

# Energy-Efficient Street Lighting PPPs

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Street lighting is an essential public service typically provided by public authorities at the sub-national and municipal level. Cities are increasingly investing in energy-efficient street lighting systems to replace or enhance their outdated systems. While reliable and bright public lighting reduces accidents and crime and allows for economic activity after sunset, modern energy-efficient street-lighting technology can also lower energy consumption as well as operation and maintenance costs significantly. Many different models have been developed world wide to deliver energy-efficient street lighting projects, including public-private partnerships. This section looks at sample contracts, bidding documents, policies, laws and regulations, and other tools related to street lighting projects.

## Sample Contracts, Clauses and Bidding Documents

### **Brazil:**

Belo Horizonte - [Concessão administrativa para a prestação dos serviços de iluminação pública no Município de Belo Horizonte incluídos o desenvolvimento, modernização, ampliação, eficientização energética, operação e manutenção da Rede Municipal de Iluminação Pública](#) – Concession for the development, modernization, expansion, energy-efficiency, operation and maintenance of the municipal lighting network. See also: Impact Story: [SNTA supports street lighting PPPs in Belo Horizonte and Rio de Janeiro](#), PPIAF April 2016.

### **Canada:**

[Request for Proposal – LED Streetlight Luminaire Supply](#) of August 2014. Local Authorities Services (LAS) and RealTerm Energy developed a streetlight replacement program which resulted in 150 municipalities jointly procuring LED public lighting on a turnkey basis. This lowered transaction costs, enabled competitive procurement for the small and medium sized municipalities, and transformed the LED market in Canada.

### **Germany:**

[Package of tender documents for PPP street lighting projects \(\*Verdingungsunterlagen Beleuchtung\*\)](#) developed by Partnerschaften Deutschland ÖPP Deutschland AG.

### **India:**

[Odisha, Greenfield Street Lighting Project – Request for Proposal \(RFP\)](#) of May 2018 for the implementation of the Odisha Greenfield Street Lighting PPP Project for 113 Urban Local Bodies (ULBs) on a PPP Basis. Given the early success of the first phase of street lighting energy efficiency project at Bhubaneswar followed by the Odisha multicity street light project which is currently under implementation, the Government of Odisha has decided to extend the rollout of such projects to all ULBs within Odisha. With this the Government of Odisha also aims to cut the energy bills for ULBs and to provide roads with brighter and more even illumination with increased safety for pedestrians and vehicle drivers. The Project is

envisaged to be implemented under a Public Private Partnership (PPP) model under a seven (7) year annuity based arrangement.

See also [PPP Stories - India: Bhubaneswar – Street Lighting](#), [India: Rajasthan Public Street Lighting](#), [Street Lighting Project, Nasik, Maharashtra, India](#), [Smart Poles and Streetlights, Bhopal, Madhya Pradesh](#), and [Energy-efficient Street Lighting, Bhubaneswar, Odisha, India](#)

### **Mexico:**

Guadalajara – [Leasing contract \(\*Contrato de Arrendamiento\*\)](#) - Leasing contract of 15 April 2015 between the municipality and a partnership between the installer, Electricidad y Tecnología S.A. de C.V. (Electrotec) and the financial institution, Solucash S.A. de C.V. Sofom E.N.R. (Solucash), regarding the replacement of luminaires and the strengthening of the light network infrastructure in Guadalajara. Private partner is responsible for the installation of the luminaires. Municipality leases retrofitted lights from private partner and makes monthly payments over the 10-year lease term to be financed through cost savings. After expiry of the contract ownership of the luminaires will be transferred to the municipality.

### **United Kingdom:**

[Street Lighting Procurement Pack - Model Documentation](#) by the Local Partnerships – Model documentation aims to provide assistance to local authorities in the procurement of street lighting projects through a public private partnership or through the Private Finance Initiative. It is not intended to be a word-for-word template.

Birmingham [Highways Maintenance and Management Service PFI - Project Agreement & Schedules](#) - Contract between Birmingham City Council (Authority) and Amey Birmingham Highways Ltd (Service Provider) relating to the rehabilitation, maintenance, management and operation of the roads and street lighting network in the City of Birmingham pursuant to the Government's Private Finance Initiative (PFI). The contract was signed in May 2010. The street light component is only one part of the 25-year contract and covers the modernization and maintenance of 97,000 street lights and the upgrade of associated street infrastructure.

### **United States:**

Michigan, Detroit Metro Region - Metro Region Freeway Lighting Public-Private Partnership - [Delivery of Freeway Lighting as a Design-Build-Finance-Operate-Maintain \(DBFOM\) Project - Project Agreement with Schedules](#) between the Michigan Department of Transportation (MDOT) and Freeway Lighting Partners, LLC (Project Company) of 24 August 2015. Contract term 15 years. Project Company to design, build and finance the improvements on existing freeway and tunnel lighting systems during a two year construction period and to operate and maintain the existing and improved lighting system for the remaining operating and maintenance period of 13 years. Private partner to hand back the lighting system to MDOT at the end of the contract term. MDOT to make Milestone Payments to the Project Company during the design and construction period and Service Payments to Project Company for performance of services during the operating and maintenance period. The Service Payment takes account of energy savings achieved by the Project Company.

## **Policies and Legislation**

### **France:**

The [Code général des collectivités territoriales](#) (French law for regional and local authorities) provides that municipalities have the responsibility for lighting. PPPs (or *délégations de service public*) are common in this field and [Reconstruction, Management, and Maintenance of Street Lighting and Other Public Facilities, Juvignac, France](#)

## **Mexico:**

[Relevant legislation on street lighting \(\*Normatividad aplicable al alumbrado público\*\)](#) (Spanish).

## **Further Reading and Resources**

[Street Lighting PPPs: Improving Energy Efficiency and Public Safety in India's Cities](#), IFC 2021 - Street lighting PPPs help provide better services, improve business and public safety, and increase energy efficiency by up to 70%. This IFC sector note provides lessons and examples on scaling up innovative PPP solutions in public street lighting infrastructure across India.

[Proven Delivery Models for LED Public Lighting](#), ESMAP 2017 - This synthesis report summarizes the cross-cutting findings from six case studies, which document real-life experiences, challenges, and solutions encountered in implementing different LED lighting delivery models—ESCO, super-ESCO, joint procurement, public-private partnership, lease-to-own, and municipal financing. Crosscutting findings include various key roles played by governments, ranging from setting policies that support LED lighting programs to establishing an ESCO with a mandate to implement energy efficient programs while transforming the market.

[Handbook on Quality Control for Street Lighting Projects for EESL \(Energy Efficiency Service Limited\)](#), PricewaterhouseCoopers Pvt. Ltd August 2017 - The objective of this handbook is to act as a comprehensive guide in designing and implementing quality control plan for energy efficiency (EE) projects in India involving LED lamps. Performance based contracting is an integral part of EE projects. Under this form of contracting, the revenue generated by a project of an ESCO is directly related to the energy savings achieved.

[Lighting Brazilian Cities: Business Models for Energy-Efficient Street Lighting \(\*Modelos de Negócio para Eficiência Energética em Iluminação Pública\*\)](#), World Bank, June 2016 (English and Portuguese) - Based on city studies and surveys in more than 300 municipalities, the report identifies business models and innovative financial structures that match the needs and capabilities of different sized cities. It also provides recommendations to governmental institutions on developing effective new policies and mechanisms to help Brazilian cities take ownership of their public lighting.

[Prefeasibility Study Municipal Energy-efficient Public Street Lighting Project in the City of Rio de Janeiro](#), World Bank Group August 2014 - The objective of this study is to provide city officials in Rio de Janeiro with (a) a brief overview of the global trends in EE public street lighting; (b) a review of the relevant regulatory, institutional and legal frameworks that would have an impact on an investment in energy-efficient public street lighting; and (c) recommendations for financing structures that achieve scale by bundling/aggregation. See also: Impact Story: [SNTA supports street lighting PPPs in Belo Horizonte and Rio de Janeiro](#), PPIAF April 2016 and [Improving Energy Efficiency in Street Lighting in Brazilian Cities](#).

[Les bonnes pratiques en éclairage public](#), l'association des maires de France et des présidents d'intercommunalité (AMF) and Syndicat de l'éclairage May 2016.

[Republic of India, Energy-Efficient Street Lighting - Implementation and Financing Solutions](#), World Bank, June 2015 - This reports serves as a manual for the implementation of LED lighting programs based on the experiences from India. Among other things it provides templates for investment grade audits, procurement

and contracting, tools and matrices. The manual has been designed according to the requirements and constraints specific to India. However, many of its recommendations may be applicable across urban local bodies (ULBs) and municipalities in other countries.

[Street Lighting Toolkit – How to assess the impact of an energy efficiency investment in the street lighting asset](#), Scottish Futures Trust, March 2013 - The toolkit and the two accompanying business cases aim to assist local authorities to assess the impact of investing in energy efficiency measures within their street lighting asset. It draws on best practice and learnings from local authorities who have already implemented successful energy efficient street lighting schemes and provides clear guidelines and a structured approach and process for councils to work through to deliver energy efficient street lighting initiatives.

[EESL Toolkit for Street Light Energy Efficiency](#), Energy Efficiency Services Limited (EESL) December 2013. The toolkit is based on analysis of the practical situation in Indian municipalities, and experience gained through the implementation of its ongoing street lighting projects.

[Proyecto Nacional de Eficiencia Energética en Alumbrado Público Municipal \(PNEEAPM – National Project for Energy Efficiency and Public Municipal Lighting\)](#) This program was established by Mexico's national government. It aims to provide technical assistance and financing to municipalities intending to implement better and more efficient street lighting systems.

[PPP in Germany: street-lighting and other sustainability projects](#), Partnerschaften Deutschland ÖPP Deutschland AG December 2010 explains key elements of the PPP street lighting model.

#### Related Content

- [Climate-Smart PPPs](#)
- [Climate-Smart PPP Legal and Regulatory Framework](#)
- [Preparing, Procuring and Implementing Climate-Smart PPPs](#)
- [Climate-Smart PPPs: Further Reading and Resources](#)

#### Additional Resources

- [Power and Renewable Energy PPPs](#)
- [Investing in a brighter future: PPP street lighting projects](#)

#### Partner Resources



## Renewable Energy Project Resource Centre (REPRC)

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