

INEA is willing to implement the last option, i.e., private ownership of the road brigades, through the transfer of workers and the selling of brigade assets to private operators. This option is seen as bringing better management, efficiency, and additional financial capabilities, compared with maintaining the assets and the operations within state ownership, even under a corporate organization.

A further solution could be to privatize the brigades through the provision of national and regional rehabilitation and maintenance contracts, permitting the brigades to acquire the equipment and so increase the number of road management operators in Angola. To pursue the privatization of INEA brigades further, valuations must be completed and the privatization methodology and timing defined. International experience of creating brigades and private provincial or interprovincial pools of equipment could also be considered (for at least part of the equipment), to be used by different private operators, particularly smaller operators.

INEA recently invited private operators to supply management services to the Provincial Brigades of Zaire, Uige, Malange, Kwanza Sul, Benguela, Huambo, Bié, Moxico, Lunda Sul, and Kuando Kubango. Five companies bid in this tender, 18 having purchased the bidding documents. In support of this approach, another recent study on the privatization of four INEA brigades (Huila, Lunda, Kwanza Sul, and Cabinda), found four private contractors operating in these provinces, two of them operating nationwide and two only locally.

Besides the main rehabilitation works that may be started under the Emergency Program for 2003 and 2004, provincial road maintenance enterprises may soon assume an important role, ensuring improved road conditions. This constitutes a further opportunity for national entrepreneurs and smaller public works companies to develop their activities.

There are a number of private contractors in Angola that are able and willing to carry out road and bridge rehabilitation, particularly participating in tendering for provincial brigades. Recently in a tender on a cross road bridge in Luanda, 11 contractors, both national and foreign, presented bids, 18 having purchased the bidding documents.

### *Toll-Funded Improvements*

International experience shows that rehabilitation, construction, and operation of new and replacement bridges and road structures—tunnels and so on—can be financed by tolls levied on users. However, financial feasibility depends critically on traffic volumes, users' willingness to pay, and the opportunities for avoiding tolled facilities. No opportunities have so far been identified in Angola, considering, in particular, the fact that traffic levels are not well established, due to the poor condition of roads. Even if tolls were introduced in the bridge over the Kwanza river (on the Luanda-Benguela road), under a concession contract, and Leba climbing on the Lubango-Namibe road, collected directly by MOF, the current small traffic volumes are unlikely to make toll roads profitable for private operations. However, maintenance contracts with private companies on the basis of shadow tolls according to traffic volume or performance-based contracts for certain main roads, may also be an option.

Shadow tolls are payments that are made by the government to the operator of a road rather than being collected from the road user. Shadow tolls do not affect demand but are a way of paying the operator for the actual usage.

Performance contracts guarantee certain payments to the contractor based on keeping the road parameters, like possible speed or number and size of potholes per km, within established limits.

The viability of this approach depends on a government capable of paying them and providing adequate revenue to the operator. Maintenance and rehabilitation contracts based on shadow tolls or performance-based contracts are a potential way of attracting private financing and improving the state of maintenance on public roads.

Under such contracts, most short-term investment is the contractor's responsibility. His task is to finance the road's rehabilitation and assure its maintenance. During contracted years, the state's obligations are to pay a fee based on the number of vehicles using the road and the maintenance of a preestablished standard of road quality.

The benefits include lower road investment cost than available under traditional construction as the operators seek the lowest construction, rehabilitation, or maintenance costs, thus improving the efficiency of the

whole system and avoiding the high costs of current contracts. Delays in execution tend to be minimized as operators also minimize construction times to start the payment of toll fees.

Shadow tolls contracts can be viable in situations where traffic levels are too low to support real toll roads. However, private sector acceptance requires confidence in the state's ability to maintain regular payment.

### **PPI Barriers in Roads and Highways**

At present, financing road rehabilitation and maintenance is directly dependent on the state budget as the Road Fund is not yet in operation. Gasoline and diesel prices are heavily state-subsidized, and there is no collection of fuel consumption taxes from road users. Until the road user charges are reviewed, the Road Fund will be unable to serve its intended purpose to fund road rehabilitation and maintenance.

A February 2000 report on *Strengthening the Institutional Capacity of the Ministry of Transport* recommended that income from road users must cover maintenance costs in a first phase and should contribute to rehabilitation costs in a second phase. A review of Road Fund revenue sources and allocation mechanisms will be necessary for PPI in road network rehabilitation and maintenance to be put on a sustainable basis.

Funds generated by road users should be defined soon, as users must be the main payers for road rehabilitation and maintenance. For this purpose, subsidized fuel prices should end and be replaced by prices including significant taxes that will be mainly used on roads.

Independent management and financial autonomy of the Road Fund from INEA is a fundamental requirement to assure regular payment to contractors both on works and on any kind of rebuilding and maintenance agreements.

Under discussion are proposals of new legislation, made by INEA, defining a new approach to the proceeds and management of the Road Fund.

INEA is proposing a strong increase, particularly in fuel and circulation taxes, with all proceeds reverting directly to the Road Fund.

In March 2003, for instance, the price of gasoline was around US\$ 0.17, while the price in the international bulk market was over US\$ 0.25. In the region (South Africa and Mozambique), the price of gasoline is more than US\$ 0.50.

Considering that the estimated consumption of gasoline and diesel by vehicles is around 336,000 metric tons (respectively, 83 percent of 150,100 metric tons of gasoline and 36 percent of 588,200 metric tons of diesel sold in 2001), an estimation can be made about the proceeds that could be generated by taxes on fuel similar to taxes charged in neighboring countries. Each 10 cents of US\$ taxed per liter consumed of gasoline and diesel used by motor vehicles would generate an annual revenue of more than US\$ 30 million.

The Road Fund is proposed to have an independent management with the participation of different stakeholders, constituting the main source of revenues to INEA.

During the second phase of the emergency program, the GOA is expecting to contract out further repairs of the highway and crossings network. INEA will assume the role of executing agency and contract manager, and private contractors will conduct maintenance and construction.

A principal obstacle at present to private sector participation in the road sector relates to the government's credit rating among private contractors. Risk of default on payments has led to suspicions by contractors of the state's capacity to honor financial commitments. A firm commitment from the government and INEA to honor financial undertakings on time could lower rehabilitation costs as operators tend to inflate prices to compensate for these avoidable financial risks.

In the case of shadow tolls contracts, the private sector's confidence in the capacity of the state to honor its commitments is very important as contracts can stretch up to 30 years. The private sector and its financiers will not attempt to mobilize the huge financial commitment if they distrust government's ability to honor the terms of the contract, especially payment.

The process by which the private sector bids to build own (operate) and transfer a road or bridge is critically dependent on the revenues likely to be generated. In crude terms this is the volume of traffic multiplied by the charges collected. A minimum volume of

20,000 vehicles per day paying US\$ 0.05 per km would take 12 years to repay a credit costing US\$ 2 million. Rehabilitation of existing roads is less expensive and requires a lower capital cost and so can be feasible at lower volumes and lower charges. Future development will depend on the growth of traffic volumes towards these minimum levels and users' willingness to pay, which at this point are completely unknown.

Finally, it must be emphasized that pursuing best procurement practices, along with timely allocation of funds, will interest private parties in supplying maintenance and rehabilitation services, creating competition between existent and new operators, with relevant benefits for the state in terms of costs. An example of a successful program in Mozambique is given in box 6.1.

The most important obstacle, however, to PPI development in the transport sector, and roads in particular, is the poor knowledge of the demand for services in terms of the traffic volumes and composition. Current data relate to road traffic in 1970, before independence.

Civil war, lack of maintenance, changes in economic activity, and population movements have completely changed the pattern of supply and demand. The greatest medium-term contribution to PPI in the road sector would be undertaking a national transport study that identified priority corridors, economically efficient transport modes, and the quantification and allocation of government support to each for the purposes of introducing PPI.

Finally, there is no clear legal framework concerning private sector involvement in roads. It is important to create a legal framework that defines concession conditions for the introduction and management of future PPI opportunities and clearly states the ownership of the infrastructure, concession periods, and basis for fees, bidding, and award procedures.

### Railways—Sector Structure and Key Organizations

The National Directorate of Land Transport (Direcção Nacional dos Transportes Terrestres), under the umbrella of the Ministry of Transport, is responsible for railway supervision and regulation. Three railway enterprises fall under the umbrella of the Ministry of Transport and are responsible for the whole management activity.

#### Box 6.1 Private Sector Involvement in Road Maintenance and Construction in Mozambique

In Mozambique, donor support to the transport sector has led to major improvements in the road network's condition. Under several recent loans for about US\$ 260 million, over 3,800 km of primary, secondary, and tertiary roads were rehabilitated, 2,000 km of roads have received periodic maintenance, and about 14,000 km of roads are benefiting from routine maintenance. The loans have also brought about significant progress in institutional strengthening and capacity-building programs.

The program's overall purpose is to stimulate economic growth and contribute to poverty reduction through improved road infrastructure, better sector policy, and enhanced roads sector management. With large donor support, a sound framework has been set with good procurement practices and financial commitments by the state that has facilitated strong and very competitive private participation in the road sector.

Ten provincial road maintenance state enterprises were transformed into six share companies, jointly owned by the workers (20 percent) and the state (80 percent), three for road maintenance and construction and another three for renting equipment. These companies now compete with other private companies for road maintenance and construction.

The rationale for private participation was to improve efficiency and quality of services offered, to attract private investments, and to open the participation of private local partners in the share capital of new businesses. State shares will be sold progressively, as the local private sector becomes able to tender for these new companies.

Creating enterprises to rent heavy road equipment was to allow smaller local operators to be involved in larger road works at a lower investment cost.

### Legal and Regulatory Framework

In accordance with Law 5/02, on Delimitation of Economic Activities, rail transport is *relative state reserve* and can be carried out by non-state corporations or entities through temporary concession contracts. The Cabinet prepares regulations for concessions of railway services for approval.

Law 5/02 doesn't mention expressly rail infrastructure, current interpretation of rail transport referring mostly to rail operations services.

However, recently, the National Assembly approved the Base Law of Surface Transports that states the rail



national network as state public domain, including the main and the complimentary network.

According to this new Law:

- Building, maintenance, and inspection of rail infrastructure, included in the national network, may be done by the state or other entities under concession, delegation, or contracting of works.
- Operations of transport for the whole or part of the rail national network constitute a public service to be assured under concession, delegation, or contracting of services.
- Tariffs must consider the concessionaire production costs and the situation of the transport market, the state granting compensations for imposed social tariffs that don't cover production costs.

## Railways—Current Situation

### *The Luanda Railway*

Empresa de Caminhos de Ferro de Luanda (CFL), a state enterprise, operates the Luanda Railway. In 2001, it employed around 800 staff and carried 754,000 passengers and 51,265 metric tons of cargo, continuing a trend of decline in services.<sup>1</sup> In 1986, CFL “carried 1.7 million passengers, (about 40 percent of its 1978 level), and 21,000 (metric) tons of cargo, well down from the 1985 figure of 63,000 (metric) tons.”

The service from Luanda to Dondo (181 km) and Malange (424 km) stopped before the end of 2001, due to war and floods. The main operations are currently the passenger services between Luanda (Mussequé) and suburban areas out as far as Viana (35 km); recently a service of four trains per week started from Luanda to Dondo (180 km).

The rail link with the port of Luanda is not currently operational. This contributes significantly to vehicular congestion in the downtown area of Luanda. CFL's terminal facilities and shunting yards in Luanda cover many hectares of developable land and constitute a major asset that might be used to finance the reestablishment of the port evacuation rail services.

Not surprisingly, CFL is not covering its operational costs. In 2001, its (unaudited) losses are understood to have reached more than kwanza 12 million.

### *The Benguela Railway*

The Benguela Railway—Companhia de Caminho de Ferro de Benguela, SARL (CFB), was Belgian-owned through a 99-year concession that expired in 2001. It is now formally state-owned. It has a total length of 1,340 km. The line starts from the port of Lobito, travels south to Benguela, then eastwards via Huambo (where the engine sheds are located), to Luau on the Democratic Republic of Congo border. Very little is serviceable. The Benguela Railway played an important role for the carriage of exports and imports to inland countries and Angola's central region during the third quarter of the 20th century.

Past damage to structures and permanent way and the continuing security problem have closed the international mineral and national freight traffic business to the central inland region of Huambo and Bié. At present, CFB operates four trains a day only on the Benguela to Lobito link (30 km), transporting mostly passengers (1.9 million in 2000), moves cargo only in the port of Lobito area (26,774 metric tons in 2000), and recently started the operation between St<sup>a</sup> Iria, Huambo, and Caala (96 km). Its revenues (based on current fares of 5 kz per passenger in the Lobito Benguela line), do not cover its operating costs. Unaudited losses amounted to kwanza 19.848 million in 2000.

### *The Moçamedes Railway*

The Moçamedes railway, Companhia de Caminho de Ferro de Moçamedes (CFM), is a state enterprise and comprises 987 km of track, running between Namibe and Menongue in the Cuando-Cubango province. There are two branches: Lubango-Chibia-Chiange (120 km) (now completely abandoned) and Dondo-Kassinga (110 km), also closed since the iron ore mines ceased operations in 1975. The mines produced more than 5 million metric tons a year between 1967 and 1974.

Currently, traffic is carried normally only between Namibe and Matala (320 km) via Lubango. CFM has managed to maintain a limited passenger and cargo service, carrying 200,000 passengers and 42,652 metric tons of cargo, during the first half of 2001.

Currently cargo freight rates are lower than that of road transport in ton/km. The railway plays an important role in the transport of essential goods to the Lubango plateau and of agricultural and quarry



products (granites and marbles) to the coast. The railway manages this with seven locomotives, 13 carriages, and 586 wagons. Its (unaudited) income is understood to roughly cover its daily operating costs.

CFM employs around 1,396 staff. As with other railways, it is experiencing a severe lack of trained personnel in all professional categories.

### Rolling Stock

The low percentage of rolling stock and motive power that are serviceable is shown in table 6.2. In many cases, the proportion of available rolling stock is likely to be overestimated.

### Railway Operating Performance

Recent operational and financial performance of the three railways is set out in table 6.3, below.

The three railway companies either do not cover or just cover their operating costs. Losses for Luanda in 2001 were approximately 13 million kwanza for Luanda and 43 million kwanza for Benguela, and 2 million kwanza for Moçamedes in the first half of 2001. In 2001, Benguela also received a government grant of approximately 52 million kwanza.

State subsidies have covered operational losses. According to former agreements with the government, tariff increases should occur every three months. Long-distance tariffs are not controlled, which permits the companies to increase fares when needed. Suburban tariffs are controlled and subject to authorization from the Ministry of Finance. On the Lobito–Benguela line, the train tariff is 5 kwanza (US\$ 0.1) while the bus tariff for the same distance is around 30 kwanza (US\$ 0.60).

		Luanda	Benguela	Moçamedes	Total
Locomotives	Existing	19	126	25	170
	Available	4	9	13	26
Carriages	Existing	85	39	25	149
	Available	4	13	13	30
Wagons	Existing	580	2,128	883	3,591
	Available	261	750	586	1,597

Source: Direcção Nacional dos Transportes Terrestres–Departamento dos Transportes Ferroviários.

	Luanda 2001	Benguela 2001	Moçamedes First half 2001
<b>Operations</b>			
Cargo (tons)	51,265	32,936	42,652
Cargo (1,000 tons/km)	5,787		9,383
Passengers	754,319	2,403,705	201,588
1,000 Passengers/km	26,901		18,738
Number of trains	2,829	5,026	513
<b>Financial</b>			
Sales (1,000 kz)	26,436	13,854	29,340
Net costs (1,000 kz)	39,072	–57,013	27,115
Profit/Loss (1,000 kz)	–12,636	–43,159	2,225
<b>Employment</b>			
Employees	799	1,840	1,396

Source: Company reports.

The government has not given regular authorization of price increases, especially on suburban lines. As a result, revenues remain well below operating costs.

This has resulted in increasingly difficult financial conditions for the railway companies. As the long-distance operations of the Benguela and Luanda railway companies have almost stopped, the railways depend increasingly on the suburban traffic at low tariffs and continue to lose ground, operationally and financially.

### *Investment Requirements in Railways Infrastructure and Operations*

There are enormous investment requirements in the three rail systems. Not only does the network require substantial rehabilitation as a result of prolonged disuse and war damage, but also rolling stock and motive power in many cases have exceeded their economic life.

There are similar constraints within the three railway systems. First, large sections of the network are now unusable due to damaged bridges and mined track. Second, large amounts of credit and technical assistance will be required to help maintain locomotives, upgrade rolling stock, and check electrical equipment. Third, there is lack of spare parts and special supplies such as lubricants that has resulted in low utilization patterns as equipment awaits repair and the premature scrapping of locomotives and rolling stock. Finally, track infrastructure is weak and many stations and supply points have been abandoned.

Short-term investment programs can be devised for all systems, though they are challenging because they are multifaceted. Even modest programs require engineering, management, technical, and planning inputs, which need careful coordination and synthesis. All these skills and the experience to execute these tasks are in critically short supply in Angola.

Within the scope of the Emergency Program (subsequent to the 2002 peace agreement) for the Repairing of Roads, Railways and other Infrastructures, the Council of Ministers Permanent Commission, during its 2nd Extraordinary Session of July 8, 2003, approved the “Program of Rehabilitation of Angola’s Railways” (“Expedient Rehabilitation”). This program aims at the recovery of Luanda’s railways tracks, between Zenza and Lucala (150 km), of the Moçamedes Railway in the trunks, Namibe–Lubango–Matala (424 km), as well

as the Benguela Railway, from Lobito to Luau (1,273 km), to be undertaken within a 24-month period.

The rehabilitation works of these 1,847 km includes the removal of mines, reconstruction and repairing of bridges (Luinha, Lucala, Bero, Giraúl, Cubal, Catumbela, and so on), and the acquisition of rolling stock material and other equipment. The work is being conducted by the railway enterprises themselves and subcontractors in agreement with the established program.

The works should allow the start of transport of bulk cargo (mainly fuel) between the ports and distribution centers in the hinterland and operation of limited passenger service.

The government has concluded the negotiation process with the Chinese Government for the opening of a credit line of US\$ 90 million, which is destined for the reconstruction of the railway trunk Bungo–Musseques–Baia (in Luanda’s Railway) and the railway network inside Luanda’s Port.

A rail and road integrated project is now being developed with a French company for the Lobito–Benguela connection, including the complete rehabilitation of the rail line.

Even if, in the short term, the private involvement in rail should be restricted to some rehabilitation works by contractors, this investment may keep the railways in operation until the concessioning process to private operators is carried through, which is indicated for 2005. The GOA is seeking international private and institutional financial support to proceed with these different projects.

### **PPI Opportunities in Railways**

The Angolan railway network is a large one and has played an important economic role in the past. In the expectation of substantial public investment in the railways, private parties have shown an interest in re-equipping and operating the three lines, albeit with substantial government support.

Because of the past security situation, the use of rail transport, and particularly passenger traffic, has been important for people of the railway hinterlands. Experience in other Sub-Saharan African countries shows that the improvement of roads and the consequential competition will challenge rail transportation in the

future. Railway transport, albeit socially priced, could continue to play a role among low-income populations. Railways (with subsidies) can play an important role in terms of the economic activity in the region and serve as an alternative to more expensive road transport in the movement of goods and people.

The government plans to offer rail services to the private sector under concession contracts in the medium term. In the short term, private involvement in rail will be restricted to some rehabilitation works by contractors. The Directorate of Land Transport is confident that this investment should keep the railways in operation until the concessions are offered later.

The concessioning of rail operations may start on suburban lines like the Luanda–Viana–Cacuaco and Benguela–Lobito rail lines, supported by subsidized pricing. For the Luanda region in particular, suburban rail transport may assume an important role for moving people in a city already overcrowded with private motor vehicles.

The government believes the long-distance lines—Luanda–Malange (supporting the whole diamond activity), the Lobito–Benguela–Huambo–Kuito corridor (supporting all the Central region reconstruction and development), and the Moçamedes line—are able to attract PPI in the medium term. Further studies are fundamental. Private sector participation will depend critically on the terms of entry.

A study (Angoferro) aiming at phased rehabilitation of the present rail lines and its development, considering the interconnections with the hinterland countries and between the three east–west national lines, constitutes an important framework for PPI involvement in rail services in Angola.

### **PPI Barriers in Railways**

Railways contributed enormously to the early settlement and development of many southern African countries. Originally virtual monopolies, railways were able to carry huge volumes of primary production, passenger, and commercial freight long distances at low costs. Railways are suitable for the carriage of low-value, high-volume traffic over long distances—hence their use in movement of bulk materials. Railways tend to cross-subsidize loss-making passenger traffic with profitable goods traffic. At present, there is virtually no

goods traffic in Angola, the operational network is a fraction of the actual network, and there is more competition for the available traffic.

Railways were typically constructed when there was no competition from road or air transport. The existence of rail access facilitated the exploitation of a number of primary industry activities—growing sugar, coffee, and cotton and mining iron ore and other minerals. War, capital flight, and the emigration of many of the managers of these industries together with the growth of other sources of supply in more stable (and more competitive) environments are all factors (in addition to the new modal competition) that will need to be taken into account in estimating future rail transport demand in Angola.

Not only is present traffic a fraction of the prewar levels, but also the rehabilitation costs of the railways are enormous. Destruction of part of the network, long periods of disuse, and obsolete rolling stock and motive power imply huge costs to rehabilitate railways without the assurance of the old traffic and the comfort of any newly identified traffic. Even railways in East Africa that are currently in use and have established revenues and traffic are experiencing difficulties in attracting PPI.

The development of road and air transport, the improvements in road vehicle technology, the competition in world commodity prices (which has altered the patterns of trade and demand in some goods), together with the declining investment (and hence reliability) of rail services, have all weakened the attractiveness and viability of some rail links. Major capital and operational commitments to the railways need to be considered in the context of the economics and prices of transport services offered by competing modes.

Recent PPI experience in the southern Africa rail sector shows that it is not easy to introduce. Network costs frequently remain for the government's account; liabilities of existing public rail companies often include substantial redundancy, pension, and retraining obligations that require financing as a precondition of PPI involvement; overseas operators are reluctant to commit substantial funds on capital expenses for infrastructure or equipment and then seek early renegotiations of obligations. Finally, PPI in railways frequently is dependent on substantial restructuring of existing state-owned enterprises, which requires time and firm political commitment to achieve.

Considering the huge investment thought to be needed for the three lines, including the suburban lines—a little more than US\$ 4 billion—the approaches need to be viewed with caution. However, even if the renewed road and highway system capabilities will compete strongly with rail, rail traffic still could have an important role in the development of hinterland economic activity, mainly mineral extraction and agriculture. The phased GOA approach for rail rehabilitation allows a commitment of funds, both public and private, according to demand needs.

### Ports—Sector Structure and Key Organizations

The National Directorate of the Merchant Marine and Ports, under the umbrella of the Ministry of Transport, is responsible for the supervision and regulation of the port activity.

### Legal and Regulatory Framework

In accordance with Law 5/02, of Delimitation of Economic Activities, port ownership is defined as an area of *absolute state reserve*, to be undertaken exclusively by the public sector. However, provision of port services is an area of *relative state reserve* and can be undertaken by non-state corporations or entities through temporary concession contracts. Concessions of port services are regulated by Decrees 52 and 53/97.

The Ministry of Transport formulates concession programs and the coordination of bidding with the port enterprises. The port authorities propose the concession contracts, but the final award remains with the Ministry of Transport.

### Ports Sector—Current Situation

The country's principal cargo ports are at Luanda, Lobito, Namibe, Soyo, and Cabinda. In the past they were used for exporting, but today they are principally used for imports. Due to the large value of oil and diamond exports, the trade in other goods is predominantly from imports. Together, the ports handled 4.8 million metric tons during 2001 (up from 3.6 million metric tons in 2000 and 3.0 million in 1999). Currently, these five ports trade at levels that appear to cover cash operating costs.

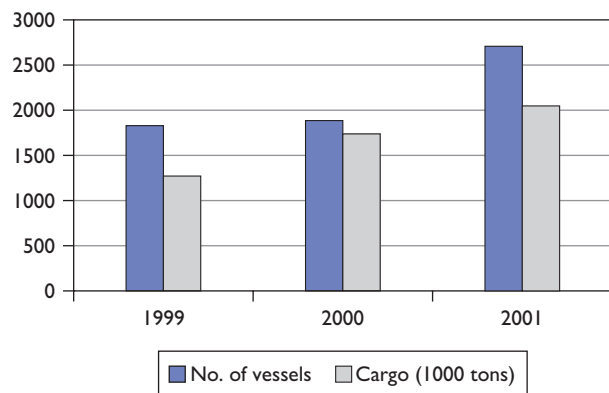
The Luanda port comprises 2,738 meters of quays and piers, with 17 berthing facilities, 19 warehouses of 55,500 m<sup>2</sup>, and a total land space of 792,219 m<sup>2</sup>. Depth alongside the main piers ranges from 10.5 to 12.5 meters and 3.5 to 5.5 meters alongside the cabotage quays. The port is well protected by the large bay of Luanda.

The traffic in the Luanda port has grown from 1.41 million metric tons in 1999, to 1.87 million in 2000 and 2.12 in 2001 (see figure 6.2, below), of which 0.25 million metric tons were exports and 1.86 metric tons were imports. The number of vessels calling at Luanda increased from 1,876 in 1999, to 1,891 in 2000, and 2,598 in 2001.

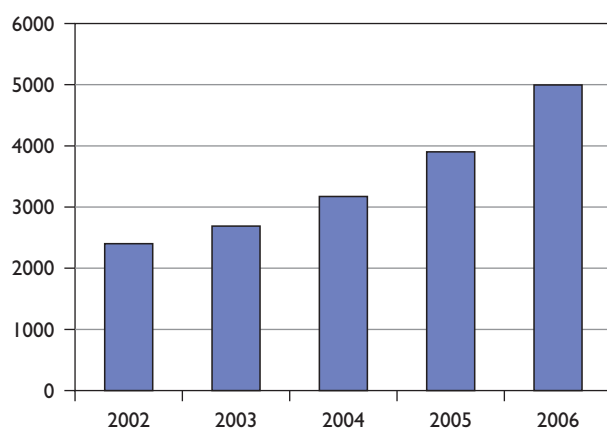
The Port of Luanda, a state company, is profitable; its revenues are comprised largely of concession rents from port operators. Besides the container, bulk, and general cargo berths, Sonangol, the state-owned oil company, operates an oil terminal adjacent to the port.

Delays in the loading and unloading, customs clearance, and movement of cargos at the port have been a persistent problem at Angolan ports. The concessioning of commercial operations of eight terminals in Luanda 10 years ago contributed to the port's improved performance, reducing ship turnaround delays to an average of 4.4 days for international ships and 2.7 days for domestic trade. Notwithstanding the concessioning that has occurred in the port of Luanda, port users and goods owners have complained at the time and expense of clearing goods through customs.

Figure 6.2 Port of Luanda Performance



Source: Port of Luanda.

**Figure 6.3 Port of Luanda Forecasts (1,000 metric tons)**

Source: Port of Luanda.

The Port of Luanda forecast an increase of the traffic from 2.1 million metric tons in 2001 to 5.0 million in 2006 (see figure 6.3, above). The forecast relies significantly on past trends rather than detailed estimates. In preparation for this growth, it has devised a US\$ 150 million investment plan for the next 10 years to improve the productivity of the port and provide for the increased traffic. It is currently in the process of inviting tenders to construct and operate these planned facilities.

The port at Cabinda in the north of the country has severe operational limitations for large vessels and will require dredging and major rehabilitation works in

berthing facilities, warehouses, and pavements. It is important to mention that the Port of Malongo in Cabinda that CABGOC manage handles important freight volumes and is the main support to the oil-exporting activity for the whole offshore of Cabinda. Demand for port services is understood to be well within capacity at each of the other Angolan ports. Table 6.4 presents the Angolan ports' operating and financial statistics.

### PPI Opportunities in Ports

More than 95 percent of Angolan imports are now cleared through seaports. In Angola, as elsewhere (see box 6.2), there are private sector opportunities to develop this trade. With the cessation of hostilities and Angola's prospective reconstruction and economic development, the demands placed on port facilities are expected to increase in the short term. In the longer term, the reestablishment of the major extractive and agricultural industries may add to the demands on port facilities, although export substitution could lead to a trend in the opposite direction.

The private sector already has played an important role delivering improved efficiency in the Port of Luanda, which handles more than 70 percent of total cargo, being the main entry point supplying the whole country and particularly the northern provinces.

**Table 6.4 Operating and Financial Statistics of Angolan Ports, 2001**

	Luanda	Lobito	Namibe	Soyo	Cabinda	Total
General Cargo ( <sup>'000</sup> metric tons)	2,120	754	151	33	38	<b>3,096</b>
Container Cargo ( <sup>'000</sup> metric tons)	1,225	89	43	10	9	<b>1,376</b>
Bulk Cereals ( <sup>'000</sup> metric tons)	79	129	91			<b>299</b>
<b>Total</b>	<b>3,424</b>	<b>972</b>	<b>285</b>	<b>43</b>	<b>47</b>	<b>4,771</b>
Vessels [(in+out)/2]	2,595	631	261	809	231	<b>4,527</b>
Sales (kz '000)	382,382	190,554	62,455	23,936	33,988	
Sales (US\$ '000)	9,693	4,839	1,766	607	863	
Net Costs (kz '000)	301,289	177,647	61,760	23,687	24,967	
Net Costs (US\$ '000)	7,650	4,509	1,201	601	634	

Source: Ministry of Transport.

### Box 6.2 Recent Trends in Private Participation in Port Facilities

The private sector became increasingly involved in the operation of common-user port facilities during the 1990s, following public sector dominance of the sector since the 1940s. Between 1990 and 1998, 112 port projects with private participation reached financial closure in 28 developing countries, with investment commitments totaling more than US\$ 9 billion. This trend is expected to continue.

The shift toward PPI has been driven by two factors:

- The strong growth in world trade has led captive port users to demand improved efficiency, reduced port user fees, and expanded facilities from port authorities. Many public port authorities, however, have achieved only limited success in improving labor and other practices to increase the productivity and efficiency of existing installations.
- Economies of scale in cargo shipment have led to the emergence of a few global players in shipping, able to control the allocation of transshipment business to strategically located, well-equipped, and efficiently managed hub ports. To stay competitive, port authorities have to upgrade facilities. But with larger ships, the advance of containerization, and sophisticated cargo information systems, the investment required has often gone beyond the financial and managerial capacities of public port authorities.

Long-term concession contracts involving private operation and management and significant private investment in existing public assets have been the most common arrangements; in most cases, land ownership has remained with the public port authority. Private investment has fostered the rehabilitation of terminals and the renewal of superstructure, such as cranes and yard equipment.

In most projects the new private port operators have taken on significant investment obligations for expansion and modernization of existing facilities (commonly buildings and equipment), assuming full commercial risks for the facilities. With few exceptions, the public port authorities have retained obligations for investment in berths and breakwater facilities and maintenance of access channels. Three-fourths of the 112 projects are operations and management contracts with significant capital expenditure for existing facilities (49 projects) or greenfield development (35).

Most transactions to date have taken place in Latin America and East Asia. Mozambique and Kenya have awarded private contracts for port operations. Mozambique awarded lease contracts for Maputo coal terminals in 1993 and container terminals in 1996. Kenya entered into a management contract for a container facility with an international operator in 1996 that was later cancelled. But in 1998, a consortium invested in the development of a grain and fertilizer terminal at the port of Mombasa.

The commercial operations, which began in Luanda 10 years ago, are carried out by a number of specialist operators, both private and public. They include Cabotang, Angonave, Intercomercial, Secil Maritima, Unicargas, Intertransit, SGEP, and SONILS. Some initiatives have already been taken for the construction of a new port for containers in the Cacuco area (20 km north of Luanda). This will make it possible to release 90 percent of the freight currently processed through the Port of Luanda.

Currently under way is the reassignment of the port into four concession areas, namely, general cargo, multipurpose (including bulk), containers, and support to oil companies. It is expected that the oil services terminal will remain with the incumbent operator (SONILS) and a new concession contract will be negotiated with one of the present operators (Unicargas) for the multipurpose terminal. More than 10 pre-qualified bidders have shown an interest in the concessions for the construction and operation of the general cargo and container terminals.

The objectives of the new PPI are focused mainly on improving the existing infrastructure and equipment, extending warehouse facilities, providing more client-oriented services, and improving productivity. Under the new concessioning arrangements, new operators are understood to be required to invest around US\$ 83 million in new equipment and rehabilitation of facilities. Concession periods have also been redefined to 20 years.

The main criteria for evaluating tenders are understood to be the level of tariffs, a fixed rent element, a variable rent element (according to volumes of cargo), and the scale and specification of investments committed by the concessionaires. It has not been revealed what risk transfer is included in the concession contract. However, it is expected that the new phase of concessioning will be largely completed by 2005.

The government expects that the Luanda concessioning system could be extended to other Angolan ports as and when required, such as Lobito, Namibe, Cabinda, and Soyo.

Cabinda rehabilitation is included in the program of emergency repair and reconstruction of ports and should be carried out as a part of an agreement with a private port operator. Investment estimates for 2003



are of US\$ 6 million, to be financed by the state and the petroleum companies involved.

In theory, commercialization or privatization of the port assets in addition to the private participation in port operation could attract investment and increase efficiency. But considering the present legal framework that limits ownership to the public domain, it does not seem that the GOA will assume the necessary legal adjustments to allow full privatization of port assets.

### PPI Barriers in Ports

As indicated above, the private and commercial sectors already play an important operational role in the port of Luanda. Concessions has already improved its productivity and efficiency.

According to information provided by the port of Luanda, most of the current delays in port operations are related to importers' financial constraints. Importers typically hold goods at the port warehouses until payment has been made; the importer pays port fees and import duties only after payment is received from the customer. These delays create shortages of warehouse space and parking space for containers. Importers' financing constraints, therefore, increase port costs and could discourage private operations in ports.

Besides the shortage of warehouse space, related to the congestion and delay in clearing goods, the port of Luanda's location in the midst of the urban area will impose some constraints on its growth in the long term. This may require the port authorities to adopt a new site for specialized cargos north of the present site. This may also represent a major PPI opportunity in the longer term.

At present all goods enter and leave the port by road because the rail link is inoperable. In common with many urban roads, the road is heavily trafficked and in poor condition. Once again, the redevelopment of the rail link will have the effect of reducing the congestion currently experienced and improving the environmental conditions in the immediate area. PPI in this 20 km section to Viana will probably be linked with the redevelopment of the major CFL marshalling yards in central Luanda. Again, this current obstacle may become an opportunity in the longer term.

### Airports—Sector Structure and Key Organizations

The National Directorate of Civil Aviation is the regulatory body for air transport supporting the Ministry of Transport in the definition of policies, particularly for the use of air space and airports.

Ownership and management of most airports and control of airspace are the responsibility of the National Airport and Air Navigation Development company (ENANA), formed in 1980. ENANA's basic activities are to ensure an adequate network of airports and to provide and operate the basic facilities at each airport site.

ENANA is also responsible for the provision of airport safety services needed by the operators, especially radio beacons and navigational assistance. Finally, it must maintain satisfactory and safe air traffic control over Angolan airspace.

### Legal and Regulatory Framework

In accordance with Law 05/02, of Delimitation of the Sectors of Economic Activities, airport ownership (understood to include terminals) is defined as an area of *absolute state reserve*, to be conducted exclusively by the public sector. However, provision of airport services is a *relative state reserve* and can be undertaken by non-state corporations or entities through temporary concession contracts.

### Airports Sector—Current Situation

ENANA manages 18 airports and the air navigation services for all the airports; seven more are under the control of provincial governments, mining companies operate five others, and six are used by the air force. Details are set out in table 6.5.

With the exception of Luanda, most airports were built in the 1960s to meet the modest aviation needs of that decade. Aircraft were slow and of medium size, the Douglas DC3 being a representative type. Since independence, the rapid and persistent growth in demand for aviation has not been accompanied by matching investment in air infrastructure. Facilities generally trail the demand for them.

Typically, runways constrain airport capacities; they are too short, have poor geometry for modern craft,

**Table 6.5 Main Airport Network**

Category	Paved	Earth
<b>ENANA</b>		
Main national airport	Luanda	
Secondary national airports	Benguela, Cabinda, Huambo, Lubango, Luena	
Regional Airports	Dundo, Kuito, Malange, M'Banza Congo, Menongue, Namibe, Ondjiva, Saurimo, Soyo, Sumbe, Uíge	
Local Airports		Ambriz, Andulo, Damba, Jamba, Kangamba, Luau, Nzeto, Porto Amboim, Wako Kungo
<b>Privately managed Airports</b>	Capanda	Lucapa, Catoca, Gove, Nzaj
<b>Military Airports</b>	Lobito, Cabo Ledo, Ngage, Cahama, Changongo, Catumbela	

Source: ENANA.

and possess rough surfaces and weak subbases. Accordingly, Boeing 737s cannot operate over the full network and cannot use high-pressure tires for risk of runway damage through impact loadings. The more expensive low-pressure tires wear more rapidly on rough runway surfaces and consequently have shorter lives, which leads to higher operating costs.

During 2000, Luanda Airport handled 1,405,125 departing passengers (362,129 international and 1,038,495 domestic) and 478,305 metric tons of cargo (32,163 international and 446,142 domestic). Landings were 25,910 (4,017 international and 21,893 domestic); 100 aircraft were regularly using the parking space designed for 18 aircraft.

The picture painted by these statistics shows a high demand level for airport services. The cessation in hostilities,

with the consequent reduced dependency on air transport, has resulted in a fall in traffic of around 35 percent. A similar sized and populated southern African country, in a state of peace and without the oil-based economy, would not be likely to experience even these levels of traffic. However, demand for future air transport will be determined by the pace at which the economy normalizes as well as the nature of the medium-term economic development of the country and the development of competing transport modes, especially roads.

The 10 provincial airports listed in table 6.6 handled 438,808 passengers, 138,138 metric tons of cargo, and 56,228 landings in 2000. Passenger and cargo terminals as well as parking space are currently recognized as overcrowded, and even if the runways are considered large enough, taxiing facilities limit the traffic.

**Table 6.6 Airport Passengers and Cargo Traffic, 2000**

	Passengers (No.)	Cargo (Tons)	Aircraft (Landings)
<b>Luanda Total</b>	<b>1,405,125</b>	<b>478,305</b>	<b>25,910</b>
International	362,129	32,163	4,017
Transit	4,501		
Domestic	1,038,495	446,142	21,893
Benguela	75,887	5,962	8,287
Cabinda	87,214	2,036	14,022
Huambo	61,843	74,408	9,610
Lubango	108,991	4,742	7,576
Kuito	5,102	10,809	4,520
Luena	26,264	15,011	4,688
Malange	21,264	1,772	1,496
Menongue	16,548	17,524	3,088
Namibe	18,936	3,821	1,597
Ondjiva	16,759	3,045	1,344
<b>Total Provincial Airports</b>	<b>438,808</b>	<b>138,138</b>	<b>6,228</b>

Source: ENANA.

However, in the domestic sector, traffic inquiries to provincial airports already showed a marked decrease in both passengers and cargo in 2002, some air companies having already ceased their activity. Experience from other postconflict countries, such as Mozambique, shows that with the opening of land transport facilities, domestic air transport drops dramatically.

Due to the weak security situation, passenger and cargo aircraft played an important role in supplying the hinterland areas not accessible by road or rail, with basic consumption goods, such as food, building materials, or fuel. These circumstances make traffic forecasts in peacetime very difficult. The rehabilitation of main surface traffic infrastructures will progressively create alternatives at lower costs.

The impact of years of conflict has been that facilities and management at airport sites are generally weak and sometimes inadequate. With the lack of refueling systems, there are additional flight fuel loads, thus reducing payloads. Few airports control cargo weight adequately (due to a lack of scales and trained personnel), which can result in overloaded, dangerous takeoffs and landings. Passenger facilities of every type are poor and levels of comfort and security minimal.

ENANA employs over 1,400 workers. Secondary national airports typically employ between 10 and 20 ENANA staff, while other categories have frequently fewer than five personnel. Over half the staff is engaged in various cleaning activities, and turnover in this category is high, despite the prevailing low Angolan employment rates.

We understand that ENANA's financial condition is not healthy, even if the company earns a significant amount of foreign exchange from international carriers and currently covers its operating costs.

ENANA has prepared preliminary traffic forecasts, estimates of rehabilitation costs, and revenue projections. Their program for the development of civil aviation facilities in six airports is US\$ 45 million. This does not include a new aerial navigation system that is expected to cost US\$ 35 million. Emergency rehabilitation costs are US\$ 36 million for the airports of Luena, Huambo, Negage, Uíge, Ondjiva, Saurimo, Kuito, Lobito, and Menongue.

According to the National Development Plan of the Airports Network, 2 million passengers for Luanda and 580,000 for provincial airports are forecast by 2005.

However, traffic forecasts, particularly for domestic traffic, are difficult. With the improvement of the security situation and the rehabilitation of land infrastructure, transport of passengers and goods tend to use roads and rail when they are available.

It is expected that air transport will continue to play an important, if moderated, role in Angola. Present levels of demand may increase in the regional and intercontinental segments, particularly for passengers, as present land alternatives are not directly comparable.

### PPI Opportunities in Airports

PPI opportunities in airports are attractive in those parts of the activity that can earn foreign currency, as experience elsewhere shows (see box 6.3). Some of Luanda Airport's services are already concessioned to private operators. The airport authority has concessioned cleaning, security, parking, and duty-free shops; the national carrier TAAG (*Linhas Aéreas de Angola*), baggage handling and catering.

Despite uncertainties about traffic volumes, the government is seriously considering extension of runway facilities and rehabilitation investment and operations by private investors under concessions contracts, particularly for the airports with large traffic volumes.

The GOA and ENANA are also studying the alternative of building a new airport in Luanda, as the present airport is crowded, located in an urban area, and has limited expansion conditions. For this project strong private sector participation is considered, through concessioning, on a BOT basis, of the different activities or terminals. This extension and rehabilitation will involve building a new taxiway, expansion of the parking facilities, and renovation of the passenger and cargo terminals.

Private operators (mainly mining companies) are already operating six local airports, mostly without a formal arrangement with ENANA. Recognizing the need for the rehabilitation of the runways and terminal areas of all provincial airports, the government is also considering the possible involvement of private investors for the operations of these airports.

Concessioning Luanda will be an important experience that could be used in the future, particularly for the larger domestic airports, as an example to attract private operators (Huambo, Benguela, Cabinda, and Lubango).

### Box 6.3 Recent Trends in Private Participation in the Airport Sector

During the 1990s, private sponsors participated in projects involving 89 airports in 23 developing countries, with investment totaling US\$ 5.4 billion.

Private sector participation has been spurred by the growth in air transport and airport revenues, which are denominated largely in foreign currency, and operational costs, mostly in local currency. This provides a hedge against currency risk, facilitating project financing.

Most projects have involved building terminal and runway facilities. Terminals offer potentially large “nonaeronautical” revenues. While aeronautical or traffic revenues originate from passenger fees, aircraft landing and parking fees, and cargo and luggage handling fees, nonaeronautical revenues come from commercial services. Since airports have been seen as facing only limited competition from other airports and transport modes, traffic fees have generally been subject to price regulation. By contrast, nonaeronautical activities offer unregulated, often large revenue streams, which are highly attractive to private sponsors. Concession fees from these activities often accrue to private airport operators. Except for projects implemented in Africa in the early 1990s, all airport projects involving terminals have granted private sponsors the right to raise revenue by selling concessions for commercial activities (such as restaurants, parking facilities, and duty-free shops). On average, these projects derive about half their revenue from non-aeronautical services.

Private participation in airports has been concentrated in three regions: Latin America and the Caribbean, East Asia and the Pacific, and Europe and Central Asia. Although public provision of airport facilities and services remains dominant, the prospects are strong for growth in private participation in airports. The steady expansion in air transport combined with the revenue security and limited competition in the sector can be expected to continue to attract private participation in airport projects. Several countries, notably in Latin America, have announced plans to carry out projects in the near future.

### PPI Barriers in Airports

The government considers PPI in airport services under concession contracts an important way to mobilize funds needed for airport rehabilitation in

Angola. However, PPI is possible for the majority of airports for profitable private operation, if their operations are related directly with private economic activities, as is the case for some mines or the Capanda dam.

Airports are important transport modal interchanges. They have many of the characteristics of natural monopolies with all the implications for low efficiency and high pricing.

They have the capacity to generate substantial private rents for incumbent owners and operators provided there are adequate traffic volumes. Even if in postconflict Angola, it is likely that air traffic volumes may decline before they start to increase again; some of the airports will still keep important traffic in regional terms. Properly executed, PPI can avoid many of the costs and delays to all the airport user groups.

Airport authorities can introduce competition for the market in airport terminal operations by adopting the landlord ownership structure used in ports. Efficiency is achieved by bidding out well-structured concession contracts.

A distinction must be made between the government granting exclusive concessions or licenses (with significant market power) to the private sector on the one hand and government procurement of activities that cannot be cost-effectively undertaken by the public sector.

The principal obstacles to the introduction of PPI in the airports sector (to include international bidders) relate to the degree to which the incumbent public owners are able and prepared to transfer responsibility to the private sector and the terms and conditions attached to that transfer. The reluctance of state-owned enterprises to transfer or cede control of the provision of services perceived as “public,” “essential,” or “strategic,” especially in Africa, is widely recognized.

#### Note

1. CFL Annual Report, 2001.

# 7

## Telecommunications

### Scope of Sector

The telecommunications sector in Angola, as in many other countries, is at the forefront of private sector involvement, compared to other infrastructure sectors. Nevertheless, the sector's liberalization has experienced certain difficulties and has not proceeded as fast as might have been initially planned. The major PPI development has been the introduction of a private, competing mobile service provider, but the growth of connections has been hindered by problems, which are partly due to the sector's structure and partly due to the general difficulties of investment in Angola. A more recent development has been the issuing of four new fixed line licenses to private operators. Concerning Angola Telecom privatization, the GOA has taken some actions, such as the diagnosis of the basic network, the study for the economic and financial restructuring of Angola Telecom, the recent appointment of a committee to study the action plan to implement the incumbent's privatization, and the preparation of a performance contract.

The telecommunications sector in Angola is under the Ministério dos Correios e Telecomunicações (MCT) (Ministry of Posts and Telecommunications), set up in 1997, when the Government of Unity and National Reconciliation (GURN) was sworn in. The MCT deals with policies and strategies both for post and telecommunications. The CFR study covers the infrastructure for fixed line, mobile, Internet, and data networks, and their interconnections. Other value-added services and postal services are not covered.

At the time of Angola's independence (November 11, 1975), the PTT ran posts and domestic telecommunications (local and intertoll). A Portuguese company, CPRM (Marconi), operated international telecommunications. The latter was nationalized in 1977 under the new name EPTTEL. In 1980, PTT was restructured into two separate entities: Empresa Nacional de Correios e Telégrafos (ENCT) (Post and Telegraph Company) and Empresa Nacional de Telecomunicações (ENATEL) (Telecommunications Company). The latter operated only domestic telecommunications. Legislation passed in 1992 led to the formation of Angola Telecom (AT), after the merger between EPTTEL and ENATEL.

AT had the monopoly of the telecommunications market (fixed and mobile) up to April 2001, when Unitel started its mobile operation.

During 1997, the sector started the first steps of a process for the definition of a new telecommunications policy, which ended up with the approval of the Cabinet's Permanent Commission *Telecommunications White Paper* (WP) in June 2001.

The liberalization process was started, aiming at making a clear distinction among the main sector players: policymaker, regulator, and operators. Other major aims were AT restructuring and privatization, the establishment of the regulator INACOM, and the opening of the sector to competing private service providers.

Earlier, the cabinet had passed Decree 18/97 (27 March) allowing the liberalization of complementary services and value-added services. The decree stated that any license, for both fixed and cellular

complementary services, should be the outcome of a public tender process, under the responsibility of the cabinet for the cellular and MCT for the fixed services.

Decree 18/97 was later amended by Decree 9/99 (4 June), with provisions, which allowed, under specific conditions, that a license could be issued without any competitive bid.

Cabinet Resolution no. 12/00 (19 May) awarded a cellular license to the private operator, Unitel, without any competition.

In 2001, the GOA authorized INACOM to open a competitive bid for the award of up to four licenses for the provision of fixed public telecommunications services, with some restrictions. Licensees shall not be allowed to operate mobile services. Five companies were selected during the pre-qualification phase. Only four submitted proposals for the qualification phase and were finally licensed. One of the companies, Multitel, decided not to apply for the qualification phase. However, this company is keeping a previous license and is competing with the four newly licensed operators in various services and resources (radio frequency). Such a fact does not configure a fully transparent process.

The GOA's economic and social program for 1998–2000 included AT privatization. This is reiterated in Decree 74/01, dated 12 October, dealing with the GOA's privatization policy for 2001–2005. However, an AT privatization process has not yet seriously commenced.

In support of the policies defined in the white paper, the GOA implemented two important studies: a survey and diagnosis of the existing basic network, and identification of the main activities to financially restructure AT. The GOA intended to identify the obstacles to a smooth development of its liberalization policies posed by the limitations of the existing basic network.

Meanwhile, a performance contract has been under negotiation between AT and MCT. It will be signed by AT, MCT, and the Ministry of Finance, covering various issues including the AT restructuring. The AT core business should deal mainly with the basic network; all the other services are to be operated by separate entities.

It is foreseen that, between 2003 and 2004, AT will negotiate two strategic alliances: one for mobile and another for fixed services, and a domestic transmission backbone network.

## Key Organizations and Sector Structure

The Ministry of Post and Telecommunications (MCT) supervises the sector at the political level. The National Directorate for Telecommunications (DNT), an executive body within MCT, assists the Minister in formulating the sector policies. DNT functions and responsibilities are defined in the Telecom Act and in Decree 2/98 (16 January). The latter covers MCT statutes.

The regulatory body, Instituto Angolano das Comunicações (INACOM) (Angolan Institute for Communications), reports to MCT. Its functions are described in the Telecom Act, MCT statutes, and INACOM's own statutes (Decree 19/99, 25 June). However, there are a number of gray areas and overlap between INACOM and DNT functions; in effect, both INACOM and DNT have regulatory functions for the sector. This is the origin of some conflicts, which the Minister arbitrates. Table 7.1, taken from the Telecommunications Act, shows a number of examples.

**DNT** is a department within MCT. Its role is to advise the MCT on sector policies. It can initiate policy discussions, but it generally acts at the request of the Minister. DNT mostly provides technical support to regulation of the sector. It also monitors performance (compliance with licenses) and collects and reviews information on sector performance.

**INACOM** was set up in 1999 as a public institution. While intended to be an independent regulator, in reality it only has a limited measure of autonomy:

- The director general is appointed by the Minister and can be dismissed for any reason.
- The Ministry has influenced staff appointments. INACOM has insufficient skilled staff to cover its main areas of required competence.
- Funding is partly dependent on the state approval for fees (although INACOM's fee income is sufficient).
- Too many ministries are involved in sector policy. Apart from MCT, there are also the Ministries of Social Communication, Computers, and Science and Technology.
- INACOM's Board of Directors has not yet been appointed.

INACOM's role is to manage and monitor the radio electric spectrum, license, and control emitting centers



**Table 7.1 | Telecommunications Act**

Functions of the two regulatory bodies	
Article 6—DNT	Article 7—INACOM
<ul style="list-style-type: none"> <li>d) Manage radio electric spectrum and orbital positions and monitor its utilization</li> <li>e) Standardize and approve telecommunications equipments and materials and define conditions for their connection to public telecommunications networks</li> <li>f) Award licenses, concessions, authorize or cancel setting up and operation of networks for telecommunications services</li> </ul>	<ul style="list-style-type: none"> <li>a) Manage and monitor radio electric spectrum and orbital positions</li> <li>d) Award licenses or concessions for the operation of networks for telecommunications services, under the rules defined by the telecommunications authority</li> <li>g) Standardize and approve telecommunications equipment and materials and define the conditions for their operation within National Telecommunications System</li> </ul>

(radio and TV broadcast), supervise quality and prices of public services, issue licenses to private network systems, supervise the opening of the market to competition, run tenders for licenses, promote increased coverage of telecom services, and monitor service standards and obligations in licenses and concessions.

#### *Operators and Service Providers*

The state-owned monopoly service provider dominates the sector, but a range of new entrants providing a variety of services is increasingly exploiting the opportunities in new technologies.

**Angola Telecom (AT)**, the incumbent operator, is the original monopoly service provider and still the dominant player. It operates across the whole sector, but its main activities are fixed line telephone, international connections, and mobile. It has a nominal share capital equivalent to US\$ 200 million. AT has shares in the following subsidiary companies:

- Movitel (99 percent AT and 1 percent ENCT), for mobile services. Movitel is already operating following the recent transfer of AT's mobile business into it.
- TV Cabo (cable TV—50 percent AT and 50 percent Grupo Visabeira Portugal) for multimedia services, mainly supported by a fiber optic infrastructure.
- Multitel (50 percent AT and 50 percent Portugal Telecom) for Internet and data communications equipment and services.
- ELTA, telephone directories (partners: AT, Directel Portugal and Angola Data Services).
- BCI Bank (shareholders are GOA plus 9 SOEs. AT holds 1 percent of share capital).
- A number of very small holdings: INTELSAT (AT 0.23 percent); SKY NEWS, NV (AT 0.2 percent); RASCOM (AT 0.5 percent); SAT3 (AT 3.75 percent); COLUMBUS (0.45 percent).

**Unitel**, a GSM mobile operator (Portugal Telecom 25 percent, Mercury 25 percent and Angolan private shareholders 50 percent). The share capital, originally subscribed in its statutes (20 April 1998) in kwanza, is now equivalent to less than US\$ 100.

**Multitel**, managed by Portugal Telecom, offers data telecommunications services to local companies.

**Mercury**, a company fully owned by the Sonangol group, set up in 1999, holds a license to provide corporate telecom services within the group. Currently Mercury is providing some public services.

**Internet (ISPs):** There are 20 licensees but only 5 are operating: Netangola (Sistec), Multitel, Ebonet (Pacom), Snet (NCR), and Mercury.

**DINATEL** operates the GOA administrative telecommunications services.

**ITEL** or Instituto de Telecomunicações (Telecommunications Institute) is a telecommunications training center, administratively reporting to MCT but effectively to the Ministry of Education. ITEL holds an authorization as an Internet backbone provider, but is not yet operating the service.

**FADCOM**—Telecommunications Fund, related to universal service/access. It has not yet been established and therefore is not yet subject to regulation.

#### **Legal and Regulatory Framework**

A specific law (the Telecommunications Act), other general legislation, and a number of regulations and rules govern private sector participation in the telecommunications sector.

One important factor for PPI is the perception that investors may have regarding the real independence of the judiciary power. Given the involvement of the dominant state-owned companies (AT and Sonangol)

in most activities in the sector as well as the role of private Angolan shareholders, potential new investors might be cautious if they were uncertain about the process for resolution of disputes that could arise over future contracts.

### General Legislation

The main items of general legislation concerning PPI in telecommunications are:

**Law of delimitation of the sectors of economic activity (05/02)**, which defines the areas in telecommunications open to PPI and those reserved to the GOA:

- Infrastructure, which is an integral part of the “basic” telecommunications network, is the GOA’s absolute reserve (full state monopoly).
- Local networks, when an extension to the basic network, are part of the state’s controlled reserve (only for SOEs or companies with a majority GOA stake).
- Infrastructures not included in the basic network, as well as corresponding telecommunications services, are part of relative reserve (private companies under concession).

Laws dealing with privatization and foreign investment do not have any specific telecommunications elements and are described in chapter 3.

**Labour Law (02/00):** This law is not fully regulated. It poses some difficulties concerning efficient manpower deployment. It is well known that all the SOEs have far more employees than the economically viable levels. If SOEs are privatized, it will not be easy to reduce the size of the workforce. The problem of excess labor resources is also an issue in the private sector. Large-scale redundancies could create serious political and public repercussions for the firm.

### Sector Legislation

The specific legal and regulatory framework for telecommunications is set out in the sector law and two recently issued regulations, supplemented by the statutes of key organizations and a number of rules issued by the regulator.

**Telecommunications Act (08/01—11 May 2001):** This is the main law for the sector and includes the following restrictions for PPI:

- A majority share of foreign private capital is not allowed in all the public telecommunications and

value-added operators (Article 18, foreign companies not allowed to own more than 50 percent).

- Only the incumbent operator can run a nationwide public switched network, for fixed services (“basic network”).

This law also establishes the basis for the Universal Service Fund (FADCOM), although it is not yet operational.

There are two types of authorization for public services provision: concession and license. In areas that constitute the GOA’s relative reserve, a concession is awarded by the government to a public or private entity for the provision of nationwide public services, under a contract for a given period of time and without exclusivity. Licenses are issued by the sector minister or, following his delegation, by the regulator (INACOM).

**Ministry of Posts and Telecommunications Statutes:** These set out the objectives, functions, and the various bodies within or under the ministry. Important entities for the telecommunications sector are: Direcção Nacional de Telecomunicações (DNT); Instituto Angolano das Comunicações (regulator) (INACOM); Instituto de Telecomunicações (ITEL); and FADCOM.

**INACOM statutes** (Decree 12/99): The management should include a board of directors and a director general. So far only the director general has been appointed. Some of INACOM’s decisions are clearly politically influenced.

**Telecommunications White Paper (WP):** This document does not have the same legal force as other legal documents because, although the Cabinet’s permanent commission approved it, it was not published in the *Official Gazette*. However, sector policies are closely related to the WP contents.

**Rules for access to and provision of public telecommunications services** (Decree 44/02—6 September) defines the terms and conditions to set up, manage, and operate infrastructure and provision of telecommunications public services. AT should be issued with appropriate concessions and licenses for basic and all other services provided by AT within 180 days after this decree comes into force.

This decree defines:

- “Support services to public telecommunications networks” as the provision of transmission or

interconnection resources to “transport” transit traffic from/to other public telecommunications networks.

- “Nationwide fixed telephony services” as the provision of voice telecommunications services with nationwide coverage to residential and corporate clients.

In article 8.1, the decree states that “fixed nationwide telephony services” and “support services to public telecommunications networks” are reserved to the incumbent operator.

**Rules applicable to public telecommunications services** (Decree 45/02) sets out the rules and conditions that govern contractual relations between operators and customers, aiming to provide appropriate telecommunications services to all the citizens of Angola (universal service).

**Price regulation:** This regulation should determine the rules to be complied with by the operators when setting their prices. It is based upon the “price cap” model. The cabinet approved it after public consultation.

**Interconnection regulation:** INACOM prepared a draft of this document and later the cabinet approved it after public consultation.

**Numbering Plan:** INACOM is now taking over the responsibility to develop the national telephone numbering plan. A draft has been submitted to all the operators and is under discussion.

There has been an absence of full coordination among the various laws and regulations, with respect to the telecommunications sector. A consequence of this is that it is unclear as to which services are left to the newly licensed, public, fixed line operators. One of the reasons for this is the manner in which the regulatory framework has evolved.

It is important to point out the following sequence of events in an ascending order, by date:

- Approval by GOA of the **Terms of Reference** for the public, fixed line operators’ competition (Executive Decree 12/01—30 March 2001).
- Enactment of the **Telecommunications Act (08/01—11 May 2001)**, which revoked legal support to the terms of reference.
- Launch of the competition (17 May 2001) with revised terms of reference.
- Enactment of the **Law of delimitation of the sectors of economic activity (05/02—16 April**

**2002)**. This law invalidated some of the assumptions in the revised terms of reference.

- Issuing of **Rules for access to and provision of public telecommunications services (Decree 44/02—6 September 2002)**, which states that “fixed nationwide telephony services” and “support services to public telecommunications networks” are reserved to the incumbent operator.

In contrast to the original terms of reference, the latter decree is far more restrictive than expected with respect to the spectrum of services left to the new entrants.

The concepts of basic network, fixed nationwide telephony services, and support services to public telecommunications networks, and the corresponding role of the GOA towards it, should be clarified and revised to remove uncertainty about which activities the private operators are permitted to carry out and to improve the possibilities for real competition in the development of the voice fixed services market segment.

### Current Situation in the Sector

The current situation in the sector is described in terms of the current market and forecasts, the status of privatization of the incumbent AT, the fixed line and mobile business participants, and new entrants to the sector.

The provision of telecommunication services is at a low level but growing, despite many difficulties in funding, provision of equipment, and skilled personnel. The incumbent AT is a highly dominant monopoly provider in many areas, although there is already one private mobile operator and four new local, fixed line service providers.

There is a clear commitment to liberalization and full market liberalization may occur before the end of the decade. Some laws need to be adapted to facilitate PPI. The telecommunications sector is the only one with a white paper and a specific regulator in place (although water and electricity sectors have strategy papers), and the electricity regulator is expected to be functioning soon. Liberalization started before a strong regulator was in place. Now INACOM faces some political interference and a lack of skilled staff that hinder its attempts to become more independent.

The incumbent operator has not yet been fully prepared for the liberalization of the sector. AT should become a commercial company with public capital. In

the future, AT (basic services) will face strong competition, not only from other fixed line operators, but also from mobile services. In the mobile segment, Unitel has not yet brought real competition. Both AT and Unitel mobile networks remain saturated for long periods of time. Shortage of capital and capacity, as well as service differentiation, are limiting competition.

Costs and prices are high. The poor educational system, high cost of transportation, and low quality of public electricity infrastructures impact on high costs for the telecommunications operators. The very high price of the handsets restricts access to people with a relatively high income. This situation could be modified with the award of at least one more cellular license, in a competitive bid, to stimulate PPI and demonstrate political transparency and real commitment to privatization and competition.

#### Market Development and Forecasts

The current provision of service level is low but growing quite fast, although constrained by financial and other limitations.

Based on the development of service provision up to 2000, a market (fixed and mobile) forecast was prepared using various methodologies such as the conventional top-down models, logistic curve analysis (for mobile), and the correlation (linear and exponential) between GNP per capita and teledensity. The forecast, included in the White Paper, is shown in table 7.2, below.

Compared to other SADC countries (see table 7.3) and using projections of typical teledensities relative to income levels, Angola's teledensity should have been

3.03 (with linear regression) or 1.71 (exponential regression) in 2001. This means that Angola should have had between 2.5 and 5 times (depending on the regression method used for comparison) more subscriber lines than the existing level (in 2001).

The current rate of increase of the number of telephone subscribers, especially mobile lines, is higher than previously forecast, despite funding and other difficulties. By 2005 the total number of mobile and fixed subscribers are expected to be about 650,000, equivalent to around four times the current level. The prevailing low teledensity and the low geographic coverage could stimulate an important development in the telecommunications sector if the GOA promotes the implementation of an integrated development program. This rate of increase and potential market development indicates the considerable scope of PPI opportunities.

#### Privatization

The proposed AT privatization process is similar to the general pattern in most of the sub-Saharan countries. The following steps delineate the main aspects:

- Split between posts and telecommunications
- Set up a regulatory body
- Incorporate the telecom incumbent operator
- Separate the core (monopoly) functions from new business areas and form the latter into independent subsidiaries
- Partial privatization of the incumbent operator and sharing the management with the strategic partner
- Access to company shares by private companies, employees and public.<sup>2</sup>

**Table 7.2 Forecast of Fixed and Mobile Markets**

Year	Population	Fixed Lines		Mobile	
		Customers	Teledensity	Customers	Teledensity
<i>Actual to date</i>					
2000	14,602,000	66,892		22,629	
2001	15,068,242	76,800		75,000	
<i>Forecast made in 2000</i>					
2002	15,549,371	73,748	0.47	91,741	0.59
2003	16,045,862	84,811	0.53	157,249	0.90
2004	16,558,207	97,532	0.59	258,308	1.50
2005	17,086,910	136,545	0.80	512,607	3.00
2010	19,994,692	262,652	2.52	1,007,951	6.00

Source: INEA; population: Instituto Nacional de Estatística [(INE) National Statistics Institute]. Economic data: World Bank. Telecommunications statistics: SADC and ITU. Forecast: CFR Consultants.

**Table 7.3 SADC Countries: Comparative Teledensity**

Country	GDP/capita (US\$)	Teledensity		
		Actual	Linear Regression	Exponential Regression
<b>Angola</b>	<b>690</b>	<b>0.59</b>	<b>3.03</b>	<b>1.71</b>
Botswana	3,047	9.27	12.87	11.62
Congo, Democratic Republic of	203	0.04	1.00	0.35
Lesotho	418	11.03	1.90	0.89
Malawi	152	0.47	0.79	0.24
Mauritius	3,881	25.56	16.35	15.88
Mozambique	209	0.44	1.02	0.37
Namibia	2,040	6.57	8.66	6.92
Seychelles	6,862	26.73	28.79	33.16
South Africa	2,976	11.35	12.57	11.27
Swaziland	1,353	3.14	5.80	4.07
Tanzania	257	0.41	1.22	0.48
Zambia	463	0.80	2.08	1.02
Zimbabwe	487	1.86	2.18	1.09
<b>Average</b>	<b>1,162</b>	<b>2.62</b>		

Sources: Teledensity: ITU; GDP/capita: Ministry of Finance of Angola, for Angola and South Africa, and IMF and World Bank databases.

This defines a comprehensive liberalization process. The first two steps have been accomplished so far. AT privatization was originally proposed in 1999, but none of the important steps for privatization have been accomplished. Recently, the GOA appointed a committee to study the action plan to implement AT privatization. The next key steps for AT will be to separate its new business areas into independent subsidiaries with properly separated accounts. Mobile was recently transferred to Movitel, and there is a study to set up a company for data services. Due to legal restrictions the fixed network privatization will follow different steps from the mobile network.

The process of full AT privatization could start by 2005. More details on the profile of these changes in the transition to full competition can be seen in appendix 5 (information taken from the Telecommunications White Paper.

#### *Fixed Network*

Nationwide fixed network provision for the “basic” infrastructure for public service is formally reserved for the state through its entity, AT. However, alternate providers are permitted to provide networks for commercial users. In practice, a number of commercial firms have created private networks, under an

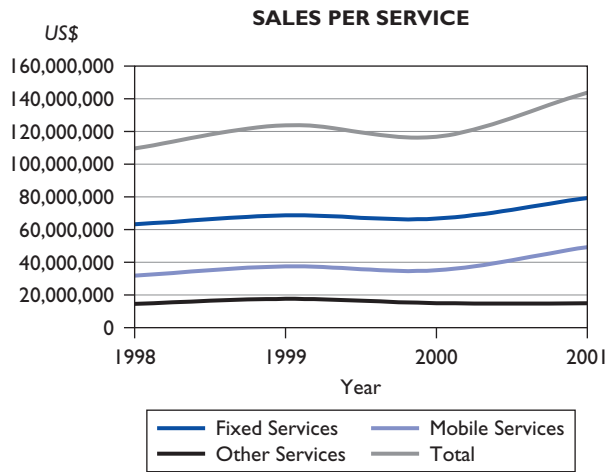
INACOM license, for their own use, which may also be used by other firms in the vicinity.

INACOM issued provisional licenses to some private companies to exploit public fixed line services. The new entrants expect that INACOM will cancel all such licenses to the companies that had not entered the competition process, started May 17, 2001, which resulted in the recent issue of four new licenses.

The concept of what is the “basic network” is key to determining where PPI opportunities lie. INACOM is not satisfied with the loose definition of basic network, as it is very unclear where the boundaries lie. The current understanding is that local residential services can be provided by alternate suppliers, subject to the law of delimitation of the sectors, which must then either connect to AT’s public service basic network or provide their own alternate commercial national network.

*Angola Telecom* AT is currently operating the basic network without any license. This is a consequence of the inheritance from the prevailing situation before liberalization. Under the provisions of Decree 44/02 (6 September), AT should apply for a license.

In 2000, AT had 66,892 subscriber lines and only 66 percent utilization of all switching capacity. The digitalization rate was 60 percent. By 2001 there were

**Figure 7.1 Growth in Sales of AT by Service**

Source: Angola Telecom.

about 76,800 subscribers and a digitalization rate of 87 percent. The 2002 estimate is 105,000 subscribers; note that this is much greater than is shown in table 7.3.

Growth in sales has been modest up to 2001 as shown in figure 7.1, above.

Although sales have been growing, AT's investment program is constrained by a lack of funding. The GOA, as the owner of AT, has not fully subscribed its share capital, which is now only equivalent to US\$ 200 million. AT cannot expand the interconnection capacity quickly enough. However, its loans from the GOA are sometimes at preferential rates, or connected to clauses of origin, or not repaid back to the GOA, with the potential to distort competition for private service providers.

The fixed line system comprises a number of separate networks with satellite links. AT would like to develop a fiber optic backbone along the coastline and inland, but there is no funding available.

In addition, debt to AT from entities dependent on the state budget and SOEs is higher than US\$ 100 million. Prepaid services are aiming to reduce the negative effects of such arrears on payments by small customers.

Growth in sales of fixed line and mobile telephony services has been increasing at an average annual rate of 4.0 percent and 7.7 percent, respectively, in U.S. dollar terms. A notable increase in sales can also be seen in the usage of the Internet, boasting an average annual growth in sales of over 45 percent.

Further data on sales growth and trends in other telecommunications services can be seen in appendix 7. The data show growth in sales in U.S. dollars and in telecommunications tariff units (UTT).<sup>3</sup>

**International** International access is provided via satellite (AT and Mercury) and a new fiber optic submarine cable—SAT3 (AT). Angola Telecom is now using SAT3, which commenced operation in late 2002.

**New Entrants** INACOM recently carried out a process for tendering four new fixed licenses to provide local residential services. This partly recognizes the existence of unlicensed commercial operators, as well as providing opportunities for local authorities to develop networks funded by private operators. In theory, the bidders could develop national commercial networks and link their local networks to these, but in practice they must agree on interconnection with AT's national public network.

In the original invitation to express interest, INACOM wanted each local party to have a foreign partner. However, only five bidders expressed interest and none of them found a foreign investor. Finally, one bidder dropped out and INACOM issued four licenses to the following candidates: MERCURY, MUNDO STARTEL, TELESEL, and WEZACOM.

These licensees will not be allowed to provide mobile services or a nationwide public switched fixed telecommunications services for residential clients. They will get authorization to provide the local access network for residential clients, subject to interconnection of such access network to a point agreed upon with AT. However, the precise details of the services they will be allowed to provide are not yet defined, and it is therefore urgent to clarify what the "basket of services" allows to new entrants. These restrictions (no mobile) and uncertainty (definition of scope of services) explain why there was a lack of interest by foreign investors.

**Universal Access/Service** Angola has around 160 municipalities. Fewer than 40 are connected to the public telephone network.

All future licenses shall include clauses concerning universal access/service. The Telecom Act has provisions for a special fund (FADCOM, which is not yet operational), which aims to provide some subsidy for



universal access. One of the contributions to the fund will be a given percentage (1 percent) of the total operator income.

MCT and the regulator both favor the reduction of customs taxes and other fiscal taxes to the telecommunications investors, which may be accomplished through the new Private Investment Law. This would assist with moving towards universal access.

### Mobile Services

There are two operators of mobile services offering different services:

- AngolaTelecom (AMPS—analogue—and CDMA—digital)
- Unitel (GSM).

Estimates of the number of active mobile customers are given in table 7.4, below.

Mobile services are available only in Luanda, Bengo, Cabinda, and Lobito/Benguela. Nationwide coverage is hampered by the lack of a national transmission backbone network.

The expansion of the services is also constrained by a number of other key factors:

- **Funding.** AT has no access to government funds for mobile services. Unitel has negligible equity and difficulty in raising loans—foreign banks are not interested to lend within Angola and domestic banks' capacity is very limited.<sup>4</sup>
- **Equipment installations take a long time.** This is due to the need to import most equipment, the lengthy time taken for imports to clear customs, the difficulty of delivering equipment to locations outside Luanda due to the lack of transport infrastructure, and the difficulty of obtaining permissions for foreign technical experts to enter the country to assist with the installations and commissioning.
- **Lack of qualified engineers.** There are almost no engineers graduating from Angola's universities.

The lack of capacity for new connections is reflected in the unfavorable terms offered to new customers. The cost of the handsets can be up to five times higher than in the international market. One of the operators is selling the subscriber numbers subject to the condition that the client pays a US\$ 200 credit up front. This indicates that there is no competition in the mobile market. The customer is not free to decide the best products. It may be observed that current customers are effectively being made to finance the future development of the network. In addition, these practices show the need for stronger sector regulation.

The two providers have different services. Angola Telecom is operating a mobile network with two standards (analogue AMPS and CDMA). Currently, AT does not have a license (and is not paying a license fee to INACOM), although it should apply for one. AT's mobile services were recently transferred to Movitel. AT operates a credit service, and most of the large commercial organizations are its customers.

In 1998, AT negotiated a technical assistance contract with COMMUNICO, a company without any previous experience as a mobile operator. Later, in January 2001, the parties signed a management contract, once again showing the early emergence of some limited forms of private sector participation in Angola.

Unitel holds a GSM license, issued by the regulator without any competitive bid, under authorization from the Cabinet. Unitel only provides a pre-pay service and therefore tends to mainly have smaller domestic customers.

It is not easy for customers to make a comparison between the tariffs of the existing mobile operators. The regulator is aiming to deal with this situation when issuing the new regulation on tariffs. In the meantime, it presents yet another barrier to competition.

The different services, nontransparency of tariffs, and the severe shortage of capacity have led to a situation where there is no real competition.

There has been discussion of a third license for another GSM operator for some time. MCT advocates the award of at least a third license, in a competitive bid, to bring competition to the mobile market with real affordable access prices for the public. Obviously, AT would be a very forceful contender for a new GSM license.

	2000	2001	Mid-2002
AT	22,629	33,000	40,000
Unitel		42,000	47,569
<b>Total</b>	<b>22,629</b>	<b>75,000</b>	<b>87,569</b>

Source: INACOM.

### Other Services

**Internet—ISP** There are 20 organizations that are licensed as Internet Service Providers (ISPs), but only 5 are currently operating. There are around 9,250 Internet users, which is a very low number, but growing fast. The access prices to the services are high and a typical PC cost is four to five times higher than in the U.S. AT is testing ADSL access.

**Cable TV** AT set up a company with a Portuguese partner to provide multimedia services, using fiber optic systems. One of the services is cable TV. Other entities have demonstrated public interest in such services.

### PPI Opportunities in Telecommunications

New PPI opportunities are being created by peace in Angola, the reformulation of an important set of laws, and the relative improvement in the macroeconomic environment. In the telecommunications sector there is a clear political commitment to liberalization.

The rate of increase of the telephone subscribers, especially mobile lines, is higher than previously forecast despite funding and other difficulties. By 2005, total mobile and fixed subscribers are expected to be about 650,000 (the 2000 forecast) or higher, equivalent to more than three times the current level. The prevailing low teledensity and low geographic coverage could stimulate an important development in PPI in the telecommunications sector if the GOA starts the implementation of an integrated development program, especially considering the lack of public funds available for the sector. AT is to be privatized and should negotiate international strategic alliances for both fixed and mobile services.

The sector is favorable to licensing a third mobile operator through a competitive bid. Although it is likely that the new license operator will be GSM standard or higher, the licensee should not be tied to any specific standard or technology to facilitate entry of new technologies such as 2.5 G or 3 G.

One of the GOA strategic goals is implementation of a long-distance national transmission backbone network, as the basic infrastructure to support the development of an information society, of POTS, and cellular networks in Angola. It will require the participation

of private investors, due to the high volume of necessary investments. Such a backbone would become the primary interconnection infrastructure for all the public telecom operators. Satellite can provide high band links, but at a very high cost. Links between Luanda and all other major towns are currently done via satellite, with traffic being mainly for voice communication. A fiber optic backbone would enable services to be expanded much faster.

Full market liberalization may occur before the end of the current decade. During the period 2003–2004, GOA intends to ensure free competition in all the services, except nationwide fixed voice. From 2005 GOA will prepare the transition to full competition. See appendix 6 for further description of this process.

Investment requirements in sub-Saharan countries can be quite large due to the relatively high cost per fixed line, which can be up to US\$ 5,000 per line. This includes equipment at FOB prices, international transport, customs clearance in the importing country, local transportation, civil works, installation, commissioning, and after-sales assistance. The latter includes the presence of the manufacturer's experts during the first one or two years of operation. In South Africa, the average cost is about US\$ 1,000, whereas in Angola it is estimated that fixed lines cost an average of US\$ 2,500.

### Identification of PPI Barriers

The main PPI barriers concern the existing legal framework. There is a clear move to liberalization, and to PPI. However, as referred to in the legal and regulatory framework section, above, there are some legal constraints.

Private investment is not authorized in the basic network infrastructure because it is an area of absolute reserve. So, PPI can take place only in the form of financing, but not involving any kind of ownership.

The basic network infrastructure is responsible for only about 0.5 percent of teledensity, which means a very low level of development. According to the White Paper and the Telecommunications Act, the GOA should invest with priority in the development of such infrastructure, which is not happening.

For normal development in the telecommunications sector, and a smooth implementation of the liberalization policy, it is necessary to provide the country

with a nationwide transmission backbone network, equipped with the appropriate transit switching centers, as the main support to the possibility for interconnection among the various regions of the country, all operators, and service providers. Without such a network, the expansion of services will be very slow and at a higher cost than would otherwise be the case. Even now, Unitel and Angola Telecom are facing expansion difficulties. The present situation will worsen with new entrants.

The existing basic network and its ownership are major barriers to sector development and to PPI. A change in the law would be necessary to overcome this barrier. In the meantime, the GOA should find other methods to develop the telecommunications infrastructure. There is an urgent requirement for investment funds. It is known that capital is not available in the domestic financial and banking system in Angola. The operators may find ways to borrow money from foreign sources including equipment supplier financing.

If the basic network were under controlled reserve, PPI participation would be facilitated, and GOA could retain the control of its infrastructure.

Investment in telecommunications requires large upfront expenditures and rapid returns due to technical obsolescence over a short period of time. This requires removal of all barriers to rapid expansion of the customer base so that the buildup of sales can be fast enough to recover the cost of invested capital.

Factors in the general business and economic climate that can deter investors include the need for more macroeconomic stabilization, lack of transparency of administrative processes such as procurement, tendering, and approvals, and need for the strengthening of the independence of the regulator and the judiciary.

The domestic banking system and financial markets are at an early phase of development and unable to provide the size of credits required by this rapidly

expanding sector. Unitel, for example, expects to fund its expansion only 50 percent from new debt and 50 percent from revenue; this limits the rate of growth.<sup>5</sup> In other countries, it is typical for mobile operators to have much higher gearing levels.

The quality of the existing educational system is very poor. Only 1 percent of the population of higher education age has access to a university. In the last decade, not a single engineer has graduated. The lack of local skilled and highly educated staff implies the need to recruit expatriate manpower. Operating costs become very high, and usually there are some difficulties getting the necessary entrance visas and working permits. The short time since the market economy started in the 1990s means that entrepreneurial skills are also barely developed.

The lack of good transportation infrastructure and the very low performance and territorial coverage of the public electricity supply have an impact on telecommunications infrastructure development. The costs of delivering equipment to new sites are very high and compounded by the need to construct supporting infrastructure (e.g., standby generation).

The current high level of customs and fiscal taxes leads to a lack of incentives to investment in this sector, given the heavy reliance on imported equipment.

#### Notes

1. The small letters for the items are not in alphabetical order since they correspond to the numbering in the Act itself.
2. The GOA intends to retain a "golden share" in AT.
3. 1 unit = US\$ 0.08
4. For example, recently Unitel was offered domestic credit of US\$ 10 million, only a fraction of what it requires to meet its expansion targets.
5. Due to Unitel's corporate structure, additional equity is unlikely to be available. The Angolan shareholders are unable to provide more equity, and Portugal Telecom is unwilling to do so alone as it is only a 25 percent shareholder and only has a five-year agreement to be a consortium partner.

# 8

## Promoting PPI: Key Measures and Recommendations

Angola is at the very early stage of creating opportunities and a supportive environment for PPI development. It is evident that many actions will be required to create the type of environment within which private investment can be carried out with confidence and which will encourage the flow of private capital into the infrastructure sectors.

The risks of long-term investment in Angola are currently viewed as very high by the private sector, and many risk-reducing steps will be necessary to persuade the private sector to accept significant amounts of risk transfer at reasonable costs. These steps cannot all be carried out rapidly, and we have therefore set out the actions within a loose time frame labeled short, medium, and long term. We have deliberately not put precise years against this designation but would characterize the terms as being within the next 3–5 years (short), 5–10 years (medium), and up to 2020 (long). In addition, we have identified some steps for which immediate action is recommended, as they can be carried out at low cost and with potentially important effects in stimulating or enabling PPI.

### Crosscutting Issues

For both local and foreign investors, Angola's attractiveness for investment outside of the petroleum and gas sectors has been greatly enhanced by the advent of peace. This development is still so recent, however, and the reconstruction problems so daunting that perceptions of risk remain very high. For example, as of the

first quarter of 2003, the Economist Intelligence Unit has a country risk rating of D for Angola (A = least risky, E = most risky) and a risk score of 72 (this is out of a possible 100, where 100 is most risky).

Looking ahead, the IMF projects a near doubling of Angola's GDP between 2001 and 2007, this being based largely on a projection of a rapid rise in oil production (from 740,000 barrels per day in 2001 to nearly 2,000,000 barrels per day in 2007). Other commentators are more sanguine about Angola's prospects, expressing concern about governance issues and the economic and social legacy of four decades of conflict.

To realize the high growth potential the IMF has identified, it is imperative that the government tackle these concerns head-on. Infrastructure deficiencies are among the most pressing issues to be addressed. In the **policy** section of the Recommendations table below, it is recommended in the short term that the government review the competitive position of Angola in attracting PPI and publish a document laying out and explaining national policy on private sector participation in infrastructure. This should aim to provide both the factual information useful to a potential investor and an assurance of consistency and transparency in the policy implementation. The document would form the basis for conducting a public awareness campaign within the country on PPI.

It is further recommended that consideration be given to the establishment of a PPI Unit. This unit would incorporate the Infrastructure Development

Fund, which is being proposed as a dedicated fund to channel finance into infrastructure sectors. It is mainly for this reason that it is envisaged that the PPI Unit would fall under the Ministry of Finance. Alternatively, it may be deemed more effective to have an infrastructure PPI unit within the new Agency for Private Investment (which has succeeded the existing Institute for Foreign Investment).

Medium-term policy targets are to liberalize entry conditions in each infrastructure sector and ensure that adequate regulatory frameworks are in place. Moving from the medium to the long term, decisions will have to be made at the policy level on the extent of foreign private participation and the coverage of PPI within the economy.

In respect of **finance and credit**, the immediate objective is to stabilize the macro-economy, thereby creating the environment for financial institutions to extend loans, which will be used for productive rather than speculative purposes. The capacity and incentive structure within the domestic credit market needs to be examined and, where possible, improved, with competitive pressures being enhanced by encouraging foreign banks to expand their financing of domestic as well as export-oriented activities. Consideration should also be given to the establishment of the Infrastructure Development Fund, mentioned above. This would channel government and private sector financing into viable infrastructure projects.

In the medium term, both foreign and domestic sources of infrastructure financing need to be expanded. It is recommended that a strategy to market Angola to international providers of risk capital and long-term credit be developed and that the emergence of a domestic pension and insurance industry be encouraged. The establishment of a local stock exchange should complement this. It is crucial that the expansion and deepening of the financial sector in Angola be accompanied by strengthening the agencies responsible for supervision and regulation of banks and other financial sector institutions.

As documented in chapter 3, the passing of recent legislation has greatly strengthened the legal framework for PPI, but more remains to be done to improve the **legal and regulatory environment**. The most urgent requirement is to ensure that there is an adequate regulatory framework for each sector, the legislation

facilitating the creation of “best practice” regulatory agencies, characterized by professional competence and independence from political influence. Considerations of capacity constraints and of economies of scale and scope may point to the formation of multi-sectoral regulatory bodies, but each sector would still need to have its own legal provisions for regulation of that particular sector.

It is also recommended within the short-term horizon that the legal provisions giving the right of the state to nationalize infrastructure assets be removed by amending the various sectoral framework laws. It would also be advantageous to reduce the number of entities involved in the registration and inspection of foreign-owned enterprises. The speed and efficiency of the judicial process need to be markedly improved. Changes to the legal system to improve the environment for private sector participation in infrastructure are best regarded not as an event but as an ongoing process, with bolder measures being contemplated as experience is gained.

Until there is a strong and independent regulatory framework, private investors will continue to rely on their contracts. There is a need to increase confidence in both the sanctity and enforceability of contracts. One immediate measure Angola could take to boost investor confidence is to provide assurances over the arbitration process by signing on to the New York Convention.<sup>1</sup>

A further supporting measure would be to streamline the whole process of transaction approval by identifying bottlenecks in the process (as described in the roadmap in chapter 3) and take steps to remove them.

At present, most infrastructure service providers are still in state hands. The remaining **enterprises** should be incorporated as soon as possible, with proper accounting systems being adopted and institutionalized. The new sectoral regulators are to be responsible for stabilizing the frameworks for the setting of prices, which will balance the interests of consumers and the utilities, but the prices themselves in most cases are to be periodically changed by the companies themselves in accordance with the specified regulatory parameters to reflect external factors.

As the CFR has made clear, varying market circumstances and opportunities exist in the different infrastructure sectors. The challenge is for government

and the regulators to promote competitive conditions wherever possible and obviate monopolistic features arising through appropriate regulation. When circumstances permit, full-scale divestiture is to be considered.

In the sphere of **employment**, a major disincentive to foreign investment would be removed by easing the procedures for the issuing of work permits to foreign technical experts. It is understandable that there should be a fear that too liberal a policy in this regard might deprive Angolans of substantive employment opportunities but, given the extreme shortages of nationals with the necessary technical and professional

skills required in the infrastructure sectors, this fear is presently rather misplaced.

As peace is consolidated and the economy takes off, the problem will rather be one of skills shortages constraining the recovery. The emphasis should thus be on initiating a wide range of capacity-building activities inside and outside existing enterprises designed to enhance skills at all levels and expand the pool of available skills as soon as possible. Increasing the number of university graduates is a particular medium-term objective. In the longer term, as these programs take hold, the “Angolanization” employment requirements are to be phased out.

**Table 8.1 Recommendations: Crosscutting Issues**

Action area	Short term	Medium term	Long term
Policy	Review the competitive position of Angola in attracting PPI Publish document laying out and explaining Angola's policy on PPI in infrastructure Conduct public awareness campaign on PPI Consider establishing dedicated PPI Unit in Ministry of Finance or ANI	Liberalize entry conditions in each infrastructure sector Introduce regulatory frameworks that cover all infrastructure sectors Consider the role of international providers in competitive elements	Review the efficiency and value for money of expanded PPI into new areas
Finance and credit	Stabilize macro-economy to create environment for lending to productive activities Review the capacity and incentive structure of the existing domestic credit market Encourage foreign banks to expand their operations	Market Angola to international providers of risk capital and long-term credit Encourage development of sources of long-term finance, including pension and insurance industries Establish local stock exchange	Strengthen financial sector supervisory and regulatory capacity
Legal and regulatory environment	Expand the infrastructure regulatory framework so that each sector is covered Remove legal provisions giving right for state to nationalize assets Streamline transaction approval process by removing bottlenecks	Reduce number of entities involved in registration and inspection of foreign owned enterprises Improve speed and effectiveness of judicial process, improve enforceability of contracts (e.g., sign on to New York Convention)	As experience is gained, streamline regulations and laws to provide continual improvement in environment for PPI
Enterprise level	Incorporate remaining infrastructure service enterprises. Ensure adoption of proper accounting practices Transfer pricing responsibility to the enterprises subject to pricing frameworks and supervision established by regulatory body	Develop appropriate market and competitive structures for each infrastructure sector	Consider the costs and benefits of full-scale divestment of selected infra service providers
Employment	Ease procedures for issuing work permits to foreign technical experts Initiate capacity-building programs for all levels of skilled personnel	Improve flexibility of “Angolanization” requirements	Increase substantially the number of higher level (university) technically qualified graduates



## Electricity

### *PPI Opportunities*

There are significant PPI opportunities in electricity in the short and medium term in five main activities:

- Increasing access to electricity supply through the electrification of rural areas.
- The operation and development of grids that have been isolated from the main network as a result of the civil war.
- Rehabilitating and operating power plants that sell to ENE under power purchase agreements.
- Building and operating power plants that sell to ENE or EDEL or to large consumers under power purchase agreements.<sup>2</sup>
- Providing services under contract to ENE and EDEL.

In the long term, there could be additional PPI opportunities through the transfer of ENE and EDEL to the private sector.

The five short- and medium-term opportunities are discussed below.

**Electrification** Formal access to electricity in Angola is available to only 20 percent of the population, though many more may have access through illegal connections to the state-owned networks or through small private suppliers of electricity. Angola has one of the lowest per capita electricity consumption levels in the SADC region and yet its per capita income level is relatively high.<sup>3</sup> Many consumers have access to electricity through unlicensed and unregulated markets where prices are high and a large part of the population appears to be willing and able to pay high prices for electricity supply. This suggests that ability to pay is favorable for the private sector to invest in expanding access to electricity.

This opportunity is noted in the Strategy. This notes the existence of “a significant informal electricity distribution market” that is illegal and uses power plants licensed for industrial or agricultural purposes. The Strategy welcomes this as an indication of opportunities to promote private participation.

**Operation and Development of Isolated Grids** In addition to ENE’s three main grids, ENE operates nine separate island grids that were, in some cases, created following

the destruction of transmission lines during the war. Some will be absorbed into the wider ENE network when the transmission lines are restored. In addition to ENE’s isolated grids, there are a large number of isolated systems where the municipal government organizes its own generation and distribution of energy, often with the support of ENE and/or DNE.

Most of the isolated grids are in need of major rehabilitation and have inadequate generating capacity to meet local demand.

The problems faced by these isolated grids also provide an opportunity for PPI. ENE may not have the resources to invest in new generating plant or to rehabilitate the local network, but, under the right conditions, the private sector might be willing and able to undertake such investment and to operate these grids.

When the isolated grids are connected to the ENE grid, the local distributors could continue to operate the local network and purchase power wholesale from ENE. Container-mounted power plants that are installed to meet the demand of these isolated grids could then be transferred to other isolated sites.

**Rehabilitating and Operating Power Plants** The immediately identified power plant investments in Angola for the next four years are generally for the rehabilitation of existing plants.<sup>4</sup> The rehabilitation could be offered to the private sector under rehabilitate operate transfer (ROT) or rehabilitate own operate (ROO) arrangements. These are similar to build own operate (BOO) or build operate transfer (BOT) except that the initial investment comes in the form of rehabilitation.

This type of PPI would be most suited to the rehabilitation of larger hydropower plants. It could also be relevant for smaller thermal power plants but these are generally used to serve isolated grids; it would be better to involve the private sector in the total operation and rehabilitation of these isolated grids (generation, distribution, and supply).

**Building and Operating Power Plants** When new power plants are needed, they could be contracted with long-term PPAs under BOO arrangements or its variants. Long-term PPA arrangements can lead to subsequent problems when the market is opened to competition. Under current circumstances, they would probably

require state guarantees<sup>5</sup> that would partially undermine one of the benefits of transferring financing responsibility to the private sector.<sup>6</sup> However, on a limited scale, they can be a first step toward PPI.

The planned Alrosa IPP in Angola provides an example of a power plant built mainly to supply a large electricity consumer that is also part of the IPP company, thus mitigating the need for guarantees.<sup>7</sup> This is an attractive model for other IPPs but does depend on the existence of large consumers that can guarantee the revenue stream from the power purchase agreement.

**Contracting Out Services to the Private Sector** Good rewards for strong private management could be obtained by outsourcing non-core activities such as metering and revenue collection services. This approach could be applied to a range of services required to operate an electricity system, such as construction, maintenance, and manufacture or treatment of poles.

Outsourcing of metering and/or revenue collection services could require a private contractor to undertake investments in metering equipment or revenue collection facilities (setting up revenue collection service points, computerized billing systems, networks of data entry terminals, and so on), as well as the service operation. Alternatively, the contractor's responsibility could be limited to the operation of metering and billing facilities provided by ENE and EDEL. The latter is unlikely to be effective in achieving improvements in revenue collection and reduction in losses.

#### **Actions within the Existing Legal and Regulatory Framework**

**Prices and Subsidy Policies** Though subsidies have been eliminated, in principle, from the generation/transmission part of the electricity supply chain, low end-user prices combined with high losses and poor revenue collection results in the need for operating subsidies from government to both EDEL and ENE.<sup>8</sup> A major risk associated with subsidies is that they may be withdrawn if the government budget is constrained. IPPs selling electricity to ENE or EDEL are therefore certain to demand extensive government guarantees.

Subsidized prices for electricity also have two side effects:

- Subsidies create a culture where consumers regard low prices as a right. Private developers that establish isolated electricity networks then find it harder to convince their consumers to pay the full cost of supply.
- Even if ENE earns a reasonable profit level, cross-subsidies between urban and isolated rural users can create large distortions. If consumers buying from ENE will pay one price, while users buying from a nearby private supplier pay a higher price, it will be harder for the private developer to attract customers or to collect revenues.

There is clearly a conflict between the desire to provide electricity to consumers at affordable prices and expanding access to electricity to a wider proportion of the population. This is recognized in the Strategy, which states that "... studies will have to take into consideration the existing conflict between tariffs set up on the basis of the real costs and the need of crossed subsidization to support and develop the access to the electricity service by low income consumers in urban and rural areas. . . ."<sup>9</sup>

The above suggests that to maximize access to electricity:

- Tariffs should be nonuniform and, to some extent, should reflect differences in cost of supply to rural areas and isolated grids (this is recognized in the Strategy).
- Subsidies should be limited to capital subsidies (not operating subsidies). To benefit rural areas, performance-based subsidies could be targeted at rural networks. Subsidies could, for example, be targeted on the basis of the number of connections made (output based) in rural areas.
- The capital subsidies should be available to private service providers as well as ENE and EDEL (or not at all).
- Automatic tariff indexation should be introduced that would allow electricity tariffs to be increased with inflation during the year<sup>10</sup> without the need for the Ministry of Finance's approval.

**Financial Performance of ENE and EDEL** For any of the BOO, BOT, ROO, or ROT options that involve selling power to ENE or EDEL, a private investor will be

discouraged by the poor financial condition of ENE and EDEL: high losses, high noncollection rates, and dependence on an unreliable government budget for operating subsidies. With the exception of Alrosa-type projects, where a customer provides the guarantee, and the possible exception of mobile plants (container-mounted, barge-mounted, or skid-mounted), investors will insist on state guarantees and will demand high rates of return to compensate for the high risk. An improvement in the financial performance of ENE and EDEL would reduce the level of state guarantees and/or reduce the risk premium demanded by investors in power purchase prices.

A reduction in losses and an improvement in collection rates would also improve the profitability of the company and would reduce the need for price increases. This would also improve the attractiveness of EDEL and/or ENE if they were eventually privatized.

**Electrification Master Plan/Support for Small Developers** To identify opportunities for supplying electricity in isolated grids or rural areas, investors need information about ENE's plans to extend its network to rural areas or to reestablish transmission connections to cities or large towns. The Strategy also recognizes this need. ENE should therefore prepare, publish, and regularly update an electrification plan and a transmission plan.

The small size of private rural electricity operators and their dispersion over a wide area will make them difficult to regulate, support, and subsidize. Institutional arrangements that provide information and support to potential and prospective private rural operators would help speed up the electrification process. No such institution exists at present in Angola.

The institution could assist operators with:

- Technical designs
- Applications for regulatory approvals
- Ongoing regulatory issues (e.g., tariffs)
- Applications for financing (commercial or concessionary) and/or investment subsidies.

A private operator under contract to MINEA or DNE (similar to an Energy Service Company or ESCO in the Demand-Side Management culture) could provide this support, but MINEA or DNE will need to initiate it.

#### **Actions that Require Changes to the Law**

As the Strategy recognizes, private sector participation is already happening in the electricity sector; it happens outside the law and is unregulated, but it is happening. It is important that this activity is regulated, but it is equally important that it is encouraged to increase access to electricity. This requires light-handed regulation.

**Concession and License Regime** The General Electricity Law<sup>11</sup> allowed for private sector participation in the electricity sector and provided a framework for concessions and licenses. The law states that the Council of Ministers is responsible for granting concessions, and the provincial governments have the power to grant licenses. However, the Law of Delimitation of the Sectors of Economic Activity enacted in 2002 supersedes the 1996 Electricity Law. The former states that electricity is an area of relative reserve and can be performed only as a concession. Since this applies whatever the size, it will be a major PPI barrier for small-scale isolated grids or other small-scale investments. An important and urgent condition for PPI outside of the ENE and EDEL network areas is therefore to introduce a simpler system for licensing off-grid or small-scale electricity schemes.

The Alrosa IPP scheme illustrates an additional problem with the current concession arrangements—the lack of transparency over the issuance of concessions. The Alrosa scheme was burdened with a requirement that ENE take a 45 percent equity share in the company while ENE makes no contribution to the investment costs nor does it provide other investments in kind. Though this obligation did not deter Alrosa, it could deter other investors in future. To attract power sector investments, it would be better if obligations on investors are spelled out clearly in advance and are transparent or, preferably, a licensing system that the regulator operates could replace concessions for generation.

**Regulation of Electricity Prices** The electricity regulator (IRSE) was established in principle in 2002, and it was not anticipated that IRSE would be created in 2003. Unlike most regulatory bodies, IRSE is not granted authority to set prices or to issue licenses. IRSE's main role is to ensure that the General Electricity Law is followed. However, tariffs for any concession or license

are actually set by the Ministry of Finance in accordance with Council of Ministers Decree 20/90.

An independent regulator is important to give investors confidence that their investments will be protected. Without this confidence, investors will demand extensive state guarantees and will require higher

returns on their investment to compensate for uncertainties over prices. To increase investors' confidence, the regulator must be made responsible for setting prices.

The team's recommendations for the electricity sector are detailed in table 8.2, below.

<b>Table 8.2 Recommendations: Electricity</b>			
Action area	Short term	Medium term	Long term
Tariffs	Examine geographical differences in costs of electricity supply; prepare a tariff study Introduce nonuniform tariffs over time	Continue adjusting tariffs until tariffs are cost-reflective	
Subsidies	Eliminate operating subsidies to ENE and EDEL Develop procedures for automatic tariff indexation with inflation Introduce output-based capital subsidies Allocate funds from state budget for year beginning 01/2005	Make the same subsidies available to the private sector on equal terms Establish a fund with clear policies and transparent procedures Seek funding from donor agencies	Eventually phase out subsidies
Improve financial performance of companies	Implement agreed performance contract Reduce losses, improve revenue collection Improve financial reporting	Continue to reduce losses	Eventually privatize ENE and EDEL
Electrification policy and program	Develop and publish the first master plan Develop the concept for an electricity enterprises support agency and set out the governing principles	Allocate state budget and/or seek donor support Issue tender for private company to operate the agency	Update master plan regularly Transfer responsibility for the agency to its members
Contracting out of services by ENE and EDEL	Identify the services to be contracted out (e.g., metering, billing and revenue collection)	Issue tenders for private operators	
Concessions for the operation of isolated grids	Identify candidate pilot isolated grid to be offered as a concession, develop the tendering concept Transfer concession process for small projects to the regulator	Draft concession contract and tender documents and launch tender Approve pilot concession (CM or regulator)	Continue tendering concessions / licenses
Rehabilitation of existing plant and networks	Conduct assessment of benefits and practicality of ROT schemes	If appropriate, prepare documents and launch a tender	
Amend the concession regime	Introduce simple licensing for small projects (amend the General Electricity Law or the Law on Delimitations)		
Regulation	Strengthen the role of the regulator (amend the General Electricity Law)	Transfer responsibility for price setting to the regulator Make the regulator independent of policymakers	
New large power plant investments	Offer new power plants as BOO projects, develop the concept	Draft contracts and tender documents	Launch tender when new plant is needed

## Water, Sanitation, and Solid Waste

Private sector participation in the water and sanitation sector is a complex process that will require sustained commitment from the government if the potential benefits are to be fully realized through the provision of improved services, especially for the poor and disadvantaged groups. In developing partnerships with the private sector, the government should also encourage active cooperation and collaboration with recipient communities and NGOs, particularly in peri-urban and rural areas.

The proposed recommendations are summarized in table 8.3. It should be noted that many of the proposed initiatives have been highlighted in the government's own Water and Sanitation Development Strategy. The main aim now should be to convert the proposals into firm and effective action.

### Water and Sanitation

Chapter 5 analyzed the current water and sanitation situation in Luanda, other urban centers, and rural areas, and outlined government policies and strategies. Recommendations have been made to encourage private sector participation, expand the range of technologies for water delivery, broaden the sectoral scope of responsible public enterprises, and create an independent water sector regulator. The government's existing program, supplemented by the CFR's recommendations, is summarized in the following actions:

### Framework Issues

- **Water sector legal framework:** The objective is to have the Water Law of June 2002 and associated regulations fully operational. The immediate priority is to draft the regulations, present these to stakeholders for discussion, then finalize and publish the regulations as soon as possible. Subsequently, as experience is gained in implementing the new law, further regulations or refinements may be required.
- **Water sector regulator:** In the newly created institutional structure, regulation of water as a natural resource will be the responsibility of the catchment councils, operating under the National Water Council. However, there is no provision for the regulation of service provision to ensure that high-standard water and sanitation services are delivered

to existing customers at affordable prices and that access to services is expanded as rapidly as possible.

Given skill constraints in Angola and synergies between sectors, water and sanitation regulatory capacity would best be created within a multi-sectoral regulatory agency which, crucially, should have a high degree of autonomy relative to government. Such a regulator is very desirable even if water and sanitation assets remain in state hands, but becomes essential when private sector participation is being considered. The immediate requirements are to create the legal framework for a water service regulator and to establish the regulator as soon as possible.

- **Local entrepreneurs and companies:** There is substantial scope for local private sector entrepreneurs and companies to participate in the water and sanitation sector in urban and rural areas. However, in some areas the private sector lacks the skills and access to capital resources to enter the market in an immediately useful and effective way. In this context, the government could initiate an appropriate training and technical assistance program.

### Luanda

- **EPAL tariffs and financial and operational management:** Starting immediately, raise tariffs to the maximum extent permitted by Executive Decree 27/98 (i.e., full quarterly indexation to compensate for inflation, plus real tariff increases of 15 percent every 6 months). Many forms of PPI are dependent on tariffs that ensure commercial viability.

Continue tariff increases until full cost recovery is achieved. Implement the public enterprise accounting requirements, under the guidance of a fiscal council, as stipulated in Decrees 38/00, 42/01 and 82/01.<sup>12</sup>

Improve bulk and customer metering and other aspects of the physical network to provide reliable water balance reports and improve flow management within the distribution system.

- **Peri-urban water and sanitation:** In the short term, invite private operators to build and operate charafizes (on a more efficient basis than EPAL is able to do); provide EPAL with the financial resources to enhance competition in the truck-tank supply chain, while at the same time discussing, finalizing, and promulgating truck-tank regulations.

**Table 8.3 Recommendations: Water and Sanitation**

Action area	Short term	Medium term	Long term
<b>Framework Issues</b>			
Legal framework	Present draft regulations to stakeholders for discussion, finalize and publish	Refine and add to regulations, as necessary	Water Law of June 2002 and associated regulations fully operational
Water sector regulator (service provision)	Create legal framework for water supply regulator Promulgate regulations to allow franchising of chafarizes	Establish regulator (preferably as part of autonomous multi-sector regulatory agency)	
Local PPI entrepreneurs	Provide training and financial assistance	Continue training and financial assistance	
<b>Luanda—water and sanitation</b>			
Water tariffs	Raise tariffs consistently by full amount allowed under Decree 27/98	Continue with tariff increases until cost recovery levels are achieved	Water tariffs to be subject to decisions of independent regulator
Peri-urban water	Invite private operators to build and operate chafarizes Provide EPAL with resources enhance competition in truck-tank supply chain Regulate truck-tank supply chain	Tender demonstration projects on appropriate technologies for water and sanitation in the musseques  Enforce regulations under increasingly competitive conditions	Invite private operators to replicate successful pilot projects
EPAL	Carry out study on unbundling and outsourcing Implement public enterprise accounting requirements Improve bulk metering to provide reliable water balance and improve management of physical flows	Unbundle and progressively outsource identified functions	Complete process by concessioning core functions
Sewerage	Conduct project to rehabilitate sewerage system	Investigate options for wastewater treatment; and invite bids to build and operate the facilities	Integrate water supply and sewerage services into one utility enterprise
Sanitation	In peri-urban areas, encourage basic construction and maintenance services by private sector	Further develop private sector involvement in collaboration with NGOs and local community groups	
<b>Other urban centers—water and sanitation</b>			
Tariffs	Raise tariffs consistently by full amount allowed under Decree 27/98	Continue with tariff increases until cost recovery levels are achieved	Water tariffs to be subject to decisions of independent regulator
Planning	Complete Master Plans for seven urban centers	Master Plans for next nine urban centers	Master Plans for remaining 15 urban centers
Institutional reform	Reorganize water departments as semi-autonomous Public Municipal Enterprises	Drawing on experience of EPAL and other utilities, start outsourcing of functions	Building on past experience, continue outsourcing
	Where water and sanitation enterprises already exist, allow greater autonomy	Tender demonstration projects on appropriate technologies for water and sanitation especially for peri-urban areas	Invite private operators to replicate successful pilot projects
	Carry out study on feasibility/desirability of multi-sector utilities	Establish multi-sector utilities	Operate under a multi-sector regulator



**Table 8.3 Recommendations: Water and Sanitation (continued)**

Action area	Short term	Medium term	Long term
Sewerage	Carry out feasibility studies on waterborne sewerage and stormwater drainage systems in selected urban centers	Invite bids to build and operate sewerage and wastewater treatment systems in selected urban centers	Integrate water supply and sewerage services into one utility enterprise
Sanitation	In peri-urban areas, encourage basic construction and maintenance services by private sector	Further develop private sector involvement in collaboration with NGOs and local community groups	
<b>Rural areas—water and sanitation</b>			
	Prepare framework and incentives for private sector involvement in water and sanitation	Develop private sector involvement in collaboration with NGOs and local community groups	
<b>Luanda—solid waste</b>			
	Finalize and implement plans for regulator and management contracts with private sector	Encourage solid waste recycling	
	Resolve and clarify main outstanding issues	Conduct study on property-based taxes and solid waste charges	Implement proposed taxes and charges

Tender demonstration projects on alternative water and sanitation delivery technologies (as well as considering modifications to existing delivery systems, such as EPAL's chafarizes, to reduce costs and water wastage). Ensure technical and user-level discussions are held. In the medium to long term, encourage PPI operators, community enterprises, and NGOs to replicate successful pilot projects.

- **EPAL PPI options:** Reconsider the range of PPI options, including the 1998 proposal for a flexible, phased private sector agreement and the Mozambique institutional model (i.e., assets holding company, private operator, and independent sector regulator). The choice of PPI option partly depends on whether revenues will cover costs or whether subsidies are available to cover revenue shortfalls.
- **EPAL recommendation:** The CFR recommendation is for a phased approach, which will make it possible to introduce PPI in the near future and allow experience to be gained before the entire enterprise is privatized. This approach involves EPAL defining its core business, unbundling, and outsourcing, leasing or granting concessions for as many functions as the availability of suitably qualified firms makes possible (candidates could include: the capture, storage, and

treatment of bulk water; operation and maintenance of the trunk transmission system and/or the distribution network and/or the sewerage system; reading of meters, billing and collection of revenue; maintenance and operation of the chafarizes).

Action to advance this approach requires an immediate study of the options, followed, in the short run, by the unbundling and granting of licenses or concessions to private sector operators.

In the medium term, a decision should be made on the optimum strategy of how to involve the private sector in the remaining core functions. The final objective would be a competitive tender for a long-term private concession.

- **Sewerage and stormwater drainage:** In the short to medium term, rehabilitate the sewerage and stormwater drainage systems, and investigate options for wastewater treatment. Invite bids for a concession to build and operate the treatment plant. In the longer term, consider the full integration of the water supply and sewerage services into one utility enterprise.
- **Sanitation:** In peri-urban areas, encourage the private sector to offer basic construction and maintenance services in collaboration with NGOs and local community groups

### Other Urban Centers

- **Tariffs:** Starting immediately, raise tariffs to the maximum extent permitted by Executive Decree 27/98 (i.e., full quarterly indexation to compensate for inflation, plus real tariff increases of 15 percent every 6 months).
- **Planning:** Complete the masterplans for the seven cities where these are in progress. Thereafter, commission masterplans for the next 9 urban centers already identified, and finally for the remaining 15 urban centers included in the Water and Sanitation Sector Development Strategy.
- **Institutional reform:** Move water and sewerage out of provincial directorates and create public municipal enterprises that are semi-autonomous and take full responsibility for these functions in all major urban centers. Where feasible, these enterprises could also be responsible for other sectors (e.g., electricity).

Where public enterprises already exist for water and sewerage (i.e., in Lobito and Benguela), give management increased autonomy and consider expansion into multi-sector utilities.

- **Private sector participation:** Encourage public municipal enterprises to define their core business, unbundling and outsourcing, leasing or granting concessions for as many functions as the availability of suitably qualified firms makes possible (the same areas as outlined for EPAL apply, with the addition of other sectoral activities where multi-sector utilities have been formed).
- **Expanding the range of technologies for service delivery:** Implement demonstration projects on alternative water and sanitation delivery technologies and community participation approaches. Ensure technical and user-level discussions are held. In the medium to long term, have PPI operators, community enterprises, and NGOs replicate successful pilot projects.
- **Sewerage and stormwater drainage:** Conduct feasibility studies on waterborne sewerage and stormwater drainage. Invite bids for concessions to build and operate sewerage systems. In the longer term, consider the full integration of the water supply and sewerage services into one utility enterprise.
- **Sanitation:** In peri-urban areas, encourage the private sector to offer basic construction and

maintenance services in collaboration with NGOs and local community groups.

### Rural Areas

- **Framework and incentives to encourage PPI:** Provide framework and incentives for the private sector to provide construction and maintenance services for improved water and sanitation facilities in collaboration with NGOs and local communities.

### Luanda—Solid Waste

In respect of solid waste services, important experience has been gained from the Urbana 2000 management contract. Based on the recommendations of a recent study, the government is preparing to implement significant reform of solid waste services in collaboration with the private sector. The following main actions are proposed:

- **Solid waste regulator and management contracts with the private sector (immediate):** The Provincial Government of Luanda is proposing to implement a new structure that includes: a provincial regulator; provincial supervision unit; ELISAL to act as the main asset holding company and lease equipment to the private contractors; five area-based contracts for solid waste collection; and three contracts to manage the landfill site, disposal of hospital waste, and disposal of industrial waste. The proposed structure will require strong leadership from the regulator.

In addition, six issues require further consideration and clarification: (a) whether the contractors for solid waste collection should be financially responsible for their own vehicles and equipment instead of leasing from ELISAL; (b) standardization requirements for vehicles and equipment; (c) contract payment procedures and lines of credit to minimize the risks of delayed payments by the provincial government; (d) consultations with local community groups and other interested parties; (e) options for the introduction of levies and charges for solid waste services (see below); and (f) full consideration of the environmental implications and requirements for both the public and private sectors, especially at the landfill site, and the disposal of hospital and industrial wastes.

- **Solid waste recycling (short to medium term):** Encourage households to separate recyclable solid

waste (e.g., paper, glass, metals, and plastics), and microenterprises to collect the items for industrial recycling.

- **Property-based taxes and solid waste charges (medium to long term):** Commission a study on the options, levels, and procedures to introduce property-based taxes and solid waste charges to finance the service. Initially, it could be implemented in the formal part of Luanda.

## Transport

In Angola all the transport modes serving domestic transport (road, rail, and air) need development but are potentially in competition with each other and for scarce development funds. The investment priority in any or each mode should be considered after preparation of a multimodal transport study of each relevant corridor. This should identify the total traffic requirements, prepare long-term traffic growth forecasts under various scenarios, and consider a rational allocation of traffic to each mode based on least cost and an integrated view of transport development.

### Roads and Highways

The road network in Angola has been severely damaged throughout the country. Resettlement has occurred on a grand scale and the effect on the volume of traffic has been negative. It is necessary, therefore, to improve data collection in order to understand the present condition of roads and bridges and the nature and volume of road traffic, to be better able to plan highway and roads development, and supply information to the private sector. Initially road transport planning should be considered on a regional or network basis rather than provincial basis.

Following the cessation of hostilities, there now exists the opportunity for resettlement, reestablishment of past enterprises, particularly in agriculture, and the reopening of trunk routes connecting the rural population to the main centers. The GOA needs to facilitate the process.

A secure source of government revenue must be established to ensure regular road rehabilitation and maintenance, establishing the best budget and procurement practices to create confidence in the private sector, the revitalization and proper financing of the Road

Fund being an important element of this policy. Fuel and lubrication taxes, motor vehicle import duties, registration, and road user charges would be the primary mechanisms for establishing the base for the operation of the Road Fund. Furthermore, an independent governing body of the Road Fund should be established and its members appointed from all stakeholder groups—road users, vehicle suppliers, and road transport users—passenger and freight—as well as government representatives from line and oversight ministries.

Legislative changes must be completed or initiated in order to revive the Road Fund including setting appropriate revenues by taxing mainly road users. There is also a need to clarify the “reserve” conditions of infrastructure ownership and road services operations (i.e., which areas are open to the private sector and which reserved for the public sector), and also to set the institutional framework for road maintenance, construction, and operation, including concessions based on tolling, shadow tolling, or performance-based contracts. To improve the institutional framework, INEA’s capacity and role should be strengthened.

INEA’s technical, managerial, and operational capacity must be improved to ensure the development of the roads network, particularly in terms of planning, forecasting, financial control, and procurement.

To further enhance the environment for private sector participation the GOA should privatize the INEA brigades into road construction and maintenance enterprises and heavy equipment rental companies.

Studies need to be conducted to analyze opportunities for shadow tolls or performance-based contracts, in the short term for connections between Luanda–Viana, Benguela–Lobito (short distance), Huambo and the cities of Benguela, Lubango, and Kuito (long distance). There are also opportunities to consider the concessioning of tolled bridges on heavily trafficked routes.

### Railways

In the past, as well as just carrying passengers for travel purposes, the railway provided useful services to ports and to mines to transport raw materials around the country and to bring exports to the ports. One of the initial steps that should be taken is to pursue the commissioning of Angoferro as a national master plan

type of study. It is important that studies are undertaken to assess the present condition of rail lines, bridges, and traffic demand, improve the planning of the rail lines development, and provide information on opportunities to the private sector. Surveys of the networks should be carried out to gain a better understanding of the true situation of the lines, in terms of investment needs and reliable market surveys of users' intentions, the competitive position of rail compared to other modes, and ability to pay.

Rehabilitation priorities are to reopen rail lines to facilitate the resettlement of the displaced rural population and to transport agricultural and mineral production to markets. Access to the main traditional agricultural and mining regions, such as the Luanda and the Central and Southern regions, is essential for future economic development. However, realistic estimates must be made of the likely future regional and export/import trade from these sectors, as well as the role that rail will play.

After the National Assembly's approval of the Base Law of Surface Transport, there will be a further need to pursue the overhaul of current legislation, and the development of a legal framework for rail operations and concessions that reflects the opportunities and constraints of the present publicly owned, vertically integrated companies through a new railways act. This should clarify the reserve conditions of infrastructure ownership for public and private rail services operations. Moreover, to attract the private sector, a clear system of subsidies according to passengers transported must be defined. Allocation and payment of subsidies to operators must be timely to facilitate sound financial management. These measures need also to be considered in terms of their cost-effectiveness, taking account of competition from other transport modes.

There needs to be an initial emphasis on commissioning feasibility studies for suburban rail operating concessions to analyze the possible PPI opportunities for the main suburban lines, i.e., Benguela–Lobito and Luanda–Cacuaco–Viana.

Medium- and longer-term studies should also be commissioned along with multimodal studies to undertake technical, economic, institutional, and financial studies of the viability of involving private interests in the three lines, Luanda to Malange, Lobito to Luau via Huambo, and Namibe–Menongue via Lubango.

Studies should rigorously assess the demand for transportation of agricultural and mining products, fuel, and imported goods for the hinterland and for other countries, and the role of competing modes, particularly road transport.

### **Ports**

The Port of Luanda is one of the most prominent examples of private sector participation in Angola; the letting of second-stage concession contracts is in process for the main port activities. However, measures need to be taken to reduce delays in port operations. Most of the delays are related to importers' financial constraints for payment of duties. Therefore measures need to be taken to expedite procedures, in association with the Customs Authorities, to clear the cargo faster, using increasing penalties for those goods not cleared by the importers in due time.

It is understood that the reconcessioning of the Port of Luanda is under way. Tenders or negotiations for four terminals in the Port of Luanda need to be finalized. Moreover, the concession for the Port of Cabinda also needs to be completed. Lessons learned from the experience of early management contract forms and later concessions in Luanda could be applied to opportunities in the other ports when demand is sufficient (although low volumes now indicate private interest is unlikely except for service contracts without revenue risk).

An interesting strategy that could develop is for the opportunity of multimodal connections in the Port of Luanda. In coordination with CFL and within a larger project for the rehabilitation of the Luanda suburban rail system, a study should examine the feasibility for the development of rail evacuation of container and bulk cargoes, and the redevelopment of the CFL marshalling yards in central Luanda.

### **Airports**

During the period of hostilities domestic air traffic expanded due to the extremely poor conditions of the other transport modes. As the road (and possibly rail) networks are rehabilitated, there will be considerable uncertainty about the demand for air transport; general economic development will lead to growing demand but, on the other hand, some traffic will be lost to other modes. These demand uncertainties will make planning difficult and increase risks for PPI.

Rehabilitation priorities are to improve the functioning and facilities of Luanda and major provincial airports, including runways, parking space, and terminals. Beyond this there is a requirement for changes and enactment of certain necessary legislation. Through data collection and technical studies, clarification is sought for the sector as a whole as to where private investment can be made. The Law of Delimitations indicates and it should be confirmed or clarified whether the main airport infrastructure such as (i) runways and (ii) terminals is in “absolute reserve.” There is likely to be a need to overhaul and complete the legal framework for the introduction of PPI in airport operations and concessions, to bring the opportunities into line with GOA policy for the sector.

As with all other main infrastructure sectors, the establishment of an independent economic regulator for the airport sector (National Institute of Civil Aviation) should be completed with powers to set prices of airport services and to protect private sector suppliers and users of services from unwarranted commercial exploitation. The emphasis should be for the regulator to set cost-reflective prices as far as possible subject to constraints.

In furthering the environment for private sector participation, it is strongly advised to incorporate ENANA management, even if it is kept state-owned. This will help in improving transparency and determining the expected rate of return on airport infrastructure.

Once the minimum steps have been undertaken as highlighted above, the opportunities for concessioning Luanda airport passenger and cargo terminals and some of the provincial airports should be analyzed by commissioning detailed technical and financial studies. This will be a valuable source of information for potential private sector investors. Table 8.4, lists the transport recommendations.

## Telecommunications

The telecommunications sector in Angola, as in many other countries, is at the forefront of the involvement of the private sector compared to other infrastructure sectors. However, the liberalization in the sector has not proceeded as fast as might have been initially planned. The incumbent, Angola Telecom (AT), has

made only modest steps towards restructuring. Concerning Angola Telecom privatization, the GOA has taken some actions such as the diagnosis of the basic network, the study for the economic and financial restructuring of Angola Telecom, the recent appointment of a committee to study the action plan to implement the incumbent’s privatization, and the preparation of a performance contract.

The major PPI development has been the introduction of a private, competing mobile service provider, but the growth of connections has been hindered by the structure of the sector and the general difficulties of investment in Angola. A more recent development has been the issuing of four new fixed line licenses to private operators.

It is clear that measures including the refinement of the legal framework need to be taken to promote private sector investment in the infrastructure of the “basic network.” A proactive approach in the medium term would be to enact legislation that defines the basic network as controlled reserve as opposed to absolute reserve, thereby allowing a partial privatization of Angola Telecom and acceptance of a strategic foreign partner. At the moment, with the existing law, AT reserves the right to provide for interconnection of various operators. This needs to be modified since AT is struggling to cope with current connections, and the forecasts for the future are of further robust growth.

Clarity is lacking in some of the legislation. There needs to be clearer definitions of the concepts of basic network, support services to public telecommunications networks, and nationwide fixed telephony services. Furthermore, it is important to make apparent the relationships (boundaries) between these definitions.

INACOM has been established and does have some real powers; however, there is still a requirement to improve the regulatory structure. This warrants a review of INACOM’s current statutes to ensure that it is legally an independent entity. To this end, it is also required that there be further clarification between the roles of MCT and DNT and their corresponding relationship with INACOM. Hence, clear roles for the governmental institutions will foster a more transparent institutional environment, which will be perceived as very positive by potential private sector investors.

<b>Table 8.4 Recommendations: Transport</b>			
Action area	Short term	Medium term	Long term
<b>All transport</b>			
Data collection, studies	Carry out multimodal studies in each transport corridor to develop integrated transport plans for the development of each mode		
<b>Roads and highways</b>			
Data collection	Improve data collection in order to understand the present condition of roads and bridges and the nature and volume of road traffic; make information available to the private sector	Consider road transport planning on a regional or network basis rather than provincial basis	
Political commitment	Determine expenditure priorities in rehabilitation, e.g., to reopen trunk routes to facilitate the resettlement of displaced rural population Revive the Road Fund	Focus on investments to get agricultural and mineral production to markets Establish an independent governing body of the Road Fund and appoint its members from all stakeholder groups	
Legislation	Complete the restructuring of the Road Fund legislation and bring up to date, including the appropriate institutional framework	Clarify “reserve” conditions of infrastructure ownership and road services operations	Set legal framework for private involvement in road maintenance, construction, and operation, including for concessions based on tolling, shadow tolling, and performance-based contracts
Cost covering tariffs— Road Fund	Revise the basis for allocating revenues in the Road Fund, establishing rules for financing maintenance, rehabilitation, and construction	Consider the phasing out of subsidies to motor vehicle fuel and the introduction of appropriate taxes on fuel; ensure that other taxes on vehicles are paid to the Road Fund	
Starting PPI in roads maintenance	Privatize the INEA Brigades into road construction and maintenance enterprises and heavy equipment rental companies	Establish the best budget and procurement practices to create confidence in the private sector	
Tolling, shadow tolling, and performance-based concession contracts	Analyze opportunities for shadow tolls and performance-based contracts	Undertake initial tolling contracts	Expand the concessioning of tolled bridges, and tolled and shadow tolled roads, on heavily trafficked routes
Institutional capacity building	Improve INEA technical, managerial, and operational capacity		
<b>Railways</b>			
Data collection	Improve data collection in order to assess the present condition of rail lines and bridges and traffic demand	Complete surveys of the networks to improve understanding of investment needs	
Political commitment	Priorities in rehabilitation are to reopen rail lines to facilitate resettlement and access to the main traditional agricultural and mining regions	Establish an institutional framework capable of introducing a modern railway operation	Consider the vertical separation of the existing railway companies and the basis for concessioning of rail operations



<b>Table 8.4 Recommendations: Transport (continued)</b>			
Action area	Short term	Medium term	Long term
Legislation	Revision of the current legislation, setting a legal framework for rail operations and concessions		
Clarification of subsidies systems		Establish a clear system of subsidies defined and targeted at specific social groups; payment of subsidies must be in due time	
Suburban rail operating concessions	Analyze opportunities for suburban lines to identify any that may attract PPI		
Studies of potential long-distance concessions		Analyze and assess possible PPI interest for the three lines, Luanda to Malange, Lobito to Luau via Huambo, and Namibe–Menongue via Lubango	
<b>Ports</b>			
Reducing delays in port operations	Expedite procedures in Luanda port, in association with Customs, to clear the cargo faster		
Concessioning tenders	Finalize tenders or negotiations for four terminals in the Port of Luanda, and the concession of the Cabinda port	Analyze opportunities for other ports	
Multimodal connections in the Port of Luanda		Examine the feasibility of rail evacuation of container and bulk cargoes, and redevelopment of the CFL marshalling yards	
<b>Airports</b>			
Data collection, demand studies	Assess traffic demand, provide information to the private sector		
Political commitment	Clarify policy on role of PPI in airport rehabilitation and development		
Legislation and economic regulation	Clarify for the sector as a whole where private investment can be made, and confirm whether main infrastructure such as (i) runways and (ii) terminals are in “absolute reserve”	Complete the legal framework for the introduction of PPI in airport operations and concessions	Complete the establishment of an independent economic regulator for the airport sector (National Institute of Civil Aviation)
Cost covering tariffs	Review airport user charges; seek charges consistent with the costs of the resources engaged in the services		
Incorporate ENANA	ENANA management, even if kept state owned, should be entirely incorporated	Provide guidelines for the expected rate of return on airport infrastructure	
Airport concessioning		Analyze opportunities for concessioning Luanda airport passenger and cargo terminals and provincial airports	Tender the concessions

The incumbent operator has not yet been fully prepared for the liberalization of the sector. AT should become a commercial company, with public capital. AT should keep the basic fixed line services as its core business but all other services (mobile, data, TV, and so on) should be run by autonomous subsidiaries. However, even fixed line services are not necessarily a complete monopoly activity, especially with technological progress on fixed wireless services that allow for competitive services to emerge. Restructuring AT management and finances should take place in the short term, otherwise there is the risk that AT will lose its market value, so that its partial privatization will not bring the needed cash for AT development. In the future, AT (basic services) will face strong competition not only from other fixed line operators but also from mobile services.

To continue the reform and liberalization process, there is a need for transparency in investment and operating costs. AT should be restructured and unbundled into separate incorporated business units. This would aim to enhance the necessary efficient signals for prospective investors and encourage the initiation of strategic partnerships. In this regard it is quite essential that AT prepare a long-term investment plan to highlight the necessary investment and financing needs to meet the objective of increased service and coverage of the network. Generally, the mobile network business is much more profitable than the fixed-line network; therefore it is advised that any strategic partner should be involved in both segments, since fixed line communications on their own would be relatively unattractive.

It is a universal requirement for all sectors that there should be an increase in the number of strategic studies, feasibility studies, and data collection from a census, for example. This process has been initiated with the government's White Paper on telecommunications liberalization. However, it may be useful for INACOM to assume a more communicative role by producing its own studies for use by the private sector.<sup>13</sup>

Once the restructuring and incorporation process has taken place, AT will be in a position where it can be privatized. This process could be started by associating AT with a strategic partner to begin with, allowing the company to assume an increasing role over time, thereby progressively building equity in its own position in the company. This could be done through a

phased private participation contract, for example. Management of the new business units should also be given the autonomy to make decisions, particularly in areas where the potential exists for outsourcing, leasing, and other service contracts, which should be encouraged as much as possible.

Regional integration is a keen objective in Angola, and this gives additional emphasis to the need for the development of a National Fiber Optic Backbone Network (NFOBN) as a means of facilitating interconnection among all the regions of the country and among operators/service providers. AT should focus on this objective in its long-term strategic plan and identify barriers, opportunities, and necessary arrangements to bring this project to fruition in partnership with the private sector, since major private financing is likely to be required.

The general approach to the respective roles of AT and the private sector is as follows:

- The backbone is considered as the incumbent's responsibility
- AT to open an international tender for that backbone
- Tenderers are requested to propose a financing scheme
- The GOA and AT will negotiate the loan.

A national interconnected network will bring benefits for all existing operators, particularly with respect to interconnection issues and open up the market for fixed line communication to the rest of Angola. However, there may be a need initially to have the GOA's involvement in providing guarantees of foreign creditor loans to kick-start the project. Any such loans should be free from clauses of origins, so as to maximize the potential private sector input.

In the mobile segment Unitel has not yet brought real competition. Both AT and Unitel mobile networks remain saturated for long periods of time. Capital and capacity shortages as well as service differentiation are limiting competition. The mobile communications market is a fast-growing segment of the telecommunications business and has relatively lower fixed cost requirements. The GOA needs to improve further the conditions for real competition in mobile services, launching an open tender for a new mobile license.

<b>Table 8.5 Recommendations: Telecommunications</b>			
Action area	Short term	Medium term	Long term
General legislation	<p>Immediate action to redefine the infrastructure of basic network to become state-controlled reserve, to allow partial AT privatization to a strategic partner</p> <p>GOA to create incentives (custom and tax reductions) to telecommunications operators</p>	<p>Eliminate restrictions to telecommunications infrastructure ownership and in general to telecommunications full liberalization</p> <p>Implement legislation to allow full liberalization of telecommunications market</p>	
Sector legislation	<p>Clarify the concepts of: basic network, support services to public telecommunications networks, and nationwide fixed telephony services and their corresponding PPI opportunities</p> <p>Make clear what are the services to be provided by the newly licensed fixed line operators</p>	<p>Start full telecommunications market liberalization</p> <p>Harmonize all the sector legislation to near future full market liberalization</p>	
Sector organization	<p>Revise MCT statutes. Establish a clear and transparent delimitation between policymaker (Ministry—DNT) and the Regulator (INACOM)</p> <p>Revise INACOM's statutes to ensure regulator's independence.</p>		
Regulator	<p>MCT to appoint INACOM's Board</p> <p>Start monitoring quality of service, pricing policies, numbering, and interconnection, etc.</p>	<p>Ensure further regulation of AT to speed up interconnections</p>	
AT privatization	<p>Incorporate AT</p> <p>Separate the core (voice fixed services) from other business areas into independent subsidiaries</p> <p>Strategic partnership with an experienced mobile international operator; through Movitel partial privatization</p> <p>Implement performance contract between GOA and AT</p>	<p>Start AT (fixed lines) privatization, selling to a strategic partner a stake for the core business (nationwide voice fixed services)</p> <p>Implement AT's management and financial restructuring</p>	<p>Complete AT privatization</p>
AT funding	<p>AT to prepare a long-term investment plan (15 years), to ensure company viability and the feasibility of NFOBN</p> <p>AT to get credits in the domestic market</p>	<p>GOA to provide funds to AT, through the state budget and/or foreign credit loans. In the latter case, GOA to become the Guarantor. Such loans to be free from clauses of origin</p>	
National Fiber Optic Backbone Network (NFOBN)	<p>Start the process of tendering a NFOBN</p>	<p>Installation and commissioning of backbone</p>	<p>Final installation and commissioning of backbone</p>
Mobile services	<p>Start the process of launching an open tender to license a third mobile operator</p>		

Further private sector participation has recently emerged with the letting of four new fixed line licenses to private operators.

Some of the actions in table 8.5 are foreseen in the White Paper, but their implementation has been delayed and needs more impetus. Most of the key actions are required in the short or medium term as, in the longer term, it is expected that the sector will be fully liberalized.

#### Notes

1. New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards. A party that has ratified the Convention agrees to permit the enforcement within its jurisdiction of arbitral decisions reached in the jurisdictions of other convention countries.

2. The proposed LNG project could provide such an opportunity; the plant will need its own power generation and additional capacity could be provided to supply local consumers.

3. Compared with others in the region.

4. Apart from the Capanda hydropower scheme, which is under construction.

5. ROT and ROO arrangements would also require state guarantees under current circumstances.

6. An option that might avoid long-term PPAs is container-mounted, small diesel generators. Because these can be moved quickly if the buyer does not pay, they can be installed without significant government guarantees; however, the generating cost can be very high.

7. Another opportunity might be the proposed LNG project in Soyo.

8. ENE's distribution activity.

9. Paragraph 131.

10. Wholesale tariffs could be increased monthly or quarterly, but retail tariffs to consumers should probably increase only every six months or at most quarterly.

11. The General Electricity Law (Law 14-A/96).

12. See box 3.2 in chapter 3.

13. If these were sold to the private sector, it could be a small further source of revenue to INACOM.

## Appendix A Independent Regulation

### Conditions for Independence

Independence of a regulator from policymakers can never be absolute, but in practical terms it means that regulation is distanced from policymaking with safeguards to allow it to take and enforce decisions without undue political interference. A set of safeguards considered necessary to underpin independence is listed<sup>1</sup> in table A1.1. There is no precise definition of independence but the table provides an indication of the issues that affect independence. The table indicates that some of these safeguards should have relatively greater importance than others in their relevance to conditions in Angola.

A further condition necessary to support the independence of the regulator is to have adequate and effective procedures for dispute resolution and appeals. If there is a dispute or appeal against a regulator's decision, it should be dealt with in the first instance by the regulator's own procedures. The procedures should be speedy and fair, aiming to solve most of the disputes brought to the regulator.

If the dispute is taken outside the regulator to the judicial courts or, worse still, to the executive for a Minister's decision, it will undermine the regulator's authority and could lead to a situation where parties ignore the regulator and wait to take their case to the courts or the Minister.

#### *How Important Is Independence?*

A well-established regulatory framework is one of the key building blocks that a private investor (and the

banks providing their finance) seek to create a stable and predictable business environment for long-term investment. Independence is a particularly important quality for a regulator who regulates prices and other key conditions for the operation of privately owned utilities; it gives assurance to the private companies and investors that revenues will cover costs and provide a reasonable return on investment.<sup>2</sup> A politically dependent regulator is likely to be influenced by short-term political factors, usually to maintain low prices that often override the interests of investors and ultimately lead to a long-term decline in investment and deterioration in the utilities' performance.

Independence is less important where the utility is state-owned and where the state is the shareholder of the utility, though it does remain of considerable importance to commercial banks that need assurance that their loans will be serviced. In the absence of an independent regulator, banks will seek stronger sovereign guarantees. Independence is also less important to private investors where their revenues are determined through long-term contracts, though again they will seek some assurance that the buyer will have the revenues to meet their contractual commitments.

#### *The Value of Independence Depends on Other Conditions*

For the independence to be fully effective, other conditions need to exist:<sup>3</sup>

- Effective political and economic institutions
- Separation of powers, particularly between the executive and the legal system
- A well-functioning legal system and sound courts

Safeguard	Importance and relevance to Angola
Providing the regulator with a distinct legal mandate, free of Ministerial control	Yes. This is one of the key necessary conditions that define an independent regulator: The regulator should report (e.g., annually) to a representative body such as Parliament.
Prescribing professional criteria for appointment	Yes, although it is difficult to define professional criteria precisely in Angola without excluding most candidates. More important is that the appointment should be based on competence rather than politics.
Involving both the executive and the legislative branches in the appointment process	It is common for the executive branch to propose candidates and the Parliament to approve. Approval by a representative body such as Parliament helps to diffuse the strength of individual lobbies.
Appointing regulators for fixed terms and protecting them from arbitrary removal	Yes, this is one of the most important factors. The regulator should be protected from dismissal except for medical or other reasons preventing him from performing. In the absence of this safeguard, even if the regulator is nominally independent, the threat of dismissal will ensure it is not independent.
Staggering terms so that they do not coincide with the election cycle, and, for a board or commission, staggering the terms of members	Where there is a commission with more than one member or a board, staggering appointments ensures that there is continuity in decision-making and the complexion of the regulator cannot be changed overnight.
Exempting the agency from civil service salary rules that make it difficult to attract and retain well-qualified staff	It is important to be able to pay salaries comparable to those of the utilities they regulate, but this is not easily resolved if regulators are civil servants and tied to civil service salaries.
Providing the agency with a reliable source of funding, usually earmarked levies on regulated firms or consumers	It is essential that the regulator have an independent source of funding not dependent on the annual state budget. License fees are a common source of income. Sometimes it is necessary for the regulator's initial budget to be covered by the state budget until fees are sufficient.

- A good commercial law framework and some competition policy basis
- A supply of well-qualified staff able to conduct the various functions
- A functional commercial framework.

There are clearly weaknesses in all the above areas in Angola. This does not mean that attempting to create independent regulators is not worthwhile; on the contrary, it implies that independent regulation could make a useful contribution to building confidence in

the regulatory environment to compensate for some of the inadequacies elsewhere.

#### Notes

1. The World Bank Group, *Viewpoint*, October 1997; Utility Regulators—The Independence Debate, by Warwick Smith.
2. Providing that the investments have been properly made.
3. Jon Stern, *Styles of Regulation: The Choice of Approach to Utility Regulation in Central and Eastern Europe*, London Business School Discussion Papers, November 1999.



## Appendix B Multi-Utility Regulator

Multi-utility regulatory agencies (public utility commissions) are universal in the U.S. These regulators have quasi-judicial powers, normally with a five-person commission that is supported by technical staff.

Outside the U.S., the privatization of utilities or opening of markets to private participation began in the larger countries such as the UK, Argentina, and Chile. Different sectors were privatized at different times often separated by several years. The large size of the countries meant that regulatory agencies needed to be large and the scope for staff and resource savings by combining sectors under one regulatory agency was limited. This, together with separation in time of the privatizations, meant that regulatory agencies tended to be established separately for each sector.

As utility sector liberalization extended to smaller countries, multi-sector utility regulators began to appear outside the U.S. in countries such as Ghana, Guyana, Jamaica, Latvia, and Lithuania.

The advantages<sup>1</sup> of having a *single regulator* covering several sectors are:

- Resource sharing and therefore cost saving;
- It allows the experience gained in one sector to be used in other sectors;
- It gives the regulator increased confidence in confronting powerful utilities or resisting political pressure; and
- It allows smoother decisionmaking over issues that straddle two or more sectors (e.g., regulation of multi-sector utilities).

The advantages of a system of *separate regulators* each responsible for a separate sector are that it:

- Permits comparative performance among different regulators;
- Does not concentrate power within one body;
- May provide greater transparency in decisionmaking over issues that straddle two or more sectors; and
- Recognizes some different regulatory requirements in different sectors.

There is no universal answer to whether there should be one multi-utility regulator or several single-utility regulators. However, the relative importance of the different factors that favor single-utility or multi-utility regulators depends heavily on the country's size and the human resources available.

For small countries, such as Jamaica (population 2.5 million) or Guyana (population 800,000), the constraints on human resources dominate the decision. For larger countries, the benefits of single-utility regulation may be more important than resource saving. For medium-sized countries, the choice is less clear.

Angola is a middle-sized country with a population of 12 million. However, Angola has major constraints as to the availability of personnel with management and business skills. The same constraints would be magnified in relation to personnel with the economic, accounting, technical, and legal skills required to run several single-utility regulatory agencies. We therefore recommend the development of one or two multi-utility agencies

(with a separate transport regulator in the second case). If Angola were to create separate regulators for water, wastewater, electricity, natural gas, telecommunications, airports, seaports, rail, toll bridges, and postal services, there would be major constraints on human resources to fill these organizations. The two options in Angola are:

- One regulator:
  - Multi-utility: electricity (piped gas, if it develops), water, wastewater, telecom, rail, airports, and ports (toll roads or bridges if they develop)
- Two regulators:
  - Multi-utility: electricity (piped gas, if it develops), water, wastewater, and telecommunications
  - Transport:<sup>2</sup> rail, airports, and ports (toll roads or bridges if they develop)

The solid waste regulation in Luanda is presently the provincial government's responsibility; we recommend that this arrangement continue. The implementation of multiple contracts to replace the Urbana 2000 exclusive contract is urgent and should not await the establishment of a multi-sector utility regulator. However, at a later stage, when the multi-utility regulator is fully operational, it may make sense for the regulation of solid waste (for other urban centers as well as Luanda) also to become part of its mandate.

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#### Notes

1. See, for example, *Utility Regulators—Roles & Responsibilities*, Warwick Smith, Public Policy for the Private Sector, 1997.
2. Possibly including buses and taxis.

## Appendix C

### Targeting Subsidies

Given the subsidy-ridden environment in Angola, this annex sets out some general guidelines for performance-related subsidies [also referred to as Output Based Aid (OBA) and “smart subsidies”] and how these work with private operators. It applies particularly to network services such as electricity, but also to the other infrastructure sectors.

Governments tend to justify subsidizing infrastructure services to provide these benefits on equity grounds (since services such as electricity and water are more affordable in higher income urban areas, access to infrastructure services needs to be subsidized in poor areas), and development grounds (poor areas cannot afford the costs of access to electricity and water, but basic infrastructure services are needed to support economic and social development). In other words, subsidizing infrastructure services is seen as one of the ways of correcting for biased income distribution.

However, finding the right way to inject subsidies to improve incentives for efficient project implementation and management has proved elusive. In the worst cases, subsidies have created perverse incentives resulting in increased losses<sup>1</sup> and weakened financial sustainability.

Therefore, the key problem is how to deliver subsidies that give incentives to profit-motivated companies to supply communities in areas where the capital costs, the operating costs per customer, and losses are high, and revenues are low. In addition, the potentially large number of such schemes and their small size<sup>2</sup> make it time-consuming and expensive to implement and regulate. These issues are discussed in four areas:

1. Designing incentive structures
2. Structuring of subsidy flows
3. Procurement of contracts—competitions
4. Monitoring and regulation of contracts

#### Designing Incentive Structures

It is increasingly apparent that many of the highly centralized approaches to infrastructure investment fail because of the poor incentives. In the typical centralized approach, the state-owned monopoly utility carries out investment to improve access in low-income and low population density areas as a function within its distribution activity and is the monopoly investor, owner, and operator. There is no separation of business activity or accounting. The activity may be loss making and is often viewed unfavorably from a commercial and technical standpoint (the utility prefers big infrastructure projects to small rural projects). These losses are absorbed within the centralized accounts or compensated by a subsidy, which disappears into the centralized budget and is not properly earmarked for infrastructure investments.

In this type of centralized structure there are weak incentives to carry out infrastructure investment projects efficiently, often resulting in overstaffing, bureaucratic procedures causing delays, and expensive purchasing. Since each new consumer could be an additional loss, the utility is in no hurry to make new connections. Where losses are compensated retrospectively through an annual budget, there is a lack of financial discipline to reduce losses.

Decentralization of various responsibilities such as ownership, operation, and regulation provides opportunities to inject incentives that promote efficiency through the various stages of the project cycle. Decentralization also involves bringing in new players: e.g., local involvement through cooperatives, various forms of private sector participation in investment and management, small businesses offering private delivery of services (e.g., for off-grid electricity systems and potable water supplies), and independent rural agencies for funding or regulation.

### Structuring of Subsidy Flows

Smart subsidies are delivered through targeting assistance on measurable performance indicators or contracting for service delivery (also known as OBA contracting). While targeting in some form has been a component of most subsidized infrastructure projects, OBA contracting is a more recent and promising development assistance concept. There are a growing number of pilot schemes and proposals in the pipeline that incorporate OBA contracting elements and that should provide a learning base on which to develop full OBA approaches in the future.

OBA schemes should be most effective where subsidies are disbursed for actual performance against output measures. For Angola, output measures might include:

- Numbers of connections, where the company has obligations to supply all consumers who want the service and who are willing and able to pay the

required (subsidized) costs in a given area (grants for providing access)

- Aggregated supply of groups of households or villages in a specified area, but subsidies are provided en bloc rather than per building or house
- Installation of service points (water tanks or photovoltaic, for example) in houses or buildings.

Other performance areas include efficiency improvements in reduced losses and improved revenue collection. However, these areas are more complex to measure and we are not aware of any aid disbursement directly linked to them.

Subsidy could, in principle, be directed toward either capital expenditure or operating expenditure. However, experience strongly indicates that operating subsidies can damage incentives. Whereas aid for capital expenditure has a directly measurable benefit in terms of increased access or new connections, aid to cover operating losses results in poor financial discipline (the larger the loss, the larger the aid) and deteriorating financial performance. Organizations dependent on operating subsidies are highly vulnerable to any reduction in aid availability, which creates a disincentive to provide supplies to new customers.

Most successful subsidy schemes are delivered as capital grants for the improvement in incumbent infrastructure access or the installation of new supply points (e.g., water wells or small generators). They are also delivered for increasing the access to consumers. In some instances they are delivered as subsidies for the rehabilitation of networks.<sup>3</sup> Another issue concerning

Table C1.1 Designing Incentive Structures		
Elements of structures	Description	Problem addressed
Investment and ownership responsibility	Allocating responsibility for investment decisions so that the party who has to bear the costs also benefits from the investment	The owner of equipment does not benefit from efficiency improvement and therefore has weak incentives to invest.
Clear, simple criteria for project selection	Setting of transparent and objective criteria	Selection of financially viable projects, efficient allocation of subsidies, avoidance of political interference
Demand-based project selection	Decentralization and promotion of private initiatives, projects prioritized according to local financial contribution	Ensures demand exists and improves financial viability and sustainability of infrastructure investment program
Local participation	Local and private organizations participate in financing and management	Improved incentives for universal access, better maintenance and management

Option	Description	Problem addressed
Capital grants disbursed for providing access to service	Grants are provided for providing access to a village but not per consumer.	Responsibility to register for service is given to the consumer.
Capital grants disbursed for connection of consumers	Grants are provided per connection achieved.	Utility responsible for ensuring that take-up of service is high.
Contributions from local communities	Projects prioritized according to financial contribution from local sponsor; funds may be prorated to local contribution.	Ensure schemes are economically worthwhile and likely to be financially successful
Disbursement rate and milestones	Payments linked to actual performance	Direct incentive to meet obligations

the structuring of subsidy flows is the disbursement rate and its linkage to performance achievement, without jeopardizing the project's financial viability.

Targeting aid on specific outputs has been a feature of many infrastructure investment programs. However, there have been a number of problems when targets are not sufficiently clearly defined or monitored, or where the supporting infrastructure for delivery of utility services is absent. Subsidies that are targeted at equipment installation may end up supporting the better-off households rather than the poor, since they are the ones better able to afford their share of the costs. OBA could increase that tendency since it increases the incentives for delivery, regardless of the ultimate beneficiary.

It is essential that when a country such as Angola follows a target-oriented approach, there is still a risk that the infrastructure is poorly constructed or household connections not made, so that little supply actually

gets to consumers. If there is a lack of an adequate supporting institutional framework, the specific target may be achieved, but the delivery of the service may not be.

### Procurement of Contracts—Competitions

Infrastructure investment schemes should introduce some element of competition with the grant linked to the number of new registered consumers. The competition can be based around, e.g., the lowest grant to supply a given number of consumers or the largest number of consumers for a set amount of grant.

In some cases the competition gives the winner the franchise to supply all potential consumers in a given area (exclusive franchise), but in others it only gives the winner the responsibility to supply the nominated villages or households (i.e., open entry in which other competitors could supply further consumers).

Option	Description	Problem addressed
<b>Exclusive franchises</b>		
No competition for grant	Subsidies are paid to utilities/cooperatives with territorial franchises.	Strong supervision required to ensure that subsidies are well focused. It gives no incentive to minimize costs.
Grant competition	Competition for concession to supply designated area	Incentive to minimize costs
<b>Without exclusive franchises</b>		
Grant competition to supply nominated consumers	Bidder asking for lowest subsidy per consumer wins the competition.	Nonexclusive franchise leads to greater competition but risk of cherry picking.
Grant competition to supply maximum number of consumers	Fixed amount of subsidy offered. Bidder offering to connect the highest number of consumers wins.	

## Contract Monitoring and Regulation

Concessions and other models for private sector participation in infrastructure investment create a contractual relation for carrying out certain obligations, which might include the connection of new customers, defined investment levels, stand-alone equipment installations, tariffs, and so on. These obligations need to be regulated. The regulatory function can be fulfilled by the local entity granting the concession, a national regulator, a specific agency, or even the utility (e.g., in the case of technical standards).

Monitoring systems are generally necessary to ensure that subsidies have been used for their intended purpose and disbursed correctly according to agreed milestones. This requires some form of auditing function.

Where a demand-based approach is adopted, the local community will be close to the utility scheme and will be expected to alert regulators or the government if promised programs are not delivered.

### Notes

1. Subsidies have mostly in the past been provided implicitly through price subsidies (e.g., through cross-subsidies or losses absorbed by a state-owned utility. Where there is a state-owned monopoly company it is possible to provide utility services without direct explicit subsidies. This is achieved by cross-subsidizing from urban to rural consumers or from industrial/commercial consumers to rural consumers. This raises the price of the service for urban consumers but allows rural consumers to pay the same price as urban consumers. In practice, many state-owned monopoly companies face tariffs that are kept too low to allow them to further investment and do not receive direct subsidies from the state government. Price subsidies can damage financial discipline by creating a climate of losses, distort the demand for such services, and discourage private participation.
2. In many villages the number of customers ranges from a few hundred to a few thousand.
3. In many countries an implicit subsidy exists between urban and rural consumers. This is the case wherever rural consumer prices are below full cost and urban prices are above.



## Appendix D Power Plants

**Table D1.1** Hydro Power Plants in Angola

System	Plant	Installed capacity (MW)	Availability (MW)
North	Cambambe	180.0 (4*45)	180.0
	Mabubas	17.8 (2*3 + 2*5.9)	–
Central	Lomaum	35.0 (2*10 + 1*15)	–
	Biopio	14.4 (4*3.6)	3.6
South	Matala	40.8 (3*13.8)	13.6
<b>Subtotal</b>		<b>288.0</b>	<b>197.2</b>
Bie	Cunje	1.6 (3*0.54)	–
Uige	Luquixe	1.1 (2*0.36 + 0.4)	–
<b>Subtotal</b>		<b>2.7</b>	<b>–</b>
<b>Total</b>		<b>290.7</b>	<b>197.2</b>

Source: ENE—Sistema Eléctrico da ENE, Reabilitação, Carteira de Investimentos.

**Table D1.2 Thermal Power Plants in Angola**

System	Plant	Installed capacity (MW)	Availability (MW)
North	Gas Turbine	93.2	93.2
	Diesel	83.6	74.4
Central	Gas Turbine	22.0	–
	Diesel	40.2	23.0
South	Diesel	25.6	9.0
<b>Subtotal</b>		<b>264.5</b>	<b>199.6</b>
Cabinda	Gas Turbine	10.5	10.0
	Diesel	21.0	8.8
Huambo	Gas Turbine	10.0	–
	Diesel	5.8	2.8
Bie	Diesel	3.4	1.0
Uige	Diesel	2.2	1.0
Malange	Diesel	3.4	0.7
K. South	Diesel	12.6	2.6
Luena	Diesel	1.1	–
Caxito	Diesel	1.2	1.2
Saurimo	Diesel	2.0	0.9
<b>Subtotal</b>		<b>73.2</b>	<b>29.0</b>
<b>Total</b>		<b>337.8</b>	<b>228.6</b>

Source: ENE—Sistema Eléctrico da ENE, Reabilitação, Carteira de Investimentos.

## Appendix E

### Telecommunications White Paper

### Privatization Steps

**Table E1.1 | Privatization Steps Proposed in the Telecommunications White Paper**

2000	2001	2003–2004	2005
AT financial and economic restructuring	Incorporate AT and revise the AT's existing statutes, accordingly Set up strategies for partnerships with AT Appointment of a non-executive board Sign a performance contract between AT and GOA	Set up a strategic partnership for fixed services and carrier services Strategic partnership for the operation of mobile services and UMTS licensing	Define a privatization policy
<b>What Has Been Done</b>			
The study has been done. Implementation ongoing	AT not incorporated No strategies for partnerships No non-executive board Performance contract under negotiation	By end-2004 the performance contract had not been signed. Ongoing separation of the core (monopoly) functions from new business areas into independent subsidiaries. Movitel for mobile services. Studies to set up a data communications company	

## Appendix F

### Telecommunications Sector Liberalization

**Table F1.1** Preparation for Liberalization

2000	2001	2003–2004	2005
Start law issuance aiming at opening the market to competition	Allow resale of services Allow local fixed services, especially in rural remote areas	Free competition in all the services, except nationwide fixed service Pro-competitive initiatives from GOA, MCT, and INACOM	Preparation for the transition to full competition
Start actual competition in mobile services	Telecom sector to move to less restrictive areas of state reserve	Set up a legal framework allowing telecom sector development in a competitive regime	

**Table F1.2** MCT Strategies and Liberalization

2000	2001	2003–2004	2005
Draft the telecom act	Submit legal documents to regulate telecom market under competition to the Cabinet	DNT to start analysis and monitoring of telecom policies	Evaluate whether sector is ready for full competition
Draft the regulations for public telecommunications services	DNT to concentrate on analysis and monitoring telecom policies and set up corresponding development strategies	Consolidate legal framework for full competition in the telecom market	
Draft rules for access to and provision of public telecommunications services			

## Appendix G

### Angola Telecom Sales

**Table G1.1** Angola Telecom Sales\*

Services	1997		1998		1999		2000		2001		TMAC**
	Value	Percent	Value	Percent	Value	Percent	Value	Percent	Value	Percent	Percent
Fixed line	58.2	54.4	59.5	52.9	61.3	48.9	52.3	49.3	72.4	48.4	4.0
Cellular	23.3	21.8	29.7	26.4	39.7	31.7	31.8	30.0	43.0	28.7	7.7
Telex	1.9	1.8	1.8	1.6	1.4	1.1	0.6	0.6	0.2	0.2	-33.4
Maritime mobile	-	-	0.1	0.1	-	-	-	-	-	-	-25.8
Datex	-	-	0.3	0.3	0.5	0.4	0.7	0.7	0.9	0.6	21.4
International Calls	12.3	11.5	-	-	-	-	-	-	-	-	-
Internet	-	-	0.2	0.2	0.7	0.5	0.8	0.8	1.4	1.0	47.2
Balance with other operators	11.3	10.6	-	-	-	-	-	-	-	-	-
IBS	-	-	2.2	1.9	4.0	3.2	2.8	2.6	2.8	1.9	4.9
VSAT	-	-	0.6	0.5	1.0	0.8	1.2	1.1	2.0	1.3	27.8
TV signal transmission	-	-	0.7	0.6	1.4	1.2	1.4	1.3	1.4	1.0	16.7
Radio signal transmission	-	-	0.1	0.1	0.3	0.2	0.5	0.5	0.7	0.5	45.4
Leased lines	-	-	5.8	5.1	4.1	3.3	2.3	2.2	2.3	1.6	-16.5
Telephone cards	-	-	0.6	0.6	0.6	0.5	0.3	0.3	1.1	0.8	11.9
Telephone directory	-	-	-	-	-	-	0.1	0.1	-	-	-
Sales of branches	-	-	0.9	0.8	8.8	7.0	9.8	9.3	20.9	13.9	88.0
Other services	-	-	10.0	8.9	1.5	1.2	1.4	1.4	0.6	0.4	-43.8
<b>Total</b>	<b>107.8</b>	<b>100.0</b>	<b>112.5</b>	<b>100.0</b>	<b>125.5</b>	<b>100.0</b>	<b>106.1</b>	<b>100.0</b>	<b>149.8</b>	<b>100.0</b>	<b>5.9</b>

\* Value is in US\$ millions.

\*\* TMAC is the average annual growth rate.

Source: Angola Telecom.

## Angola Telecom UTT Sales

**Table G1.2 Angola Telecom UTT Sales\***

Services	1997		1998		1999		2000		2001		TMAC**
	Value	Percent	Value	Percent	Value	Percent	Value	Percent	Value	Percent	
<b>Type of Service</b>											
Fixed line	746.7	55.4	789.3	57.5	857.7	55.4	833.6	57.0	991.4	55.2	4.7
Cellular	291.1	21.6	399.5	29.1	469.2	30.3	439.8	30.1	617.7	34.4	9.1
Other services	310.0	23.0	184.0	13.4	221.5	14.3	188.6	12.9	187.2	10.4	0.3
<b>Total</b>	<b>1,347.8</b>	<b>100.0</b>	<b>1,372.8</b>	<b>100.0</b>	<b>1,548.5</b>	<b>100.0</b>	<b>1,462.0</b>	<b>100.0</b>	<b>1,796.3</b>	<b>100.0</b>	<b>5.5</b>
<b>Service Category</b>											
International calls	975.8	72.4	689.1	50.9	766.5	49.5	745.8	51.0	669.1	37.3	-0.9
Domestic calls	12.6	9.1	435.0	31.7	482.8	31.2	408.1	27.9	725.0	40.4	10.8
Other services	249.3	18.5	161.1	11.7	201.2	13.0	194.3	13.3	220.4	12.3	6.5
Leases	—	—	78.6	5.7	97.9	6.3	113.8	7.8	181.8	10.1	18.3
<b>Total</b>	<b>1,237.7</b>	<b>100.0</b>	<b>1,363.8</b>	<b>100.0</b>	<b>1,548.5</b>	<b>100.0</b>	<b>1,462.0</b>	<b>100.0</b>	<b>1,796.3</b>	<b>100.0</b>	<b>5.5</b>

\* Value is in Telecommunications Tariff Units (UTT); UTT 1.0 = US\$ 0.08.

\*\* TMAC is the average annual growth rate.

Source: Angola Telecom.



## Appendix H

### PPI Approval and Postapproval Issues

Once a project is approved, there is a requirement to deal with the necessary regulations and permits that are common to both national and foreign investors. This process can be quite cumbersome and lengthy and could be an important source of uneasiness for a potential private investor. Box H1.1 highlights some of the bureaucratic issues that have to be dealt with.

**Work Permits** In the case of foreign investors or foreign citizens, the granting of a work permit precedes the opening of a bank account in the name of the company or the single person. In addition, for single persons, and sometimes also for collective persons, the granting of a work permit precedes the request for a permit to exercise the activity.

The work visa is mandatory for all foreign citizens. This visa is granted for a period of one year and is renewable for up to three years at the Angolan Consulate in the country of residence of the citizen applying for the respective work contract, which is to be written in the usual legal terms, curriculum vitae, professional diplomas, health certificate, criminal record, photographs, and passport photocopy. This is to be approved in advance by the Small and Medium Enterprises (SME) (the official service that controls the Angolan borders), upon favorable inspection given by the respective Ministry. The process is submitted to the SME in Angola and, after approval, remitted to the relevant Angolan Consulate abroad to stamp the work visa on the passport.

#### Box H1.1 | Legal Fees and Registration

##### Legal Fees

Legal fees to the IIE used to be calculated as a fraction of contract value, declining from 15/1,000 to 1/1,000 depending on contract size, with a minimum of US\$7,500. These fees are currently being re-assessed by ANIP, the successor institution of IIE.

After the public deed is registered, all the legal fees (0.75 to 1.5 percent of the Statutory Capital) are paid.

Publication of the By-Laws in the *Official Gazette* (cost per page: US\$52.50; waiting period: up to 18 months).

Registration with the fiscal authorities to be made in the residential area of the company's headquarters, which is renewable annually (cost: US\$26.00; waiting time: up to three months).

Commercial registration to be made with the Commercial Registration Office (cost: 0.75 percent to 1.5 percent of the Statutory Capital; waiting time: around three months).

Statistical registration to be made at the National Statistics Institute (cost: US\$20.00; waiting time: around two weeks).

Obtaining the necessary permit to exercise the requested activity; this is to be issued by the Ministry responsible for the respective economic sector (cost: US\$150; waiting time: up to three months)

##### Registration at the Social Security Services

Registration as an Importer/Exporter entity at the Ministry of Commerce (cost: 1/1,000 of the Statutory Capital, plus US\$50; waiting time: around three months)

The granting of a work visa is subject to the payment of a guarantee, which is to be deposited in a bank account in the name of the SME, in a convertible

currency, and amounting to a value equal to the cost of a flight ticket to the origin or usual residence country of the person. The waiting time is undetermined.

Once the work visa is obtained, it has to be registered at the Ministry of Public Administration, Employment and Social Security against a payment equivalent to 5 percent of the monthly salary subject to the relating work contract. The expatriate's work contract cannot be registered without proof that he/she has obtained the work visa. The work visa, as described above, is conceded after a very bureaucratic process that takes an undefined period of time.

**Public Tender** The license and concession granting process has to be preceded by a tender following one of the possibilities defined within the law relating to public procurement (Decree 7/96, 16 February 1996): public tender, limited tender with prequalification, limited tender without expression of interest, negotiation, with or without previous advertisement, and direct award. The easier processes are for less complex and lower-valued public procurement. Because the financial limits for these options are not indexed in the law, all license and concessions applications would fall under the public tender requirements.

The steps for a **public tender** are as follows:

- (1) The tender is advertised in the *Official Gazette* and in a high circulation newspaper, or otherwise through direct communication to previously selected entities, respectively, for public or limited tenders.
- (2) Submission of bids: In both cases the relevant details referred to in the law must be included. Concerning

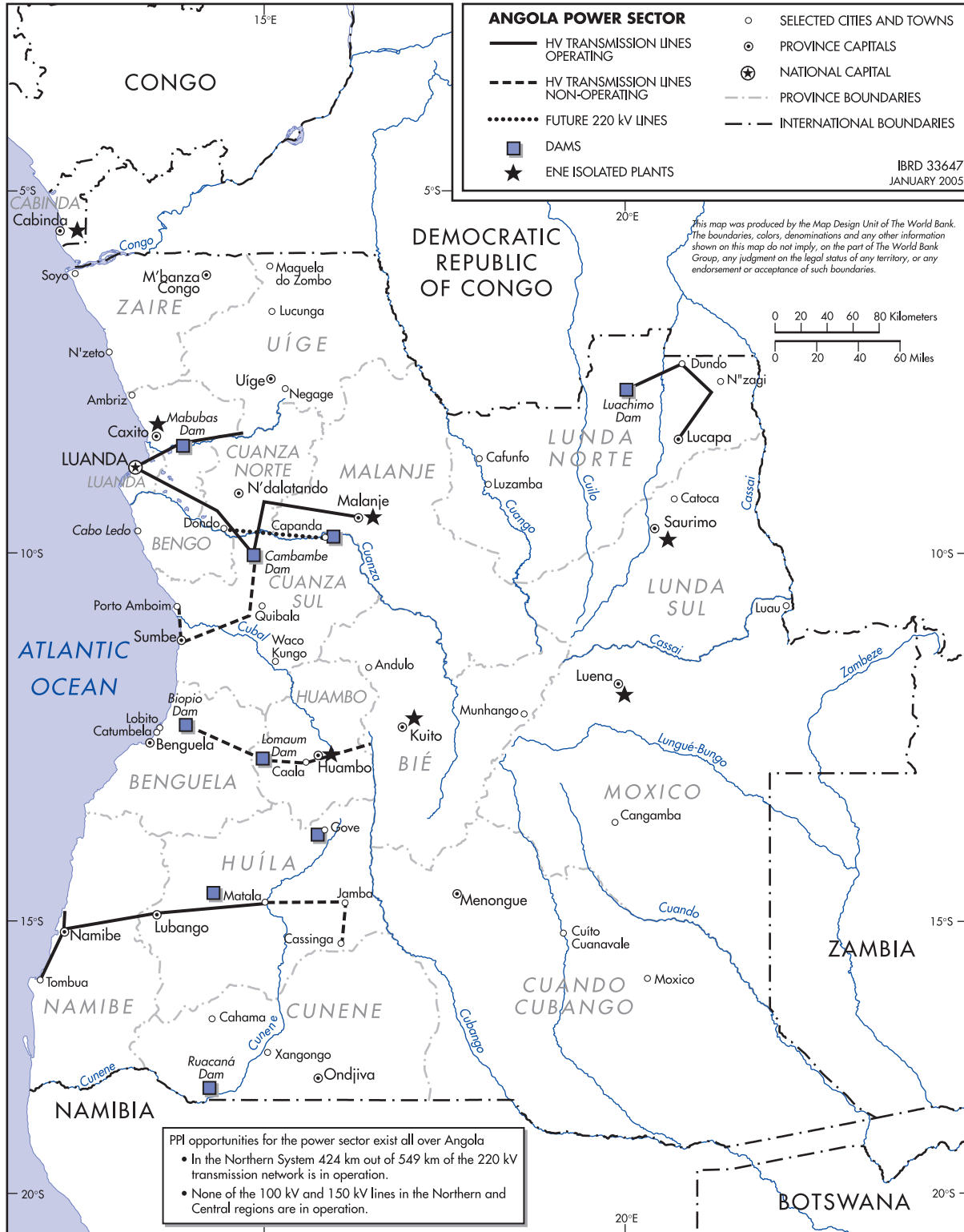
public tenders, a tender program and terms of reference are both mandatory. The latter must contain the technical, legal, special, and general clauses, duly numbered, that have to be included in the contract. Through a bid, the bidder expresses its interest in being contracted and states the conditions under which he is available to sign a contract.

- (3) Establishment of a three-person commission, chaired by the Ministry of Finance, with prescribed steps to scrutinize and evaluate the proposals. The bids are opened publicly before a contract is awarded and the license or concession is granted to the bidder that submits the most economical bid after the evaluation of key factors, such as quality, technical standing, technical assistance, execution or delivery terms, and price, or to the bid with the lowest price.
- (4) Following publication of the decision of the commission (which has to be signed by all members), there is provision for an appeals process. Applications must be submitted within 5 days, and decisions on appeals will be given within 10 days.

In general, a public hearing precedes the licenses and concessions granting process. The umbrella ministries or provincial governments grant licenses, and concessions fall under the sphere of the Cabinet.

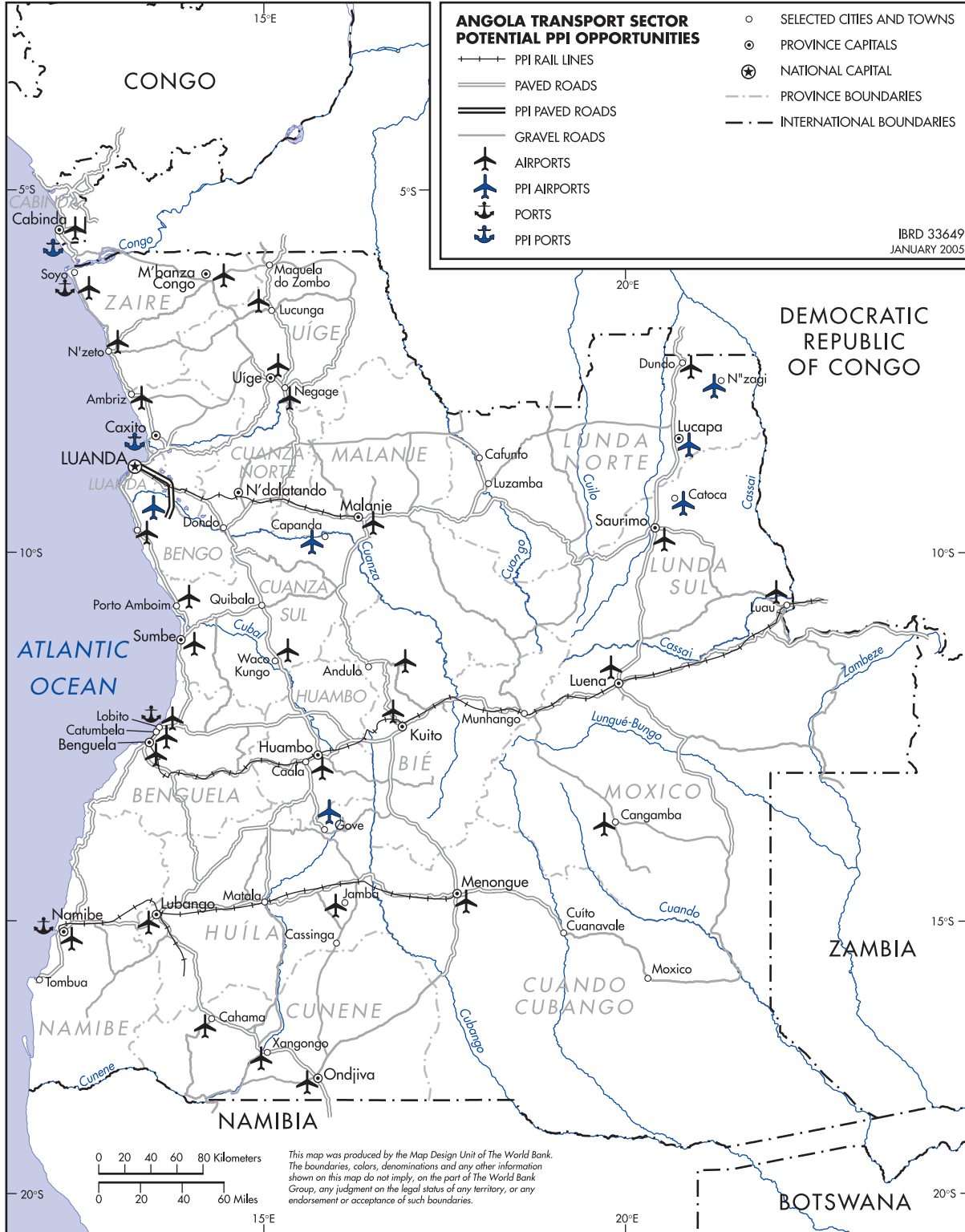
The accomplishment of all these steps, together with the submission of the required proposal to the Foreign Investment Institute (IIE), took at least one year. As a result of replacement of IIE by ANIP, this period will probably be slightly reduced.

# Appendix I

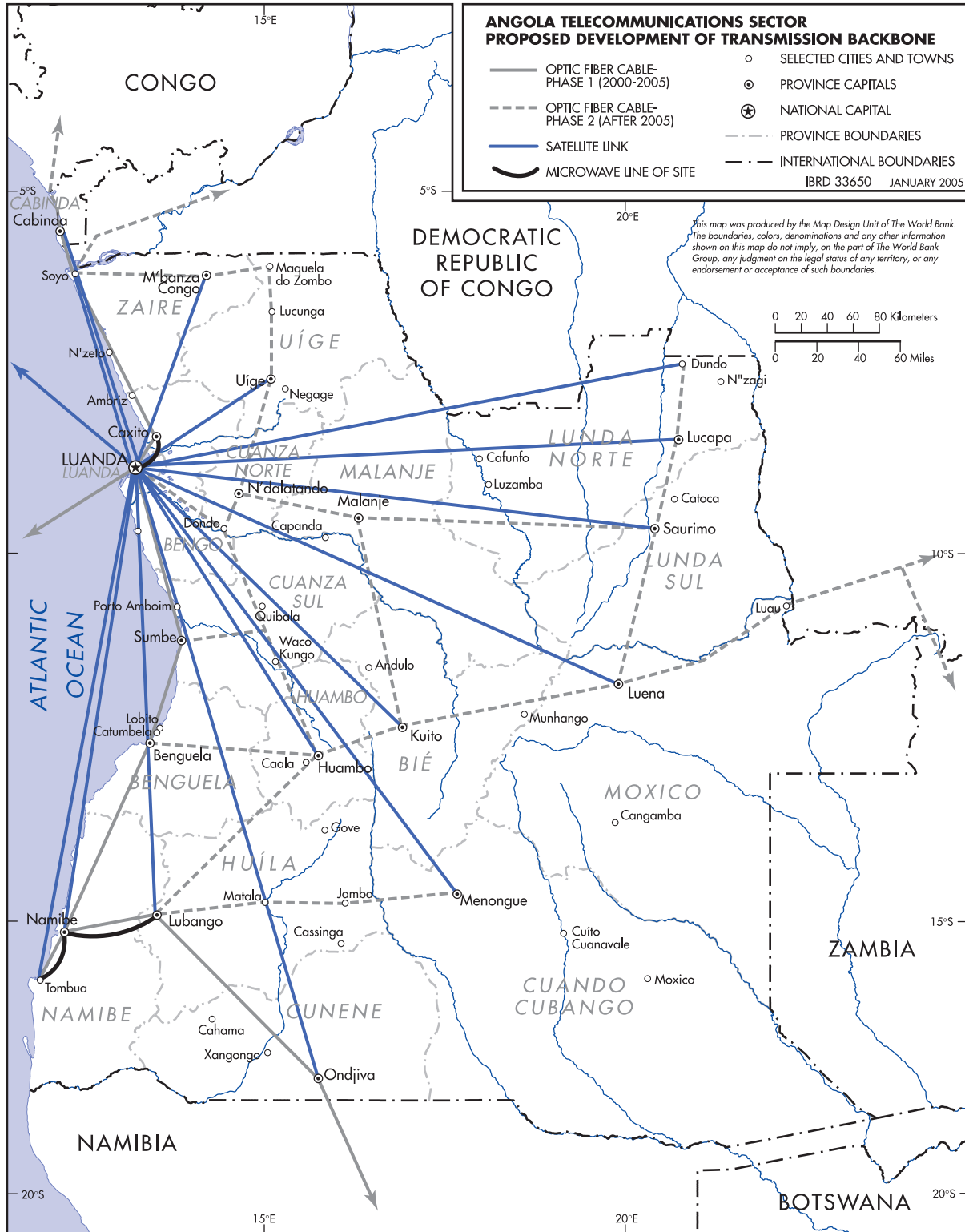




# Appendix K



# Appendix L









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