

Regulating energy networks for the future: RPI-X@20

Delivering a sustainable energy sector and value for money: enhancing competitive pressures on regulated networks

Ofgem's current thinking

Date of publication: 6 October 2009

Summary

This working paper is part of a suite of RPI-X@20 working papers which explore how high-level outcomes consistent with those set out in our first working paper might be delivered under future regulatory frameworks for the energy networks.

We recognise that networks have delivered for consumers, and continue to do so, under existing frameworks reinforced by the competitive disciplines of financial markets. We also recognise that when similar frameworks were conceived for use when British Telecom was privatised, they were designed to mimic the pressures of a competitive market pending the arrival of effective competition. In this paper, we take a step back from regulatory frameworks which have evolved as the scope for greater competition has been identified and explore the case for enhancing competitive pressures on regulated networks on the grounds that it may offer an alternative way to deliver these desired outcomes efficiently. As part of this, we explore the potential pros and cons of a range of models including tendering and franchising. We also explore whether networks and existing regulatory frameworks pose any barriers to effective competition in the market to build and maintain new connections to the distribution networks and to the emergence of innovative energy service business models. We look at all of these issues against the backdrop of new challenges facing the energy networks and the potential for new, innovative technologies to change the scope for effective competition in the provision of networks and network services.

We propose to undertake further work to develop how competitive tendering might fit as a complement to our existing regulatory tool-kit under future regulatory frameworks. We highlight that we intend to consider any relevant lessons in keeping under review independent network operator arrangements in considering enhancing competitive pressures as part of RPI-X@20. Underpinned by the principle that neither the regulatory framework nor the behaviour of networks should pose any unnecessary barriers to the development of innovative business models such as Energy Service Companies (ESCOs), we invite views on the merits of exploring ways to increase the transparency and cost reflectivity of access terms and conditions further. We also invite views on the merits of further exploring the case for introducing rights for third parties to buy network assets under certain circumstances.

We are presenting this work at an early stage consistent with the review's guiding principles of transparency and "no surprises" and to spur debate. The ideas may be subject to change as our thinking in the visionary phase of the project develops. Further clarification will be provided in our winter "Emerging Thinking" consultation paper.

Contact names and details:

Hannah Nixon, Partner, Regulatory Review

Cloda Jenkins, Head of Regulatory Review

Tel: 020 7901 7165 / 020 7901 7145

Email: RPI-X20@ofgem.gov.uk

Team: RPI-X@20 and Regulatory Finance

1. Introduction

1.1. RPI-X@20 is a “root and branch” review of the RPI-X framework that has been used to regulate Britain’s transmission and distribution gas and electricity networks successfully for the past 20 years. We published our first “Principles, Process and Issues” consultation document in February.¹ We remain in the “visionary” phase of the project, which will culminate in our “Emerging Thinking” consultation paper in the winter. We will provide our recommendations on the future regulatory frameworks for electricity and gas transmission and distribution to Ofgem’s governing Board, the Gas and Electricity Markets Authority (GEMA), in summer 2010.

1.2. This paper is one of a series of RPI-X@20 working papers we have published. In our first working paper we suggested that future regulatory frameworks should encourage networks to facilitate the delivery of a sustainable, low carbon energy sector while providing value for money for existing and future consumers.² This paper is part of a set of working papers which explore how these desired high-level outcomes might be delivered through a future regulatory framework.

1.3. In particular, this paper explores the case for enhancing competitive pressures on regulated networks. It sits alongside papers that present initial ideas on the merits of ex post and a modified ex ante framework in the context of delivering desired outcomes efficiently over the long term.³ It also sits alongside a paper that assessed a number of potential models that could stimulate further innovation in the future.⁴

1.4. At a theoretical level, competition could help to facilitate greater efficiency and could also contribute to the innovation needed to deliver a sustainable energy sector. We have demonstrated our commitment to this principle where appropriate in the past by de-regulating aspects of the energy industry such as retail supply.

1.5. We recognise that networks have delivered for consumers, and continue to do so, under existing frameworks reinforced by the competitive disciplines of financial markets. We also recognise that when similar frameworks were conceived for use when British Telecom was privatised, they were designed to mimic the pressures of a competitive market pending the arrival of effective competition. In this paper, we take a step back and explore the case for making greater use of competitive pressures to complement the disciplines on energy networks delivered by existing regulatory frameworks and financial markets. We explore this case on the grounds that it may offer an alternative way to deliver desired outcomes efficiently.

1.6. We look at these issues against the backdrop of the new future challenges and uncertainties for the energy sector that we set out in detail in our February consultation document. These primarily relate to the emergence of greater pressures to facilitate efficient delivery of low carbon targets while maintaining security of supply.⁵ A number of scenarios have been identified as to how energy networks might develop in the future,

¹ Available here:

http://www.ofgem.gov.uk/Networks/rpix20/publications/CD/Documents1/Principles%20Processes%20and%20Issues%20con%20doc_final%20-%20270209.pdf

² Further details can be found at the following link:

<http://www.ofgem.gov.uk/Networks/rpix20/forum/Documents1/RPI-X20%20Working%20Paper%20-%20What%20should%20a%20future%20energy%20regulatory%20framework%20deliver%20-%20Final.pdf>

³ Available:

http://www.ofgem.gov.uk/NETWORKS/RPIX20/FORUM/Documents1/what%20do%20we%20mean%20by%20efficiency_publish.pdf; and

<http://www.ofgem.gov.uk/NETWORKS/RPIX20/FORUM/Documents1/Modified%20ex%20ante%20regulatory%20framework.pdf>

⁴ Available: http://www.ofgem.gov.uk/Networks/rpix20/forum/Documents1/RPI-X20%20Innovation%20Working%20Paper_FINAL%20DRAFT.pdf

⁵ Further details can be found at the following link:

http://www.ofgem.gov.uk/Networks/rpix20/publications/CD/Documents1/Principles%20Processes%20and%20Issues%20con%20doc_final%20-%20270209.pdf

including those identified as part of Ofgem's LENS project for 2050. Some of these may have implications for the future role of competition, such as scenarios that envisage greater competition at the local level through greater local generation and growth in companies offering local energy services. Others envisage significant growth in the geographical reach of transmission networks and a need for significant network upgrading and reinforcement projects. These include scenarios identified in the context of the ENSG project which looked out to 2020 and which are informing current work on Transmission Owner (TO) incentives.⁶ The potential for significant changes in the source and demand for gas have also been highlighted.

1.7. We examine the case for enhancing competitive pressures from two perspectives:

- We explore the case for introducing greater competition in the delivery of desired outcomes, potentially relating to specific projects or new investment, and examine the potential advantages and disadvantages of a range of models, including tendering and franchising, both of which have been applied within regulated sectors to facilitate this.
- We then explore whether networks and associated existing frameworks pose any barriers to the emergence of greater competitive pressures or would be likely to provide barriers in the face of emerging competition in the provision of services to consumers, focusing on competition for new connections and the potential for greater emergence of energy service companies (ESCos).

1.8. In developing our initial ideas presented in this working paper we have drawn from a range of sources including relevant economic literature, discussions with stakeholders, and written responses to our February consultation document⁷. This has been supplemented with consideration of experiences of applications of relevant models across the UK energy networks and other UK and international regulated sectors. We have also considered emerging national government environmental policies relevant for the energy sector. We will continue to update our thinking as Government policy develops during the course of RPI-X@20. Some of the ideas presented in this paper if implemented may require legislative change, and in considering whether any will be taken forward in our winter consultation document, we will also consider whether some changes could be introduced by Ofgem under the current legislative and regulatory framework or whether some changes may need to be facilitated by Government.

1.9. The ideas in this paper reflect Ofgem's current thinking and may be subject to change over the course of the review. For example, changes may arise in response to developments in Government policy e.g. pertaining to Feed-in-tariffs (FITs) and the Renewable Heat Incentive (RHI) or as a result of further analysis. We intend to provide formal clarification on the issues discussed here in our winter 'Emerging Thinking' consultation paper.

1.10. This paper is not a consultation or decision paper. The proposals in this paper have been developed for the RPI-X@20 project alone and do not in any way bind or constrain GEMA's flexibility – both now or in the future – when taking decisions and interpreting its legislative powers and duties. Consistent with the guiding principles to the review, the initial ideas presented will not be applied retrospectively, including in the context of DPCR5.

⁶ Further details can be found at the following link:
http://www.ofgem.gov.uk/Networks/Trans/ElecTransPolicy/tar/Documents1/September%20Consultation_090908.pdf

⁷ Responses to the February consultation can be found here:
<http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=32&refer=Networks/rpix20/publications/CD>

1.11. The remainder of this working paper is structured as follows:

- Section 2 provides an overview of the current role of competition in energy networks and energy supply;
- Section 3 identifies, at a high level, opportunities for making greater use of competitive forces in the delivery of desired outcomes by energy networks and the pros and cons of potential options for facilitating this;
- Section 4 considers existing competition in the market to build and maintain new connections to distribution networks, and discusses perceived barriers to the further development of this competition;
- Section 5 focuses on exploring how future developments in energy service markets may be affected by network regulation and may impact networks, focusing on the potential for greater emergence of ESCOs; and
- Section 6 presents concluding remarks and next steps.

2. The current role of competition in energy networks

2.1. Energy networks currently form part of a GB supply chain that encompasses competitive elements. For instance, it encompasses the supply of energy to households and businesses. These competitive aspects embed some form of competitive pressure within the supply chain in which networks operate.

2.2. There is wide acceptance that existing technologies and resulting cost structures place constraints on the development of effective competition within energy networks. This is due, in part, to the barriers posed by the scale of investments and high sunk costs which may render duplication of network assets by competitors inefficient. In the absence of effective competition, the current regulatory framework is designed to protect existing and future consumers in terms of prices and quality of service through mimicking the pressures provided in a competitive market.

2.3. The incentives provided by the regulatory framework are reinforced by the competitive disciplines investors and financial markets place on the management of privately owned network companies. These disciplines include incentives for efficient operation, investment and financing. Networks experience a form of competition for corporate control, where potential investors compete to own and control the monopoly energy networks.

2.4. Alongside regulating monopoly aspects of the energy networks, we have demonstrated commitment to our primary objective of protecting the interests of existing and future consumers, wherever appropriate by promoting effective competition through:

- Establishing rights for independent network operators to compete alongside existing distribution networks in the market to build and maintain new connections – most often of new housing developments – in 1995 in gas and 2001 in electricity⁸; and
- Introducing, in partnership with the Department of Energy and Climate Change (DECC), a competitive tendering process for the grant of licences to provide offshore electricity transmission services which will see companies competing for the award of transmission licences to build, own, and maintain offshore transmission assets.

2.5. In addition, we considered whether to apply a competitive approach for proposed transmission line links to the Scottish Islands.⁹ Ofgem decided that a competitive approach

⁸ Current legal frameworks permit independent networks to co-exist alongside distribution network operators.

was not suitable for adoption in the specific case of a Western Isles link, because it may delay the connection of renewable generation. Ofgem indicated, however, that we remain committed in principle to using a competitive process for significant new transmission investments wherever practical and in circumstances where the scope for costs savings outweighs the risks and costs associated with a competitive approach.¹⁰

2.6. The Government have recently proposed to bring forward a legislative amendment clarifying the extent to which Ofgem's remit extends in the promotion of competition.¹¹ This was presented alongside a statement that the Government believes that effective competition remains the central way by which consumers' interests can be protected but that there are contexts where other means may be preferable in protecting their interests. The Government proposes to amend the relevant legislation to make this clearer, building on the existing legislation. It remains to be seen the form the Government's proposed legislative amendment will take.

3. Competition for delivery of network-related outcomes

3.1. As we indicated in our February consultation document, we recognise that current regulatory frameworks have delivered for consumers and continue to do so.

3.2. We have outlined above that Ofgem has taken steps to increase the use of competitive pressures in the form of competitive tenders for the grant of licences to develop and operate offshore electricity transmission infrastructure and establishing rights for independent network operators to compete in the market to build and maintain new connections.

3.3. RPI-X@20 affords us the opportunity to step back and consider whether we can make greater use of competitive pressures. In this paper we focus primarily on exploring this from the angle of competition in the delivery of desired outcomes. The issues and ideas discussed here are relevant under both an ex post or ex ante regulatory framework (as discussed in two of our other RPI-X@20 working papers¹²) and may be a complement to potential models for stimulating further innovation in the future discussed in a separate working paper.¹³ We explore these issues both in the context of the current situation and also potential future scenarios which have been identified, some of which may present new opportunities for considering to apply competitive models. Some of the transmission reinforcement projects identified as part of the ENSG may fall into this category.

3.4. Based on a high-level assessment of potential benefits of competition identified in economic literature, enhanced competitive pressures, through facilitating entry of new players, could encourage the outcomes outlined below. The extent to which this range of benefits may be delivered will depend on the nature and effectiveness of competition.

- **Lower costs and value for money:** Competition may deliver lower costs as competitors seek to win contracts by offering lower prices. Competitive pressures may also lead to the discovery of new approaches to delivery, contributing to long-term efficiency. They may also deliver better choice and quality of service for consumers;

⁹ Further details can be found at the following link:

<http://www.ofgem.gov.uk/Networks/Trans/ScottishIslands/Pages/ScottishIslands.aspx>

¹⁰ Ibid

¹¹ Further details can be found at the following link:

http://www.decc.gov.uk/en/content/cms/publications/lc_trans_plan/lc_trans_plan.aspx

¹² Available:

http://www.ofgem.gov.uk/NETWORKS/RPIX20/FORUM/Documents1/what%20do%20we%20mean%20by%20efficiency_publish.pdf; and

<http://www.ofgem.gov.uk/NETWORKS/RPIX20/FORUM/Documents1/Modified%20ex%20ante%20regulatory%20framework.pdf>

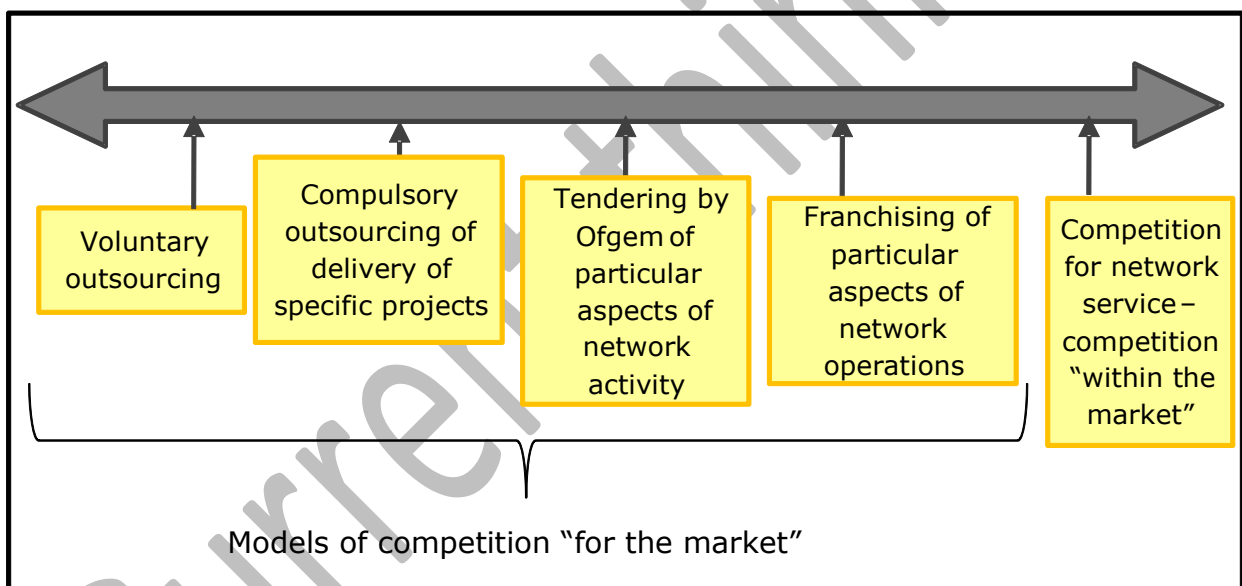
¹³ Available: http://www.ofgem.gov.uk/Networks/rpix20/forum/Documents1/RPI-X20%20Innovation%20Working%20Paper_FINAL%20DRAFT.pdf

- **Innovation:** Competition could encourage innovation and new ideas, leading to new ways of delivering networks and network services and long-term efficiency;
- **Enhancements to information:** Competition can reveal information on the scope for efficiencies and innovation, both through the bidding process and through broadening opportunities for comparative benchmarking; and
- **Contributions toward a sustainable energy sector:** Competitive opportunities may enable the entry of new market players and bring new ideas and skills that could contribute to low carbon policy objectives.

3.5. As competitive pressures develop, the need for, and nature of, regulation of energy networks may change. Enhanced competitive pressures could lower the costs of regulation. This may be off-set, however, by any associated up-front costs.

3.6. There are a range of models that could be used to facilitate competition in the delivery of desired outcomes. These span a spectrum – both in the extent to which they may broaden opportunities for other parties to become involved in providing network services and the range of network activities for which they may be applied. These models are set out in Figure 1 below:

Figure 1: Spectrum of competitive models



3.7. We set out below how some of these models might be applied alongside a regulatory framework to make greater use of competitive forces to the benefit of network users, consumers and the low carbon economy. These models are not necessarily mutually exclusive. Nor are the lines between them always distinct. For example, some tendering models share many similarities with franchising models. Their ability to deliver the potential benefits identified above will depend on their role and effectiveness in the circumstances in which they applied.

Table 1: Models involving greater competition in network infrastructure

Model	Overview	Examples
Compulsory outsourcing obligations on network operators	<p>Networks obliged to out-source certain activities (e.g. building new infrastructure) through a competitive tendering approach.</p> <p>Networks choose who to appoint, possibly subject to regulatory rules or oversight.</p>	
Competitive tenders	This model involves the use of a competitive process to select a company to undertake specific projects or deliver solutions to specific outcomes.	<p>Offshore transmission in Great Britain (see table 2)</p> <p>Tendering of electricity transmission investment projects in Argentina.</p> <p>Selected investment projects in Scottish water.</p>
Franchising to operate infrastructure ¹⁴	This model involves the allocation of a right to undertake operational activities and consequent transfer of operating cost (and potentially revenue) risks.	<p>The vast majority of overland train services in the UK are provided by a party awarded the right to deliver services following a competitive process.</p> <p>Applied to water provision and the operation of existing electricity distribution assets in some parts of France.</p>
Direct "network on network" competition	Multiple network operators compete directly in the supply of network services.	<p>Mobile telecoms.</p> <p>Also encompasses merchant approach similar to arrangements used for EU interconnector licensing, considered in the context of offshore electricity transmission links. Under merchant approach, costs of developing and financing network rest with the developer without access to regulated revenues.</p>

3.8. Given the nature of existing technologies which prevail within the sector, the last of these models would involve duplication of network infrastructure and competition between alternative operators of infrastructure to provide network services to users. We recognise that the regulatory regime has a strong influence on the opportunities for competition of this nature to develop. For instance, the use of revenue controls to regulate incumbent networks may reduce the profit opportunities that would be available to new entrants who might develop their own networks and compete directly with the incumbent networks. We recognise that the scope for technological development in particular might facilitate competition over time without the need for making significant sunk investment. However, in the current context facilitating competition of this nature might not increase the net benefits to consumers as a whole where competition is focused only on the most

¹⁴ Also referred to as concession models.

profitable aspects of the business leaving the incumbents with the residual. In the light of this potential risk, exploring the merits of direct network on network competition models is not a priority for the RPI-X@20 project.

3.9. Instead, the focus in this working paper is on the potential use of competitive forces within a regime in which core network infrastructure is generally not duplicated. In the first three models, competition takes place to develop and/or operate network infrastructure.

3.10. While these three models could deliver the benefits of competition identified above, there are a range of factors which may off-set their effectiveness in harnessing the potential benefits. We explore these factors below. These are identified from a comparison against the current regime of five-year price controls for regulated monopolies. In developing our ideas we have drawn from a range of sources. These include relevant economic literature, discussions with stakeholders, and responses to our February consultation document.

3.11. We have drawn from insights offered by examples of the use of competitive models in other UK sectors and internationally. These include competitive tendering models for electricity networks in Argentina, Australia and India and the U.S case where investors can build gas transmission assets between states on an unregulated basis. They also include competitive models used in the delivery of water services in France and franchising for overground passenger rail and bus services in the UK. We also examined the examples of competitive models used in the delivery of water services in France and England and Wales and London Underground Public-Private Partnerships. We discuss these examples further at Annex 1.

Compulsory outsourcing obligations on networks

3.12. As summarised in Figure 1, outsourcing may be undertaken voluntarily on the part of the incumbent. We focus below on exploring a compulsory form of this model.

3.13. This model can be characterised as a variant of competitive tendering. The main distinguishing feature between a model of compulsory outsourcing obligations and tendering is that the tender process would be run by network companies and the network would decide solutions, choosing between operating versus capital solutions and making decisions, for example, on the type of investment to be undertaken. This model would also see the incumbent owning and operating any assets post-completion.

3.14. Compulsory outsourcing may reveal new ideas and innovative solutions for delivery. It may also provide greater opportunities for benchmarking and to realise economies of scale where the supplier specialises in the given area. Building on the motivations underpinning proposals to equalise incentives for capex and opex proposed as part of DPCR5, compulsory outsourcing may also address risks of incentives for incumbents to favour in-house solutions.¹⁵

3.15. We identify potential factors below which may serve to off-set possible benefits of competition associated with a compulsory outsourcing approach:

- Potential detrimental impacts from removing freedoms which currently exist for companies to choose their business model including what and the extent to which they outsource. For example, it may not be possible to capture the full range of appropriate considerations in determining a "rule" for identifying projects which will be outsourced;
- Losses in economies of scale at the network company level;

¹⁵ Further details can be found at the following link:

http://www.ofgem.gov.uk/Networks/ElecDist/PriceCntrls/DPCR5/Documents1/Initial%20Proposals_1_Core%20document.pdf

- Networks use outsourcing themselves as part of operating their businesses so there may be limited scope for greater efficiencies;
- May inhibit timely delivery of projects;
- Limited scope for delivering innovations in solutions; and
- New entrant may not have access to the necessary skills and expertise to undertake the full scope of outsourced projects.

3.16. We indicate above that we would expect networks to use outsourcing in the course of their business where this can lead to lower costs. In a separate paper we have identified ways which the regulatory framework may support and encourage networks to identify and deliver solutions which minimise costs to consumers over the long term, including the option of assessment of whether networks' plans give sufficient consideration to tendering and outsourcing approaches to delivery.¹⁶ Consistent with the guiding principles of this earlier paper, we are not convinced at this stage that compulsory tendering would offer a better way forward in encouraging desired outcomes to be delivered efficiently. This does not, however, preclude the possibility of a different conclusion being formed should a situation arise of consistent poor performance of a network company in identifying and delivering solutions.

Competitive tendering

3.17. Competitive tendering involves the use of a competitive bidding process to select a company to undertake a specific project or deliver solutions to specific outcomes.

3.18. A competitive tender process typically consists of a number of different stages:

- The design phase where the "procuring party" determines what it wants, the contract details and the basis for assessing bids, and provides these details to prospective bidders;
- The bidding phase where interested parties submit details of how they propose to meet specified criteria;
- Awarding the contract on the basis of the lowest price or a combination of price and other criteria;
- Establishment of a contract between the procuring party and the winning bidder;
- Monitoring to ensure that the conditions of the contract are complied with; and
- Potentially a re-tendering phase once contracts expire.

3.19. In the context of energy networks, a range of possibilities exist as to the use and purpose of competitive tendering. For instance:

- Competitive tenders may be used by the regulator or Government to appoint a company to design, build and subsequently own and operate new network infrastructure. For instance, this could involve tendering to provide new network

¹⁶ Further details can be found at the following link:

<http://www.ofgem.gov.uk/Networks/rpix20/forum/Documents1/Modified%20ex%20ante%20regulatory%20framework.pdf>

connections or it could involve tendering of a network reinforcement project. This may be done under a contract or a licence.

- Competitive tenders are used by energy networks to select contractors to build or maintain network infrastructure on their behalf, as part of the efficient operation of their networks.

3.20. Our focus in the remainder of this subsection is the first of these examples.

3.21. Ofgem is currently in the early stages of applying a large-scale tendering model in the context of offshore transmission. This regime has been developed in partnership with DECC and will see companies compete for the award of licences to build, own and maintain offshore transmission assets, becoming new Offshore Transmission Owners (OFTOs).

Table 2: High-level design features of the electricity transmission offshore tendering regime¹⁷

Design feature	Discussion
Overview	<p>Parties will compete for licences that would allow them to design, build, finance and operate transmission assets offshore. The competitions will be run against committed generation projects seeking connection to the national electricity transmission system. This is the enduring framework which will apply from summer 2010.</p> <p>There are certain projects that have been constructed or under construction that will be subject to transitional arrangements where constructed assets will be adopted by an appointed OFTO rather than requiring the OFTO to design and construct the assets. We are currently undertaking the first round of transitional tenders, which a further tender process expected next summer.</p>
Stages of the tender process	<p>Tender process run by Ofgem.</p> <p>The licensing competition has the following stages: pre-qualification, qualification to tender, invitation to tender, best and final offer (optional), preferred bidder, successful bidder, and licence grant.</p>
Obligations on tenderers	<p>Along with revenue entitlements based on the outcome of the tender process, licences issued by Ofgem will contain a series of obligations that the OFTO must meet, e.g. compliance with the industry codes and technical standards, financial ring fencing, and business separation.</p>
Term	<p>Potential Offshore Transmission Owners (OFTOs) will bid into the tender process to obtain an open ended transmission licence with an initial revenue term of 20 years.</p>

¹⁷ Drawn primarily from:

<http://www.ofgem.gov.uk/Networks/offtrans/pdc/cdr/cons2009/Documents1/Offshore%20Electricity%20Transmission%20Final%20Statement%20on%20the%20Competitive%20Tender%20Process.pdf>

3.22. We have indicated that we anticipate that this approach will encourage new entrants to enter the industry, provide more scope for innovation and allow a longer term and lighter touch regime.¹⁸ It may also enable access to alternative sources of capital. The work to date on offshore transmission provides lessons for policy development, and in the choices made in the design of the bidding process. They also include possible lessons on likely lead time which may be required to implement the regulatory changes for a new competitive tendering regime, and the need for an early decision on the treatment of 'transitional projects' to allow planned investments to continue while regime design is implemented. This lead time involved around 12 months consultation during the policy design phase and then the first 'transitional' tender process itself extends over 12 months. The regime will, however, require time to embed before its full impacts are known.

3.23. At Annex 1 we explore a range of examples where tendering models have been applied in energy sectors internationally and in other regulated sectors within the UK.

3.24. Competitive tendering would provide Ofgem the ability to award a contract or licence against criteria aligned to desired network behaviours. These may include: costs, quality of service, and contributions to a low carbon economy. It could facilitate new entry into the market and provide a diversity of suppliers should one fail or prove inadequate. Where commercial and output requirements are complex, tendering for a licence rather than a contract may provide a more flexible and timely approach.

3.25. In addition, the prospect of Ofgem making greater use of competitive tenders could provide an incentive to energy networks currently operating under price control regulation to provide improved services at lower costs to consumers.

3.26. We identify potential factors below which may serve to off-set possible benefits of competition associated with a competitive tendering approach:

- Networks already outsource projects themselves as part of operating their own businesses so there may be limited potential additional benefits;
- Costs of tender process, though these need to be considered in the light of the costs associated with a regulatory approach;
- Tender process may inhibit timely delivery of projects, particularly at the outset, if certain critical-path pre-construction work is inhibited;
- If tender contracts involve operation of the new infrastructure, it may be necessary for the contract period to be much longer than five years, consistent with the approach taken to the offshore where revenue allowances will extend to 20 years. Where long contracts or licences are needed, this may lead to a loss in adaptability to changing consumer demands and regulatory requirements. It may also lead to potentially greater financeability risks although these may be able to be mitigated against to some extent in policy design e.g. by ensuring robust financing checks are undertaken;
- Losses in economies of scale, although this may be able to be mitigated against, to some extent, in contract design, e.g. by not excluding incumbents from the bidding process or where other bidders are able to exploit economies of scale; and
- There are potential risks that the operator does not maintain assets adequately towards the end of the contract period; although operational performance bonds would normally be expected to mitigate this risk.

¹⁸ Further details can be found at the following link:
<http://www.ofgem.gov.uk/NETWORKS/OFFTRANS/OTT/Pages/Ott.aspx>

Potentially favourable circumstances for competitive tenders

3.27. In the light of the considerations presented above, competitive tendering emerges as a potentially desirable complement to our regulatory tool-kit in certain circumstances.

3.28. If the option of using competitive tenders is part of the regulatory regime, we will need a framework that indicates where this approach might be applied. This work is beyond the scope of this working paper. Nonetheless, drawing on the discussions above and our review of case studies, we highlight below some initial thoughts on the circumstances which might be most favourable to the use of competitive tenders:

- **Effective competition between bidders:** The benefits of the competitive tender process rely on conditions in which there can be effective competition between bidders at the tender stage. The prospects of effective competition at the bidding stage will depend on the nature of the project or package of work put out to tender and on the design of the tender process.
- **Sufficient timeframe:** As indicated above, a tender process involves a number of stages which take place before the contract can be awarded. In some cases, this may introduce delays to new investment projects compared to an approach in which the project is taken forward as part of the price control regime applied to a monopoly network. For example, we took account of the timely delivery of investment when considering a competitive approach in the context of delivering a proposed transmission link to the Western Isles.
- **“Stand-alone” projects:** A tender process to award contracts to build (or build and operate) new infrastructure is likely to be more suitable where the contract would be for a project that is stand-alone in nature. In some cases it may be inappropriate to separate the development of new infrastructure from the management of existing networks. For instance, there may be a loss of economies of scale and scope, and potential co-ordination problems between networks. This suggests that competitive tenders might be more suitable for projects such as interconnectors and radial pipes and wires and less suitable for the core “mesh” networks.
- **Amenable to long-term contract:** In models involving competitive tenders and under the current price control regimes for energy networks, it is important to specify outputs that the network is required to deliver and to have mechanisms in place to encourage delivery of those outputs. Tenders for the development and operation of new infrastructure may need to cover a longer period of time than price control periods, so the problems of specifying, up front, what is required may be greater. This suggests that a model of competitive tenders for new infrastructure may be less suitable where there is less confidence about what we want the network to deliver over the contract life.
- **Sufficient scale of project:** Given costs associated with administering a competitive regime, this may imply projects will need to meet a minimum scale. Other relevant factors which will need to be considered in determining any monetary threshold include the potential benefits the regime may deliver in the specific circumstances it is applied, and its administrative costs over time.

3.29. These considerations are not intended to provide an exhaustive list. We do not intend to draw any conclusions on specific network areas which might be suitable for the competitive tender model (beyond those currently being taken forward by Ofgem).

3.30. At this stage, our emerging view is that we should have the option of using competitive tendering models, in specific cases and where justified on the basis of an indication of net benefits.

3.31. The potential role for competitive tenders will need to be considered more fully in light of the development and assessment of alternative approaches, which are being examined elsewhere in our RPI-X@20 review. We will also consider further any potential competition policy and legal implications associated with greater use of competitive tendering.

Franchising to operate network infrastructure

3.32. As indicated in Table 2, this model would differ from a model of tendering as it would involve allocating the rights to undertake a particular role as distinct from provision of a specific project or delivery of a specified outcome under a contract. We recognise, however, that there are points of the spectrum where the distinctions between franchising and tendering become limited.

3.33. In order to appoint someone to operate the franchise through a competitive bidding process, franchising models require similar steps to be followed as in competitive tendering.

3.34. The main potential advantage of franchising is that it could reveal new and innovative ideas or delivering network services which could deliver lower costs and higher quality for consumers.

3.35. Future scenarios might affect the scope for these opportunities. For instance, if a potential scenario for gas networks envisaged reductions in the demand for gas and greater scope for alternative uses of the gas networks (e.g. related to carbon capture and storage), a competitive process may help to reveal the best mix of uses for the gas networks.

3.36. However, several factors may off-set potential benefits of a franchising approach:

- May lead to losses in co-ordination if applied to small aspects of the core or mesh network;
- Costs of franchising process;
- Where long contracts are needed, this may lead to a loss in adaptability to changing consumer demands and regulatory requirements;
- Unless the relevant infrastructure is currently in public ownership, this model would first need the transfer of ownership of the infrastructure away from existing investors. One option would be a licence revocation, but this would raise a range of problems and complexities (e.g. under current arrangements licence revocation would either be the final stage of an enforcement process or the potential outcome of an insolvency);
- It may be difficult specify fully the scope of expectations for delivery within a contract and how risks will be allocated across parties;
- To the extent that a number of new roles emerge this may lead to losses in co-ordination and may also off-set any potential reduction in regulatory costs through requiring rules for how interactions will be managed;
- Franchising process may inhibit timely delivery of projects; and
- There are potential risks that quality standards may diminish towards the end of the contract, though this is at least partially dependent on contract design.

3.37. There is an argument that competition in markets for corporate control can provide a similar role to competition for concessions: potential investors who think they can operate the regulated business better than existing owners have the opportunity to do so through a

take-over or merger (as far as permitted by merger regulations and subject to any relevant merger adjustment).

3.38. Overall we are not persuaded that the franchising models offer a way of developing and improving the regulatory regime. We recognise that application of a franchising model to a wide range of aspects of network activity would mark a significant departure from existing frameworks and institutional structures which may lead to significant transitional costs. At this stage we are not convinced that the potential benefits of broad application of a franchising model could not be delivered at lower cost through development of our modified ex ante approach. Nonetheless, if other circumstances arose that meant that we needed to revoke a network’s licence, it may be appropriate to consider franchising as a possible way to move forward from that point.

4. Competition in new connections

4.1. This section considers competition to develop or adopt and subsequently maintain new network infrastructure that connects customers to existing networks. The selected network operator becomes the monopoly operator of network infrastructure that suppliers need to use to be able to supply customers.

4.2. Independent network operators have been established to provide competitive pressure on the monopoly distribution companies and to give customers choice. We stated in our corporate plan that we will keep the market and regulatory structure for IGTs and IDNOs under review.¹⁹ This is underpinned by an objective to ensure that rises in activity are delivering real benefits to customers in the form of lower prices or better service and to make sure that the regulatory arrangements do not stand in the way of the development of competition.²⁰ In the context of RPI-X@20, we will be considering any relevant lessons from experiences of these arrangements when considering enhancing competitive pressures elsewhere.

4.3. The arrangements for new gas and electricity connections are summarised in the table below:

Table 3: Summary of arrangements for Independent gas transporters and Independent distribution network operators²¹

Independent gas transporters (IGTs)	Independent distribution network operators (IDNOs)
<p>In 1995 the Gas Act 1986 was amended to allow for the creation of Independent Gas Transporters (IGTs), which develop, operate and maintain local gas transportation networks.</p> <p>IGT networks are directly connected to the Gas Distribution Network (GDN) via a Connected System Entry Point (CSEP) or indirectly to the GDN via another IGT.</p>	<p>The legal framework which enabled Independent Electricity Distribution Network Operators (IDNOs) to be licensed was established by the Utilities Act 2000 when it was implemented in 2001.</p> <p>In order to serve their customers IDNOs connect to a DNO's network. As a result, IDNOs pay the DNO "use of system" charges.</p>

¹⁹ Further details can be found at the following link:

<http://www.ofgem.gov.uk/About%20us/CorpPlan/Documents1/Corporate%20Strategy%20March%202009.pdf>

²⁰ Ibid

²¹ Drawn from:

http://www.ofgem.gov.uk/NETWORKS/ELECDIST/POLICY/DISTCHRGMODS/Documents1/WPD%20CE%20and%20Reckon%20consultation_final.pdf; <http://www.ofgem.gov.uk/Networks/GasDistr/IGTReg/Pages/IGTReg.aspx>; and <http://www.ofgem.gov.uk/Networks/ElecDist/Policy/IDNOs/Pages/IDNOs.aspx>

<p>Although domestic, industrial and commercial premises are connected to IGT networks, the new housing market constitutes the largest share of the IGT market.</p> <p>Recent estimates suggest that the number of consumers connected to an IGT network is approximately 880,000, and this is projected to reach the one million mark over coming years.</p> <p>The IGT will pay the GDN a connection charge. The value of the connection charge can vary significantly depending on the distance the IGT connects from the nearest main and the level of spare capacity available on the network. If an IGT connects within 23 meters of the nearest main they are subject to a standard connection charge. However if the distance is more than 23 meters then the connection charge is calculated based on the difference between the cost of reinforcing the network to accommodate the IGT, versus the income received from transportation charges over the lifetime of the asset (45yrs). This means if there is little spare capacity at the point of connection, the IGT will be liable for a large proportion of the capital costs of connection upfront. Ongoing use of system charges are also levied with a fixed charge (p/day), a capacity charge (p/peak day/kWh per day) and a commodity charge (p/kWh).</p> <p>Relative Price Control (RPC) was introduced in 2004 to regulate IGT transportation charges. This marked a move from a reliance on a reasonable profit test for non-legacy connections. The RPC requires that IGT charges to all new customers should be capped at a level broadly consistent with the GDN equivalent charge.</p>	<p>IDNO networks typically provide the distribution network for new build housing or commercial developments. IDNOs compete with the incumbent DNO (and DNOs operating out of area) to adopt these new networks from the developer. Once adopted, the IDNO operate and maintain the new network, and invoice suppliers in the same manner as a DNO.</p> <p>Recent estimates suggest that the number of customers connected to an IDNO network is approximately 35,000.</p> <p>The IDNO will pay the DNO for use of its upstream network. These charges are broken down into an upfront connection charge and an ongoing use of system charge. Under the present shallowish connection charging policy, the majority of costs are recovered in the ongoing use of system charge which for IDNOs typically consists of a p/day fixed charge, p/kWh consumption charge and p/kVA capacity charge.</p> <p>The IDNO is subject to a relative price control (RPC) by which their charges to domestic customers are effectively capped to the level which the DNO in that area charges.</p>
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4.4. Competition in new connections has the potential to benefit consumers, albeit through indirect mechanisms in some cases.

4.5. For instance, in the case of a new housing development, network operators compete to be appointed, by the developer of a site not yet connected to the electricity or

gas networks, to adopt and then maintain new connections on the site. The selected network operator becomes the monopoly operator of network infrastructure that suppliers need to use to be able to supply customers on the site. Housing developers will want to build attractive houses at low cost without delays. Therefore suppliers of new connections may compete to reduce the developer's costs, avoid delays and bring energy saving initiatives that house-buyers may value. In addition, the process for gaining planning approval might encourage potential new connections businesses to identify energy-efficient approaches for the development.

4.6. Over the longer term, these arrangements also have the potential to deliver enhanced information on efficient costs of operation to inform the price control review process.

4.7. Ofgem has periodically reviewed the effectiveness of aspects of the arrangements for IGTs and IDNOs. As noted above, we have also indicated that we intend to keep these arrangements under review.²² This will occur against a backdrop of concerns which have been raised by stakeholders relating to the following issues:

- **Perceptions of poorer outcomes for customers of IGTs:** In the past Energywatch have suggested that some domestic IGT customers of new-build developments suffer from poorer outcomes in terms of higher charges levied by suppliers and a lack of transparency as to the drivers of any higher charges (discussed further below).²³ They have also indicated that some of these customers face difficulties in switching suppliers and billing problems which appear to be driven primarily by incompatibilities in customer data systems and less choice in tariff and payment options as compared against customers of the main distribution networks.²⁴
- **Customer charging:** In the past Energywatch have reported concerns about the transparency of supplementary charges levied on some IGT customers which tend to be justified by suppliers on the grounds that they reflect additional administration and/or transportation costs.²⁵ They have also highlighted the variety of such charges which exist across suppliers. This effect may be exacerbated by potential barriers to ease of pricing comparisons and switching identified by stakeholders, the root cause of which were argued to relate to a lack of compatibility in IGT data as compared with the data held by other network operators.
- **Distortions to the connections market:** Incumbent network operators have questioned whether independent network operators may be distorting the connections market through using future revenues to cross-subsidise adoption payments made to developers or reduce connection costs – a practice some perceive as placing independent network operators at an unfair advantage.²⁶
- **Perceptions of DNOs creating unnecessary barriers to timely connection:** These relate to perceptions of electricity distribution network operators creating unnecessary delays in connection through a lack of provision of timely and/or sufficient information on points of connection, among others.²⁷

²² Further details can be found at the following link:

<http://www.ofgem.gov.uk/About%20us/CorpPlan/Documents1/Corporate%20Strategy%20March%202009.pdf>

²³ Further details can be found at the following link:

http://collections.europarchive.org/tna/20080922203044/http://www.energywatch.org.uk/uploads/Why_are_consumers_on_Independent_Gas_Transporter_Networks_Losing_Out.pdf

²⁴ Ibid

²⁵ Further details can be found at the following link:

http://collections.europarchive.org/tna/20080922203044/http://www.energywatch.org.uk/uploads/Why_are_consumers_on_Independent_Gas_Transporter_Networks_Losing_Out.pdf

²⁶ See, for example, <http://www.ofgem.gov.uk/NETWORKS/GASDISTR/IGTREG/Documents1/765-bgt.doc>;

<http://www.ofgem.gov.uk/NETWORKS/GASDISTR/IGTREG/Documents1/800-uu.doc>;

<http://www.ofgem.gov.uk/NETWORKS/GASDISTR/IGTREG/Documents1/792-npower.doc>

²⁷ See, for example, <http://www.ofgem.gov.uk/Networks/Connectns/CompinConn/Documents1/15973-GTC.pdf>;

4.8. Additionally, Ofgem launched a Competition Act investigation into ENW in January 2009 following a complaint regarding alleged abuse of dominant position by ENW through access terms imposed on IDNOs.²⁸

4.9. Addressing the perceived concerns outlined above relating to access, charging, and potential distortions to the connections market may require changes to existing regulatory frameworks and are beyond the scope of RPI-X@20 to look at in detail. In RPI-X@20 we will consider relevant lessons which emerge in keeping IGT/IDNO arrangements under review when considering enhancing competitive pressures elsewhere.

5. Enhanced competition in the supply of energy services

5.1. Markets for the supply of energy to customers (e.g. households, businesses) are open to competition. Issues related to the supply market sit outside of the scope of RPI-X@20. Ofgem has identified a range of measures to facilitate more effective competition in aspects of the supply market in the context of the Energy Supply Probe including new licence conditions prohibiting any undue discrimination in the terms and conditions offered to consumers.²⁹

5.2. A paper to inform the RPI-X@20 review³⁰, building on the set of plausible future scenarios identified in the context of the LENs project, raises the possibility of rapid technological change driven by the low carbon agenda changing the nature of competition in energy supply.³¹ The paper highlights potential developments involving growth in distributed or small-scale generation and self-supply (e.g. generation equipment located at the customer's premises). It also highlights potential growth in "energy service companies (ESCOs)" providing integrated energy services to consumers driven by these developments.³² This paper will be complemented by a forthcoming paper to inform the RPI-X@20 review which will focus on exploring the potential benefits of ESCOs and implications for regulation and the consumer.

5.3. We look at these models from two perspectives. First we explore potential constraints or obstacles that networks or the regulatory framework may pose to growth in these models, should the market determine that they are viable. Second, we explore whether any wider emergence of these models might have any impacts on networks, in the sense of potentially creating fringe competition if local networks are duplicated.

5.4. A variety of possibilities as to the specific shape the ESCOs business model could take have been identified. At one end of the spectrum, the services delivered by the ESCo may be limited to installing and maintaining energy saving technology. They may require use of existing distribution network infrastructure to supply customers with integrated energy services sourced from micro-generation. At the other end of the spectrum, ESCOs may develop their own network infrastructure, as an alternative to the existing distribution network infrastructure. The nature of the business models suggests that it will be distribution networks that are involved at a "local" "last mile" level and it is a function of technology and location that determines the "last mile" nature. For example, models might involve local heating services being offered in the form of hot water transported from a local combined heat and power plant. Others might involve local production and transportation of bio-gas.

²⁸ Further details can be found at the following link:

<http://www.ofgem.gov.uk/Media/PressRel/Documents1/ofgem5-20012009.pdf>

²⁹ Further details can be found at the following link:

<http://www.ofgem.gov.uk/Markets/RetMkts/ensupro/Pages/Energysupplyprobe.aspx>

³⁰ Available: <http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=23&refer=Networks/rpix20/forum>

³¹ Further details can be found at the following link:

<http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=23&refer=Networks/rpix20/forum>

³² 2001 Class Exemption Order sets out the maximum generation, distribution and supply scales under which vertical integration is permitted.

5.5. We recognise the potential benefits ESCOs could deliver for consumers and within the context of delivering a low carbon energy sector. Stakeholders have raised a variety of concerns that these developments may not fulfil their potential. These span beyond potential network and regulatory barriers and are similar to the range of issues which have been the subject of a joint BERR/Ofgem Review of Distributed Energy (DE). As an outcome of that review, a number of measures have been introduced including a new option aimed at reducing complexities and costs faced by DE operators who wish to become licensed.³³ We are also in the process of making changes to electricity distribution charging arrangements with the objective of ensuring that use of system charges to local generation reflect any benefit they bring in terms of avoiding or delaying the need for network reinforcement.³⁴

5.6. In RPI-X@20 we are not attempting to determine the extent to which ESCOs could deliver benefits or the extent to which they will emerge. Rather, to reiterate, we are focusing on ensuring that the networks and their regulatory framework do not present unnecessary barriers to their emergence.

5.7. In the table below we consider how the behaviour and regulation of energy networks may act as a barrier to potentially beneficial activity provided by ESCOs. This section has been informed by papers referred to above examining these issues. As the table shows, the main concerns relating to potential network and regulatory barriers can be categorised as related to access arrangements for connections. This encompasses both issues related to distribution charging structures and terms of access. As mentioned above, these sit alongside a range of other potential barriers identified by stakeholders which extend to areas beyond the network level.

Table 4: Potential competitive activities performed by ESCOs and potential barriers at the network level

Potential competitive activity	Potential barriers at the network level
Supply energy to a customer using a local generation plant, making only limited use of distribution networks.	Use of system charges may not reward energy supplier sufficiently for close proximity of generation to demand. Energy networks may be slow to build any new network infrastructure required. ³⁵
Supply energy to a customer using a local generation plant and using private network infrastructure rather than distribution network.	Access and charging arrangements for distribution networks may make development of own network infrastructure uneconomic.
Install electricity generation equipment at customer site and sell surplus electricity generated to other parties using distribution networks.	Energy networks may be slow to build any new network infrastructure required. Timeliness of information available for view on connection terms.

³³ Further details can be found at the following link:
http://www.ofgem.gov.uk/Sustainability/Environment/Policy/SmallrGens/DistEng/Documents1/DE_Final_Proposals.pdf

³⁴ Further details can be found at the following link:
http://www.ofgem.gov.uk/Networks/ElecDist/PriceCntlrs/DPCR5/Documents1/Initial%20Proposals_1_Core%20document.pdf

³⁵ However, we note that DG incentive rate in DPCR4 exceeded the cost of connecting DG.

<p>Install demand-side-management (DSM) equipment at customer site and optimise customer's use of energy appliances so that less use is made of energy network at peak times</p>	<p>May require collaboration with network operators so that information on network usage can be sent to demand-side management equipment at customer site.</p> <p>Requires charging structure, access terms, and metering capabilities that reward the use of the network in this way.</p> <p>Untested nature of technology which may require third party access to the network for trialling.</p>
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5.8. Pollitt identifies a need for more localised and granular charging arrangements in the context of helping to facilitate growth in companies offering energy services.³⁶ However, we recognise that this would not be straightforward, in particular because a more complex charging structure presents more risks of charges that could lead to unjustified discrimination between network users. We are currently in the process of making changes to distribution charging structures with the objective of improving the extent to which they are cost reflective.³⁷ We recognise the challenges in delivering a more cost reflective charging methodology which have emerged from this work.

5.9. As we have highlighted above, one potential form of model could involve decisions being made by ESCos as to whether to access existing distribution networks or by-pass them through building their own. This could potentially encourage greater innovation and efficiency within the energy networks if the networks suffer a loss from consumers no longer being connected to their network. However, current arrangements limit the extent to which networks suffer from such a loss. Essentially the regimes allow the costs of existing infrastructure to be recouped from remaining customers through distribution use of system charges, which may limit the impact of a threat of this type on network efficiency although networks will take other factors (e.g. reputation) into account.

5.10. While decisions involving whether to access existing networks or build new infrastructure will ultimately be made by markets, we recognise the role that networks and regulation can play in influencing these decisions. For instance, it is possible that barriers to trialling new ideas and innovations on existing infrastructure may influence decisions toward building new networks. Similarly, existing access charging arrangements (encompassing both charges and terms of access) will affect developments in this area. The structure of networks may also impact, particularly the bundling of the potentially contestable "last mile" with the rest of a regulated monopoly network.

5.11. We are of the view that networks, and future regulatory regimes for networks, should not place an unnecessary barrier on the development of competition in markets for the supply of energy services in ways that can benefit consumers and the low carbon economy. Similarly, the future regulatory framework should not create barriers to the effectiveness of competition along the supply chain. Recognising the measures which have been introduced following the recent BERR/Ofgem review of Distributed Energy and changes which are being made to distribution charging arrangements, we invite views on the merits of exploring ways to increase the transparency and cost reflectivity of access terms and conditions further.

5.12. We recognise the suggestion has been made that allowing smaller energy service companies the right to purchase some of the existing local distribution wires at fair value,

³⁶ Further details can be found at the following link:
<http://www.ofgem.gov.uk/Networks/rpix20/forum/Documents1/Telecoms%20Pollitt.pdf>

³⁷ Further details can be found at the following link:
http://www.ofgem.gov.uk/Networks/ElecDist/PriceCntrls/DPCR5/Documents1/Initial%20Proposals_1_Core%20document.pdf

similar to arrangements which exist in the US for local municipalities, might serve to facilitate growth in ESCOs through potential reductions in transaction costs.³⁸ We also invite views on the merits of further exploring the case for introducing such rights and the circumstances under which this might be appropriate.

6. Concluding remarks

6.1. We recognise that monopoly aspects are likely to remain a feature of energy networks. We expect that some form of price or revenue controls will continue to be needed. At the same time, we think that there are opportunities to make greater use of competitive forces within the energy sector. Enhancing the role of competitive forces, where possible, can contribute to the innovation needed to deliver a sustainable energy sector and help to provide value for money for consumers.

6.2. Our current thinking is:

- Ofgem should have the option of using competitive tendering models as a complement to our existing regulatory tool-kit, in specific cases and where there are indications of net benefits. While network customers would still face a monopoly supplier, the use of competition at the tendering stage could encourage lower costs and innovative approaches to network delivery which benefit consumers and contribute to a sustainable energy sector. This may be particularly important in the light of the uncertainties about the future development of energy networks.
- We recognise the existing role of competition in the market to build and maintain connections to gas and electricity networks. Ofgem has periodically reviewed the effectiveness of aspects of these arrangements and resulting changes have been made. Stakeholders have, however, identified a range of perceived barriers to effective competition in new connections markets. We have mentioned within our 2009-2014 Corporate Strategy that we intend to review independent network regulatory and market structures on an ongoing basis. As part of RPI-X@20, we will consider relevant lessons from our reviews of these arrangements.
- We will use, in our review, the guiding principle that neither the regulatory framework, nor the behaviour of networks, should pose any unnecessary barriers to the development of innovative business models (such as energy service companies) which could bring benefits for consumers and in delivering a low carbon economy. In developing future regulatory frameworks we will also be guided by the principle that networks and regulatory frameworks should not pose any unnecessary barriers to the effectiveness of competition along the supply chain. We invite views on the merits of exploring ways to increase the transparency and cost reflectivity of access terms and conditions further. We also invite views on the merits of further exploring the case for introducing rights for third parties to buy network assets and the circumstances under which this might be appropriate.

6.3. We intend to give further consideration to the framework needed to assess the role of tendering across networks over time and the circumstances in which such competitive tendering may be appropriate. We also intend to assess how a tendering regime may fit alongside other potential aspects of future regulatory frameworks. We also recognise that the role of competition within the sector may change perceptions of the risks borne by energy networks. Future work streams will consider the interactions between risks and regulatory rewards.

³⁸ Further details can be found at the following link:

<http://www.ofgem.gov.uk/Networks/rpix20/forum/Documents1/Telecoms%20Pollitt.pdf>

6.4. Some of the ideas presented in this paper if implemented may require legislative change, and in considering whether any will be taken forward in our winter consultation document, we will also consider whether some changes could be introduced by Ofgem under the current legislative and regulatory framework or whether some changes may need to be facilitated by Government.

6.5. We will continue to monitor evolving government policies and will provide further clarification on any relevant implications as part of our winter consultation document.

Current thinking

Annex 1: Examples of the use of competitive models in other UK sectors and internationally

1.1. This annex set out examples of the use of competitive models, as part of a regulatory regime, in other UK sectors and internationally. It is structured as follows:

- Competitive models used in the delivery of water services in France.
- Overground passenger rail franchising in the UK.
- The London Underground public-private partnerships.
- Franchises for London Bus services.
- Competition in the delivery of water services in England and Wales.
- Competitive tendering models for electricity networks in Argentina, Australia and India.
- The development of competition in US gas transmission networks.

1.2. For each example, we provide a short overview of the arrangements and, where relevant, highlight some of the debates surrounding them. It is beyond the scope of this annex to provide a detailed description or evaluation of the arrangements in each case.

Competition in delivering French water services

1.3. Similar to the arrangements in many other European countries, local authorities are responsible for governing the provision of water in France. There is no national regulator for water and local authorities define the general principles governing the service. The authorities monitor prices, control entry and exit, organise competition (where it exists) and promote uninterrupted service.

1.4. Authorities can choose between the following methods of water service provision:

- **Direct public management**, where the authority carries out all operation and investment;
- **Privatisation**;
- **'Gerence' contract**, where an operator is paid a fixed fee for services;
- **Intermediary management**, which is similar to gerence augmented to some degree with performance related pay; and
- **Delegated management contracts** which consist of two forms:
 1. **Leasing**: where the operator invests only in maintaining the network and is compensated for directly by customer receipts. Contracts are typically of 10 - 15 year duration.
 2. **Concession**: where the operator must finance a large part of investments over the duration of the contract. Infrastructure is typically handed over to the local public authority at the end of the contract – most without compensation. Contracts are typically of 20-30 year duration. These represent the most common form of contract arrangement.

1.5. (As an aside, concession contracts are also used for the operation of local authority owned electricity distribution assets. EDF is currently the agreed concessionaire for 95% of the French electricity distribution network.³⁹)

1.6. With urban expansion, private operation in the French water sector increased from 30% in the mid 1950s to 55% in the late 1970s and to 75% in the 1990s. The French Ministry of Environment highlight that 75% of water supply and 50% of sanitation management are currently supplied by the private sector. The most significant part of this private operation is through concessions.

1.7. The bidding process within the French water sector has progressively become more transparent since 1993. This more open form of tendering has reportedly reduced average contract length from 17 to 11 years.⁴⁰

Debate on the French arrangements

1.8. The main debates surrounding the French arrangements appear to focus on contract length and perceived impacts on prices.

1.9. Some commentators have highlighted that the previous length of contracts had posed barriers to new entry within the French water networks and, in doing so, mean that a high degree of regulatory oversight had to be maintained.⁴¹ These concerns have been balanced by others who have suggested that water providers operating under short contracts would have little incentive to invest as it may not be operating the franchise long enough to reap the benefits which would provide justification for such costs.

1.10. Some commentators have presented evidence of open processes having contributed to price reductions in the order of 10% as compared with the average pre-tender price, although we are uncertain of the time period over which these reductions have been calculated.⁴² These trends contrast to reports from alternative sources which suggest that, while average water prices of all three types of management (municipal division, delegated management and public-private joint ventures) increased over the period 1994-1999, in all years the private and public-private sector participation concessions charged higher prices for water than the publicly managed utilities.⁴³ They also contrast to reports which suggest that prices for services delivered through concessions are around 30% higher than services delivered by the public sector alone.⁴⁴ It is unclear, however, from these sources alone as to whether there are other factors which might go some way in explaining these trends.

Franchising in UK overground rail services

1.11. Most passenger rail services are provided by train operating companies under franchise agreements with the Department for Transport (DfT) which run for a fixed number of years (e.g. 7-10 years, with a small number of much longer franchises involving significant network and train service investment).

³⁹Saplacan, R. (2008) Competition in electricity distribution www.sciencedirect.com

⁴⁰ OECD Policy Round Tables (2004) Competition and Regulation in the Water Sector <http://www.oecd.org/dataoecd/44/1/33691325.pdf>

⁴¹ Baldwin, R. Cave, M. (1999) Understanding Regulation

⁴² OECD Policy Round Tables, (2004) Competition and Regulation in the Water Sector <http://www.oecd.org/dataoecd/44/1/33691325.pdf>

⁴³ Dore, M.H.I. Kushner, J. Zumer, K. (2003) Privatization of water in the UK and France— What can we learn? www.sciencedirect.com

⁴⁴ http://www.grjm.net/documents/Roxana-Saplacan/Chong_RefGov.pdf

1.12. There are around 20 rail franchises managed by the DfT which cover the vast majority of overground rail services in the UK, some services are run by operators without franchises. Recent reports have raised the possibility that one franchise (the East Coast Main Line) may revert to Government control.⁴⁵ A separate company, Network Rail, is the owner and operator of the rail network infrastructure, including the track and signalling. While Network Rail is the owner of most stations, franchised train operators are often responsible for specific operations issues.

1.13. The DfT has a strategic role and is particularly involved in major investments. The rail franchising objectives are as follows:

- To maintain high standards of safety;
- To improve operational performance and sustain a level of service quality consistent with meeting consumer needs as they develop;
- To deliver an efficient service within public expenditure constraints that represent value for money for passengers and taxpayers; and
- To secure accountable, viable operators who are able to demonstrate a culture of excellence and continuous improvement, and a vision for the future direction of the franchise.

1.14. In an attempt to ensure that these objectives are met, the DfT holds franchisees to the following contractual obligations:

- **Committed investment obligation:** The DfT requires Potential Train Operating Companies (TOCs) to self certify that lower risk obligations have been delivered, and for those of higher risk, provide supporting evidence. In some cases, if a commitment is delivered late or not in full, the TOC may need to make a payment to the DfT.
- **Performance improvements:** The train operator reports each month on its performance. If it falls short of the contractual benchmark, it must develop, agree with the DfT, and implement a 'remedial plan' to get back on course. Non compliance may lead to an enforcement order and further non compliance, to an event of default.
- **Service quality:** The DfT does not attach financial penalties or rewards to service quality performance and does not undertake direct monitoring. Instead, it is the TOC's responsibility to place arrangements for service quality, which must be approved by the DfT. The TOCs report regularly on the outcomes of these audits and must develop and implement remedial plans if targets are missed.

1.15. In deciding their specifications for a franchise, the DfT asks relevant local bodies to contribute their views on the department's proposals. TOCs bid and compete for franchises on the basis of the department's specification, service quality and the subsidy they require (or premium they would be prepared to pay) to run these services. The key differentiator between bids is the lowest subsidy or highest premium.

1.16. Franchised passenger train operators (as with other train operators) hold access contracts with National Rail which contain their access rights on the network along with terms and conditions of access. These contracts are subject to the approval of the Office of Rail Regulation (ORR).

⁴⁵ <http://www.dft.gov.uk/press/speechesstatements/statements/eastcoastfranchise>

Debate on the UK overground rail arrangements

1.17. The DfT have indicated their support for the way franchising enables it to guide quality requirements through the setting of objectives within the franchisees' contracts. Evidence of growth in usage and demand since privatisation and contracts were let has also been presented. They have also indicated their support for the incentives that franchise contract enforcement provides for quality standards to be maintained for the duration of the contract.⁴⁶ Alongside recognition that bidding has tended to be dominated by established UK companies, the DfT has presented evidence of the process delivering reasonable competition in bidding with all but one of the franchises offered, between April 2006 to November 2007, gaining the intended 3 bids or more per available franchise. The DfT have also indicated that the process successfully mitigated the risk of the incumbent being placed at an unfair advantage.

1.18. Much of the recent debate surrounding the arrangements for the provision of UK overground passenger rail services has focused whether private sector franchisees bear the downside effects of a change in conditions in a symmetrical way with rewards for upside effects. This has been discussed in the context of the East Coast Main Line. They culminated in decisions taken by the government to reject the calls of the franchise operator to re-negotiate their contract on the basis that challenging financial circumstances were compromising their ability to deliver the terms of their contract. Policy recommendations which have emerged following these events highlight perceived merits in longer term contracts, augmented with "break points", in aid of facilitating longer term planning, retaining operational responsibilities in the public sector for comparative purposes, and merits in reinforcing contract provisions to ensure a greater "passenger-focus" is maintained.⁴⁷ Franchises do have some protections for dealing with this including a cap and collar system that limits possible gains and losses. These don't generally apply in the first few years of the franchise life.

1.19. Earlier debates appear to rest on the following issues:

- **Self certification of lower risk obligations places reliance on train operators' systems:** Following a review of this system in 2007, the DfT found a lack of consistency in systems and in information provided by TOCs. The conclusion of this was that some TOCs were not fully complying with their contractual agreements. Consequentially, the DfT carries out checks on TOCs' data to test their consistency.
- **Limited transparency for passengers:** Currently, consumer watchdogs such as Passenger Focus and London Travelwatch do not have access to the service quality audits carried out by TOCs. This lack of transparency has been highlighted by the DfT due to the perception that greater transparency could greatly facilitate the "Adopt a station" initiatives, which involve passengers in ongoing monitoring of service quality.
- **Contract length:** It has been highlighted by the Transport Select Committee that, since 2003, no contract has been awarded for more than 10 years. Citing anecdotal evidence that existing contracts are perceived as creating perverse incentives for investment and ongoing improvements in customer service, the committee have promoted consideration of longer term contracts in rail franchising.⁴⁸

The London Underground public-private partnerships

1.20. A public-private partnership (PPP) is a type of collaboration between public bodies, such as local authorities or central government, and private companies. It has been suggested that the main government policy objective underpinning the emergence of a

⁴⁶ http://www.nao.org.uk/publications/0708/letting_rail_franchises.aspx

⁴⁷ <http://www.publications.parliament.uk/pa/cm200809/cmselect/cmtran/233/23306.htm>

⁴⁸ <http://www.publications.parliament.uk/pa/cm200809/cmselect/cmtran/233/23304.htm#a5>

number of PPP arrangements over the past two decades was to spur greater efficiencies and, in doing so, deliver greater value for money for taxpayers.

1.21. The London Underground (LU) network was split into 3 infrastructure companies ('Infracos') as part of the PPP program implemented over the period December 2002 – April 2003. These were: Metronet BCV, Metronet SSL, and Tubelines. Following Metronet, the owner of two of the Infracos, entering into administration in 2007, operation of the network has been divided between Tubelines and Transport for London (TfL).

1.22. In its first annual report on the PPPs⁴⁹, LU suggested the main advantages of the PPP arrangements related to opportunities to drive performance improvements through obtaining greater access to specialist technical resources, greater financial certainty and more efficient use of financial resources, project management skills, and knowledge of good industry practice (particularly in the area of whole-life asset stewardship).

1.23. Infraco's are responsible for both the maintenance and renewal of LU assets. These include:

- rolling stock;
- stations;
- tracks;
- tunnels; and
- signals.

1.24. Contracts are of 30 year duration and are subject to a review every 7 ½ years. Tubelines' contract was signed in December 2002 and Metronet's two contracts were signed in April 2003.

1.25. The Infracos are required to deliver a certain level of daily asset performance, and to upgrade the network to deliver improved capability in the long term. Financial incentives or penalties are given based on the Infracos' delivery against the performance levels set out in the contracts. The contractual performance measures are as follows:

- **Availability:** a measure of day-to-day reliability based on whether assets are available for service;
- **Capability:** a measure of what the assets are capable of delivering in terms of capacity and reduced customer journey time; and
- **Ambience:** a measure of the quality of the travelling environment (e.g. condition of seats; cleanliness of surfaces and train exteriors; levels of litter and graffiti; public address (PA) audibility; ride quality and in-car noise; lighting, heating and ventilation).

1.26. In accordance with these performance measures an extensive performance regime, bonuses and abatements (penalties), is applied to the Infrastructure Service Charge paid to an Infraco every four weeks, measured relative to a benchmark. Service points are also

⁴⁹ <http://www.tfl.gov.uk/assets/downloads/ppp-report-lu2003-04.pdf>

levied for failure to meet certain obligations such as ensuring closures/cancellations for engineering work end on time and do not disrupt the start of service. The contracts also measure performance according to a regime of service points, which are allocated for facilities faults and faults that are not rectified within a set time. Furthermore, the Infracos are required to deliver a series of defined major projects such as line upgrades and station modernisations. Performance on major projects is measured by progress against contractual milestones for a defined scope of work.

1.27. In their annual report LU also assesses:

- financial performance;
- asset performance;
- asset management;
- safety performance;
- relations with the PPP arbiter; and
- underground operations.

Debate on the London Underground arrangements

1.28. The main debates surrounding the PPP arrangements in delivering LU services appear to be focused on perceptions of mixed performance in delivering quality of service targets and potential policy implications following recent events which saw Metronet's owner entering into administration.

1.29. While evidence of an upward trend in contractual performance (based on the three dimensions of availability, capability, and ambience) has been presented, there is evidence to suggest Infracos have not always met contractual benchmarks.⁵⁰

1.30. Much debate surrounding the LU's PPP arrangements has been on the implications of Metronet's financial distress culminating into the company entering into administration in July 2007. Metronet's financial distress followed "extensive cost over-runs" and a provisional decision by the PPP Arbiter to grant only around 10% of the finances requested by Metronet following an extraordinary review.⁵¹

1.31. LU has highlighted Metronet's heavily reliance on its own shareholder companies, poor planning and execution of work (causing revenue shortfalls) and Metronet's apparently low availability of reliable information, hindering LU's ability to influence the firm's actions.

London Bus services

1.32. In London, bus services were gradually auctioned for franchise from 1985. The first round of tenders involved 1.2% of the London Regional Transport (LRT) bus operation and following this:

- Approximately 5% of network tendered each year (1985-1993);

⁵⁰ <http://www.tfl.gov.uk/assets/downloads/ppp-report-2007-2008.pdf>

⁵¹Ibid

- Almost 50% under competitive tender by 1993; and
- Remaining 50%, 'block grant network' operated as a monopoly by London Bus Limited (LBL).

1.33. Prior to the commencement of tendering for franchises, between 1972 and 1982 unit costs (costs per bus mile) in the London bus industry reportedly rose by over two thirds in real terms, although it is not clear based on this source alone the extent to which other factors such as oil price increases might have contributed to these increases.⁵²

1.34. The aims of the tendering process, as set by the Secretary of State, were to reduce unit costs by at least 2.5% per annum (and therefore reduce subsidy support), increase service quality, and to maintain constant fares in real terms.

1.35. The tendering was implemented through a split:

- Central planning company; and
- Subsidiary operating companies.

1.36. The planning company implemented a program by which both profitable and unprofitable routes were placed out to contract. Both subsidiaries of London Transport and outside public and private sector companies could bid for these three year contracts.

1.37. The tendering process consists of the following stages:

- Firms submit sealed bids based on the service specification, which represents the payment required by the firm to carry out the service;
- Winning bids required to yield a 5% rate of return turnover, to halt LBL subsidised bids using resources from the block grant network;
- Winning firms awarded 3 year contract;
- Service quality monitored by the Tendered Bus Division (TBD); and
- Any firm who failed to meet the service specifications would be open to criticism, financial penalty, and in extreme cases, contract termination.

Debate surrounding the London bus services

1.38. Evidence has been presented that tendering did lead to cost reductions as intended.⁵³ While some have attributed these trends to enhanced productivity, some have questioned whether these reductions have been driven by falling wages.

1.39. As there was a disentanglement of revenue and bus operators the TBD created incentives for the operator to run the required mileage. One such incentive was the deductions in the contract price for poor performance. Following the introduction of these incentives higher schedule coverage has been recorded on the tendered network than the block grant network. Tendering is also perceived to have incentivised high performance,

⁵² Kennedy, D. (1996) London bus tendering: a welfare balance www.sciencedirect.com

⁵³ Ibid

measured through miles gained, on the block grant network because routes on this network could be put out to tender if deemed necessary due to low coverage.⁵⁴

1.40. While contract specification for bus services is generally believed to have posed relatively few challenges, it has in the past been highlighted that it is not uncommon for there to be only two or three bidders.⁵⁵

Competition in the delivery of water services in England and Wales

1.41. Most households and non-household customers in England and Wales take water and sewerage services from a monopoly. There are 10 regional monopoly water and sewerage companies and 21 regional monopoly water-only companies, as well as a number of smaller suppliers. These are subject to price control regulation by Ofwat.

1.42. It is possible for another company, called an inset appointee, to take over from the regional monopoly in a specific location, if one of the following conditions is met:⁵⁶

- **Large user:** for supply to a large user likely to use at least 50 megalitres a year in England and 250 megalitres in Wales.
- **Unserved site:** for supply to an area in which none of the premises is served by an existing appointed company.
- **Consent transfer:** where an existing supplier agrees to transfer appointment to supply to a new supplier.

1.43. The inset regime allows an appointee to take over some, or all, of the activities within the water and sewerage supply chains, such as: maintenance and operation of network infrastructure within the appointment area; customer services; abstraction and treatment of water; and sewage treatment.

1.44. The inset appointee takes on the duties and responsibilities of the regional monopoly. It may need to use some of the infrastructure and resources of the regional monopoly so that it can supply its customers. If so, the inset appointee pays "bulk supply" charges to the regional monopoly for inputs that it needs (e.g. for the supply of clean water into its network).

1.45. There are similarities with the regimes in the energy sector for independent gas transporters (IGTs) and independent electricity distribution network operators (IDNOs).

1.46. The inset regime brings two elements of competition:

- The potential choice, for large users and owners of unserved sites, between the regional (or current) supplier and a new inset appointee may put competitive pressures on the regional supplier; and
- Potential inset appointees may compete against each other to be appointed.

⁵⁴ Ibid

⁵⁵ Glaister, S. and Beesley, M. (1990). Bidding for tendered bus routes in London. Cited in Baldwin, R and Cave, M. (1999). Understanding regulation.

⁵⁶ http://www.ofwat.gov.uk/competition/gud_pro_insetpolicyannex230109.pdf

1.47. The inset regime only brings choice of supplier to water and sewerage customers for large users, as indicated in the table below. For instance, in the case of a new housing development, the inset appointee becomes the monopoly supplier to households in the completed development.

Condition for inset appointment	Who is supplied water and sewerage services by the inset appointee?	Who decides whether to use an inset appointee (and whom to appoint)?
Large user	The large user	The large user
Unserved site (e.g. new housing development)	Customers with premises on the site (e.g. households in the new development)	Site owner (e.g. housing developer)
Consent transfer	Customers with premises on the transferred site	Existing supplier appointed on the site

Debate surrounding the UK water arrangements

1.48. Ofwat has reported the following potential benefits of the inset regime:⁵⁷

- It provides an additional incentive on appointed water companies to be more efficient;
- It encourages new entrants into the water and sewerage sectors; and
- It can be well-suited to small-scale innovative schemes such as local water recycling.

1.49. In approving inset appointments, Ofwat requires that the appointee's customers will be no worse off than if they had continued to be supplied by the incumbent company. Ofwat reports that customers of inset appointees benefit from price discounts on incumbents' prevailing volumetric tariffs and improved service levels.⁵⁸

1.50. However, there are concerns that inset appointments for new housing developments come at the expense of higher prices to the existing customers of the regional monopoly in that area.⁵⁹

1.51. There are also concerns that the process for obtaining approval may impede inset appointments. Ofwat has approved 21 new appointments and variations under the regime since 1997, only four of which have been for large users. Most have been for unserved sites.⁶⁰

1.52. Disputes over the terms for bulk supply may delay or prevent new inset appointments. Inset appointees may not agree with the terms offered by the regional monopoly. If the parties fail to agree terms, Ofwat needs to decide what the terms should be. There have also been long-running disputes under the Competition Act 1998 involving terms of supply to inset appointees.

⁵⁷ Ofwat (2008) Ofwat's review of competition in the water and sewerage industries: Part II

⁵⁸ Ibid

⁵⁹ <http://www.defra.gov.uk/environment/quality/water/industry/cavereview/documents/cavereview-finalreport.pdf>

⁶⁰ http://www.ofwat.gov.uk/competition/inset/prs_web_insetapptstable.pdf

1.53. The Cave review concluded that while inset appointments “have the potential to offer customers choice, lower prices, better service and reduced environmental impact, the current framework does not guarantee these outcomes because there are significant barriers to entry, costs may not be distributed appropriately and there may be inefficient entry”.⁶¹

Competitive tendering for electricity infrastructure in Argentina

1.54. Following a reform of Argentina’s electricity sector, major asset expansions in transmission have been proposed, approved and paid for by users, as opposed to the transmission company or the regulatory body. This is called the Public Contest method.

1.55. It has been reported that this method was introduced with a view to avoiding perceived inefficiencies and over-expansions.⁶² If approved by users, the construction, operation and maintenance of projects are put out to competitive tender.

1.56. A project needs to gain 30% of the voters’ support to gain consideration, and eventually needs 70% to be put out to tender. The winning bid price determines the rates paid for use of the project, and the transmission company is permitted to enter the bidding.

1.57. Alongside a perception that the tender process should deliver lower costs of construction, the primary perceived advantage of this method is that it helps to ensure that investment is only assigned to projects that users are willing to pay for.

1.58. However, it has been suggested that large legislative change would need to be made to implement this method within a GB setting.⁶³ Another reported disadvantage is that charges to users of the system may not reflect the true benefits of the expansion.⁶⁴

Competitive tendering for electricity infrastructure in Australia

1.59. The Basslink is a subsea electricity cable which connects electricity supplies between Tasmania and mainland Australia.

1.60. In the 1990’s studies were carried out by the State Electricity Corporation of Victoria and the Tasmanian Hydro Electric Corporation. The Basslink Development Board (BDB) was set up by the Tasmanian Government in order to develop the project further.⁶⁵

1.61. Following the decision that the bidders’ offers should be relatively unconstrained, the firms were left to decide upon the link’s key features.⁶⁶ A total of 14 bids were received and in February 2000 the BDB awarded the contract to National Grid.

1.62. National Grid held a 25 year contract to build, own and operate the interconnector.⁶⁷ An apparent key aspect of National Grid’s bid was the “dynamic rating” which allows the

⁶¹ <http://www.defra.gov.uk/environment/quality/water/industry/cavereview/documents/cavereview-finalreport.pdf>

⁶² Littlechild, S. 2007 Symposium on electricity reform in Argentina: Preface www.sciencedirect.com

⁶⁵ http://www.ptd.siemens.de/artikel0606_hvdc.pdf

⁶⁵ http://www.ptd.siemens.de/artikel0606_hvdc.pdf

⁶⁶

[http://www.treasury.tas.gov.au/domino/df/df.nsf/LookupFiles/EnergyInformationPaper.PDF/\\$file/EnergyInformationPaper.PDF](http://www.treasury.tas.gov.au/domino/df/df.nsf/LookupFiles/EnergyInformationPaper.PDF/$file/EnergyInformationPaper.PDF)

⁶⁷ http://www.nationalgrid.com/annualreports/2006/05_opfinrev/otheractivities.html

Basslink to run at higher capacity for limited periods.⁶⁸ Risk-sharing arrangements are included in the services agreement. However, the contractual arrangements aim to significantly mitigate the market risks for Basslink Pty Ltd and therefore enable the company to finance the project.⁶⁹

Competitive tendering for electricity infrastructure in India

1.63. It is expected that contracts connected with the building, owning, and operation of two electricity transmission lines connecting West Bengal, Assam, and Bihar will be awarded in September 2009.⁷⁰ This will allow surplus supplies to be imported from North-Eastern states.⁷¹

1.64. It has been indicated that contracts will be awarded on the basis of the lowest tariff. These projects mark the first independent power transmission projects in India and, in the absence of this (new) competitive process, would have been carried out by the state owned monopoly incumbent PowerGrid Corporation Ltd. The awarding of contracts will come on the back of a process which was launched in October 2008 where a request for qualifications was published. Following this, 8 bids were shortlisted in April 2009. The tendering process is being managed by Power Finance Corporation (PFC), a private financial institution based in Delhi.⁷² "Shell companies" have been established to conduct pre-construction works.⁷³

1.65. As an aside, formal rights to create multiple electricity distribution licences in India were established with the 2003 Electricity Act.⁷⁴ It has been reported that this has led to the issuing of second licences in several areas but that there is no evidence of actual direct competition between parallel distribution networks having emerged as envisaged by the Act.⁷⁵

US Gas Transmission Networks

1.66. In the US, gas pipelines have largely been built by investor-owners; stemming from the expectation that the projects would "pay for themselves".⁷⁶

1.67. US gas transmission has moved from being vertically integrated and heavily regulated to increasingly integrated and lightly regulated.⁷⁷ This move has been reported as largely prompted by gas shortages and the need for efficiency.⁷⁸

1.68. In order to move to a more heavily integrated and less regulated industry the Federal Energy Regulatory Commission (FERC) pursued the vertical unbundling of transportation and sales activities, and the majority of destination markets are now supplied by a number of competing pipelines.

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[http://www.treasury.tas.gov.au/domino/df/df.nsf/LookupFiles/EnergyInformationPaper.PDF/\\$file/EnergyInformationPaper.PDF](http://www.treasury.tas.gov.au/domino/df/df.nsf/LookupFiles/EnergyInformationPaper.PDF/$file/EnergyInformationPaper.PDF)

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[http://www.treasury.tas.gov.au/domino/df/df.nsf/LookupFiles/EnergyInformationPaper.PDF/\\$file/EnergyInformationPaper.PDF](http://www.treasury.tas.gov.au/domino/df/df.nsf/LookupFiles/EnergyInformationPaper.PDF/$file/EnergyInformationPaper.PDF)

⁷⁰<http://www.financialexpress.com/news/pfc-to-award-pilot-power-transmission-project-by-sept/483276/>

⁷¹ Ibid

⁷² <http://www.tradingmarkets.com/.site/news/Stock%20News/2291104/>

⁷³ http://www.pfcindia.com/UMPP_BrochTrans-Front.JPG; and http://www.pfcindia.com/UMPP_BrochTrans-Inside.JPG

⁷⁴ <http://www.ofgem.gov.uk/Networks/rpix20/forum/Documents1/Telecoms%20Pollitt.pdf>

⁷⁵ Ibid

⁷⁶ http://www.nera.com/image/PUB_CESSA_May2007.pdf

⁷⁷ Jamasb, T, Pollitt, M, Trieb, T (2008) Productivity and efficiency of US gas transmission companies: A European regulatory perspective www.sciencedirect.com

⁷⁸ Juris, A. (1998) Development of Competitive Natural Gas Markets in the United States www-wds.worldbank.org

1.69. Despite the lighter approach to regulation, there does remain to be a formal rate-of-return regulation on the interstate pipelines. FERC complement the rate-of-return regulation with competition, by encouraging the development of market institutions.⁷⁹

1.70. The liberalisation of the gas industry attracted a number of new entrants and evidence has been found on the competition which followed putting downward pressure on gas prices.⁸⁰ For example pipelines compete for shippers, and rates are negotiated competitively.⁸¹

Current thinking

⁷⁹ Jamasb. T, Pollitt. M, Triebs. T (2008) Productivity and efficiency of US gas transmission companies: A European regulatory perspective www.sciencedirect.com

⁸⁰ Juris, A. (1998) Development of Competitive Natural Gas Markets in the United States www-wds.worldbank.org

⁸¹ von Hirschhausen, C. (2006) Infrastructure investments and resource adequacy in the restructured U.S. natural gas market – Is supply security at risk? <http://www.tu-dresden.de>