

Due to the long-term nature of a PPP project, most PPP contracts contain provisions by which the contracting authority or the private partner can from time to time require certain changes to be implemented after contract signature.

These contractual provisions may sometimes be sufficient to address new developments in technology or longer-term changes that can make infrastructure projects obsolete long before the end of their expected life spans. Either party might, for example, require changes to the infrastructure assets or services, to reflect changes in public demand or propose innovative technology or cost saving measures, or request that tariffs and payments are adjusted to reflect economic changes.

Variations management

The parties of long-term PPP contracts usually understand that circumstances may change over time. Therefore, it is good practice to include provisions that permit adjustments of the PPP contract from time to time. PPP contracts typically include a framework for the parties to request, negotiate, and agree to changes of the physical infrastructure asset or infrastructure services in response to changing circumstances that could not be anticipated or quantified when the PPP agreement was signed. This could also include changing technology. Variation provisions¹ usually contain a list of generic and undefined changes, and describe the variation procedure and how the costs of the variation are shared between the parties. They are the primary means by which PPP frameworks introduce flexibility into PPP contracts.²

(See also [“Case Study 2: Australia – Considering Future Technology Improvement of Victoria Water Desalination Plant.”](#))

Considerations for Future PPP Contracts:

A broad variation mechanism within PPP contracts enhances flexibility with regard to technological upgrades. To ensure bankability, PPP variation mechanisms should, however, contain clear terms and conditions, in particular with regard to compensation and grounds on which the private partner may refuse to implement a variation. A good starting point to ensure a clear and adequate risk allocation between the parties within this framework may be to allow the contracting authority to request changes of works and services if it compensates the private partner for any additional cost or loss of revenue arising from these changes. At the same time, the contracting authority may want to share efficiency gains while still incentivizing the private partner to cooperate, explore, investigate, consider, and propose innovation through the variation framework. Advanced technology related to the adaptation or mitigation of climate change that was not known at the time the contract was signed may, for example, justify changes regarding the output specifications upon request by one of the parties. The variation mechanism can incentivize the private partner to identify and implement the latest technology if PPP contracts ensure that the private partner and the contracting authority share the benefits of any cost savings that are achieved through innovations.

Change management related to tariffs and payment rules or formulas

In a world of rapidly changing technology, governments need to ensure that PPP contracts are flexible enough to facilitate innovative solutions and business models in the interest of users, and that cost reductions through efficiency gains are shared between the public and private sectors. Likewise, if changes in technology affect costs and prices (e.g., falling renewable energy prices), contracting authorities or the private partner may wish to adjust tariffs or payments accordingly.

Tariffs or payments are often specified by formulas, to allow for regular adjustments for factors such as inflation. The PPP contract can also include mechanisms for reviewing these formulas—whether periodic, or one-off changes in extraordinary circumstances (with specified triggers) to reflect long-term changes. These processes are analogous to regulatory tariff reviews.³

Some PPP contracts require periodic market testing or benchmarking of certain sub-services in the contract, to allow costs to be adjusted to market conditions. This is typically done where a PPP includes provision of a long-lived asset (such as a school or hospital facility) together with sub-services that are frequently not offered in the market under long-term contracts (such as cleaning, catering, waste management, security and information technology services).⁴ The objective of this requirement is to keep the price charged for the sub-service in line with market conditions.⁵

Unilateral changes of tariffs or of availability payments are typically not permitted under PPP agreements. Consequently, contracting authorities cannot simply change tariffs agreed to under a PPA if falling prices of a technology (e.g., the price for solar photovoltaic (PV) panels has declined steadily during the past decade, leading to dramatic drops in tariffs) make the contracted tariff unattractive for the oftaker. In these cases, regulators may, however, be allowed (under the existing regulatory frameworks) to periodically revise tariffs that are applicable to future projects or to introduce new pricing schemes, with the objective of reducing the tariff to capture, for example, lower capital costs and other costs savings that have resulted from the more widespread adoption of that particular technology or switch to another type of technology.⁶

Regulatory mechanisms for price control can also provide incentives for innovation. Similar approaches could be considered for PPP contracts.

"If disruptive technology upsets the economic balance of a PPP contract, contract managers need to check carefully whether the PPP contract establishes rules and processes for adjusting the tariff and whether these apply. Otherwise, sector regulators may be able to periodically revise tariffs or to introduce new pricing schemes to capture, for example, cost savings resulting from disruptive technology."

Box 7: United Kingdom: Office of Gas and Electricity Markets (Ofgem)—Framework for Price Control Incentivizes Innovation

The Office of Gas and Electricity Markets (Ofgem) is a non-ministerial government department and independent national regulatory authority governed by the Gas and Electricity Markets Authority (GEMA). Ofgem sets price controls for the gas and electricity network companies. In Great Britain, energy networks are privately owned monopolies funded through consumer bills. Ofgem regulates the networks to make sure companies running the infrastructure invest intelligently and efficiently, while keeping costs to consumers as low as possible. To do this Ofgem uses price control mechanisms that set how much revenue network companies can recover from their customers, ensuring fair prices and a quality service.

Britain's energy sector is changing rapidly. Ambitious carbon reduction goals have led to major changes in how electricity is generated and how grids need to be managed. Going forward, Britain needs to integrate new technologies like electric vehicles (EVs) and heat pumps, and make low-carbon, often weather-dependent, power available in the right places and at the right times. Innovation is therefore increasingly affecting how energy is produced, transported, managed and consumed. Given the increasing scope and range of potentially transformative and disruptive new business models and innovative solutions, Ofgem is continuously updating its regulatory approach to ensure that it is sufficiently flexible and agile to facilitate innovations in consumers' interests, while maintaining the

protections required of an essential service.

To create an environment conducive to innovation required for the energy transition, Ofgem replaced its old RPI-X price control model⁵² in 2013 with a new performance-based framework. The new regulatory framework is based on the RIIO principle (Revenue = Incentives + Innovation + Outputs). RIIO sets targets to encourage more innovation and extends the tariff adjustment scheme from five to eight years with the objective of providing more incentives to adopt innovations that reduce costs and improve services to users.

Source: [Ofgem](#).

Considerations for Future PPP Contracts:

To protect both parties against unforeseen economic effects of disruptive technology and to incentivize the adoption of innovation, contracting authorities could consider extending provisions that make tariffs or payments dependent on specific **formulas** in tariff adjustment schemes to factor in economic effects caused by technological disruption and to incentivize innovation. With regard to specific sectors or sub-services, requiring **periodic market testing** or **benchmarking** might be justified to allow costs to be adjusted to market conditions.

Footnote 1: Variation provisions are also known as change-order provisions, modification provisions, change in works, or change in service requirements.

Footnote 2: For details regarding variation during the operation phase, see the [APMG Public Private Partnership \(PPP\) Certification Guide](#), Chapter 8, sub-section 7.

Footnote 3: World Bank Group. 2017. [PPP Reference Guide](#), Version 3, p. 153.

Footnote 4: This approach is most common in PPP contracts in the United Kingdom Private Finance Initiative (PFI) tradition.

Footnote 5: World Bank Group. 2017. [PPP Reference Guide](#), Version 3, p. 154.

Footnote 6: Africa Legal Support Facility. 2019. [Understanding PPAs](#), Second Edition, p. 105 f.

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