

Key questions for RIIO-T2 and GD2

FLEXIBILITY AND THE ROLE OF THE SYSTEM OPERATOR



This is part of a series of discussion notes that are relevant for the next RIIO price controls.

A key challenge for RIIO-T2 will be for the regulatory framework to support the continued evolution of the electricity sector at a time of great uncertainty about what the future of the sector will look like. The regulatory framework will need to do so without leaving consumers with the bill for investment in assets that turn out to be obsolete.

CONTEXT

The forces that are knocking the electricity sector out of a status quo are well known – rapid uptake for distributed generation and electrical storage, greater opportunity for consumers to vary demand in response to price signals, electrification of heat, electric vehicles, and the changing location of new large generation. But the combined effect of all these forces – and others that are currently unknown – is highly uncertain. As such, system flexibility and smart networks are critical to managing the transition.

We expect the development of a smart and flexible system to create opportunities for innovative technologies and business models. Effective use of these innovations can benefit consumers by reducing the costs of electricity and improving service quality. But the policy and regulatory frameworks will have to change in response to and anticipation of these changes. The Call for Evidence issued by Ofgem and the Department for Business, Energy and Industrial Strategy (BEIS) last year represented a recognition of the need for reform.

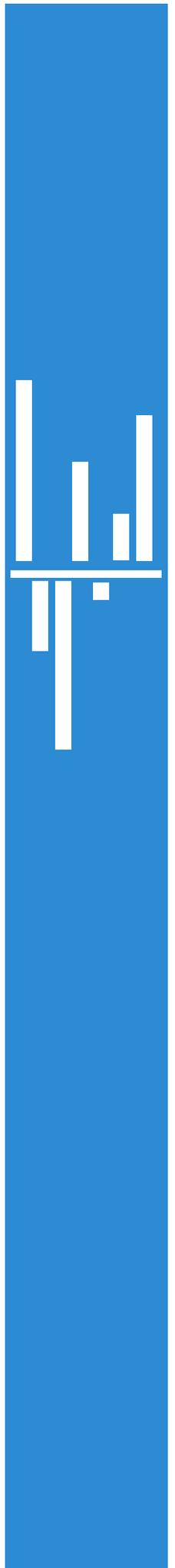
One of the key areas for reform is network charging. CEPA recently advised Ofgem on international approaches to cost-reflective network charging.¹ New distributed energy resources – such as on-site generation and storage – provide users with an opportunity to better respond to price signals. However, this potentially also reduces the amount of sunk network costs that are recovered from those users and, in turn, increasing the cost burden on other customers.

Another key issue of particular relevance for RIIO-T2 is the recent decision to separate National Grid's transmission owner (NGET) and system operation (SO) businesses. While the decision stopped short of requiring complete separation, it did require the SO to have its own licence and to implement measures to ring-fence the SO in terms of governance, staff and information.

DESIGNING NEW INCENTIVES

The RIIO framework aims to incentivise network companies and the SO to utilise cost-effective solutions rather than simply building more network. The use of totex and innovation funding are geared towards facilitating the transition of the role of networks. However, enduring arrangements may require additional regulatory mechanisms. These may either be built into the RIIO framework or developed as a completely separate set of operational incentives.

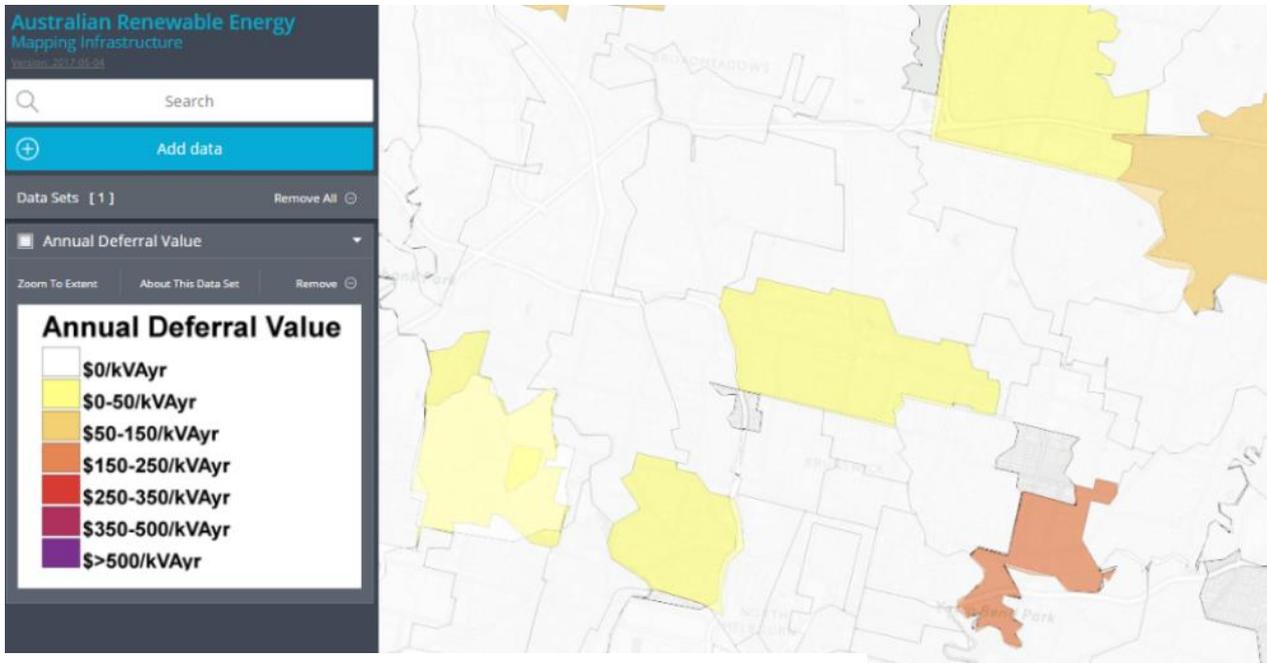
¹ [CEPA, International review of cost recovery issues, final report for Ofgem, February 2017.](#)



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This may be a situation in which Ofgem could learn from what has worked (or has not) in other countries. Evidence from Australia, as well as the New York Public Service Commission's 'Reforming the Energy Vision' proposals, highlight the benefit of network companies making data available to

third party providers of distributed energy services. Data about the constraints and opportunities faced by the network can enable the use of distributed generation and demand-side response as efficient alternatives to network investment.



Source: Australian Renewable Energy Agency, Network Opportunities Map

COST-BENEFIT ASSESSMENT FRAMEWORKS FOR SMART SOLUTIONS

The benefits of flexibility are clear in theory. But, in practice, the best solution to a network issue is highly specific to the circumstances (for example, age and condition of the local network asset, expected changes in electricity demand, etc.). For network companies to really take advantage of the opportunities that flexibility provides, they need comprehensive planning and cost-benefit assessment (CBA) frameworks to input into their decision-making.

We note three key elements for a CBA framework for flexibility:

1. **Quantification:** the focus here is on the variables that do not depend on broader policy decisions. This requires a comprehensive list of all costs and benefits, and assessment of the sensitivity to different assumptions. It is also important to consider the interactions between the variables – for example, how

does the value of electrical storage change with different levels of demand-side response in the system.

2. **Policy levers:** Ofgem and government decisions on matters such as network charging and whether demand-side response can access the capacity market will have a significant impact on the costs and benefits of different flexible options.
3. **Indirect impacts:** individuals' decisions on their use of flexible solutions can have an adverse impact on others if sunk network costs have to be spread across fewer customers. At the extreme, this could lead to a 'death spiral' of the network unless network companies (and their investors) are willing to accept write-downs of their regulated asset values. A related concern is that poorer and vulnerable customers are less likely to be able to access



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flexibility – either because of prohibitive upfront costs or because their energy consumption is inflexible, for example, for health reasons.

ALIGNING INCENTIVES AT TRANSMISSION AND DISTRIBUTION LEVELS

The growing importance of system operation at the distribution level will lead to ever stronger interactions between distribution and transmission. Under many, if not all, of the potential models for efficient use of system-wide resources that the Ofgem/BEIS Call for Evidence identifies, there will likely be multiple options for operation of a flexible system.

Some options may result in use of system services at distribution level, while others resolve the issue at transmission level. Where incentives are not appropriately aligned between distribution and transmission, this may result in inefficient signals to providers of services and non-optimal outcomes for consumers. Where misalignments exist that are unavoidable, it will be important to carefully consider and mitigate the potential for unintended consequences.

FINANCEABILITY OF A STAND-ALONE SO

Financeability is one of the core tenets of the RIIO framework. However, it is difficult for an asset-light company such as the SO to achieve the levels of credit metrics that are typically used in regulators’ financeability assessments. Ofgem side-stepped this issue in RIIO-T1 by considering NGET and the SO jointly in its financeability assessment. Such an approach would be difficult to justify given the move towards greater separation of the two.

CEPA has advised a number of its international clients on the question of how to measure and support the financeability of asset-light

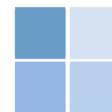
companies. The issue has come up regularly in the Irish electricity market, where the regulator has adapted various remuneration approaches for EirGrid help address the asset-light nature of the system operator business.

CEPA also advised Ofcom (building on previous work for PostComm) in considering whether an alternative approach to assessing financeability is needed for asset-light businesses.²

EFFECT ON DIFFERENT INDUSTRY PLAYERS

Network companies
<ul style="list-style-type: none"> • Will have to demonstrate that their business plan is informed by well-evidenced cost-benefit assessments and that they have a strategy to manage transmission-distribution interactions
Suppliers
<ul style="list-style-type: none"> • Decisions by network companies will have different impacts on different suppliers, depending on their generation assets
Ofgem
<ul style="list-style-type: none"> • The approach to RIIO-T2 (and GD2) will need to be consistent with policy decisions being made as part of the flexibility workstream • Challenge of meeting its financeability duty with regard to a stand-alone SO
Consumers
<ul style="list-style-type: none"> • In addition to flexibility offering consumers an opportunity to actively participate in the electricity market, the allowance and incentives set for RIIO-T2 will impact the prices consumers pay and the quality of service they receive

² [CEPA, Relevance of margin based approach, final report for Ofcom, 17 November 2015](#)



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KEY QUESTIONS

1. How should Ofgem update its incentive framework to support appropriate use of flexibility, and what incentives should network companies be proposing?
2. Can a consistent CBA framework be developed in time to inform companies' business plans, and what should be the assumptions used in that CBA framework?
3. What changes might be required to the regulatory framework, or to the role of network companies, to ensure that decisions take appropriate account of impacts at both the transmission and distribution levels?

CONTACT US



Patrick Taylor
Director



Lewis Heather
Senior Consultant

Patrick is an experienced energy economist advising regulators and utility companies on regulatory regimes and network charging. He recently advised Ofgem on options and regulatory transition processes to support creation of an Independent System Operator and on flexibility.

Patrick.Taylor@cepa.co.uk

Lewis has previously worked at Ofgem, where he led the development, implementation and close-out of incentives to drive efficiency and effectiveness on the actions of the gas and electricity system operators. He is using that expertise to advise companies and regulators on incentive arrangements.

Lewis.Heather@cepa.co.uk

CEPA is an economics, finance, regulation and competition advisory firm with offices in London and Sydney, Australia. Our staff and associates have extensive experience in developing and implementing regulatory frameworks in network and other regulated markets across the UK and other international jurisdictions. We combine intellectual rigour in applied regulatory economics with practical experience of advising a variety of stakeholders – regulators, regulated companies, suppliers and major consumers.

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