



27 April, 2017

James Veaney
Head of RIIO-2 Policy
Ofgem

Dear Mr. Veaney,

Attached please find the Regulatory Assistance Project's response to the RIIO-2 Framework Consultation. Please let us know if you have any questions or would like to follow up in any way.

Sincerely,

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Response to RIIO-2 Framework Consultation

Regulatory Assistance Project

Q 10. In light of future challenges such as the decarbonization of heat, what should be the role of network companies, including SOs, in encouraging a reduction in energy use by consumers in order to reduce future investment in energy networks?

→ What could the potential scale of this impact be?

(Please note that the response below also has relevance to **Qs 3 and 4, relating to Whole system outcomes**, as well as **Q 9, on network utilization, stranding and investment risk**)

- There are many benefits to reducing energy consumption through end-use measures, such as thermal insulation of buildings. These include environmental benefits, such as lower carbon emissions and lower emissions from combustion activities. They also include lowering the costs of maintaining secure gas and electricity networks by helping to reduce or defer more costly investment in network infrastructure.
- **Network companies, including SOs, are in a unique position to evaluate the cost-effectiveness of end-use energy efficiency from a network system perspective.** That is, they have the data to identify where end-use savings might replace or delay the need for certain investments in network infrastructure, thereby saving consumers money.
- This approach is not new to the UK, though it has not been mainstreamed in the regulatory framework or industry practice. In the 1990s, the Holyhead Powersave Project reduced peak demand by 10% on Holy Island in Wales through energy efficiency measures including efficient light bulbs, draught proofing, and installation of energy efficient electrical appliances. The project was implemented in response to growing demand resulting in the need for a new substation on the island. It is estimated that by deferring the need for a new electrical substation for another 5 years, the project resulted in avoided investment cost of 500,000 Euros.¹
- In the United States, there are several examples of regulators working with network companies to integrate cost-effective “non-network” alternatives into planning and investment, including end-use energy efficiency, demand response, and distributed renewable resources. One illustration of the benefits of such an approach comes from Consolidated Edison (Con Ed), the electric utility serving New York City and its northern suburbs. Con Ed recently estimated that the effect of its systemwide efficiency programmes in its ten-year forecast reduced capital expenditures by more than \$1 billion. Similarly, the New England Independent System Operator has

¹ Kelly, A., Marvin, S. (1994): Demand Side Management, The Electricity Sector and Town Planning. Electronic Working Paper No 8. Centre for Urban Technology, Department of Town and Country Planning. University of Newcastle upon Tyne. Retrieved from: <http://www.ncl.ac.uk/media/wwwnclacuk/globalurbanresearchunit/files/electronicworkingpapers/ewp8.pdf>

identified more than \$400 million of deferred investment in previously planned transmission investments in New Hampshire and Vermont beyond a ten-year planning horizon.²

- In order for network companies to identify and realize the network benefits of energy efficiency and other end-use measures such as demand response, storage, and distributed generation on the “customer side of the meter,” the proper regulatory framework must be in place.
- An example of how such a framework might be structured is California’s recent introduction of a non-wires alternative requirement. The requirement has several elements:
 - Networks companies are required to identify any significant upcoming distribution system investment need.
 - Once identified, each utility is required to solicit proposals to meet the need with portfolios of distributed resources. The proposals are to be evaluated based on a technology neutral, least cost, best fit bases.
 - Distributed resources include: energy efficiency, demand response, storage, PV panels, and other distributed resources.
 - If the most cost-effective, best value proposal is superior to the distribution wires investment solution, the utility will be required to enter into a contract with the winner.
 - The utility is entitled to recover all costs of administering the non-wires solicitation and, as compensation for an effective solicitation, will be entitled to earn 4% on the annual contract cost of the contracted non-wires alternative.³
 - The expected impact of investment in non-network alternatives, including energy efficiency, is difficult to gauge as it will depend on many factors. Instructive data on the benefits and potential scope can be drawn from discreet projects, including those listed earlier, where the savings resulting from investment in efficiency and other non-network alternatives compared to network-only investment have been calculated.
- The following is a list of resources with more information on experience with regulation of network companies to incentivize investments in cost effective non-network alternatives, and considerations on the application of such an approach in Europe:

Edith Bayer, [Energy Efficiency First: A Key Principle for Energy Union Governance](#), Regulatory Assistance Project, April 2018.

² Neme, C., and Grevatt, J. (2015). *Energy efficiency as a T&D resource*, p. 12. Energy Futures Group for Northeast Energy Efficiency Partnerships. Retrieved from http://www.neep.org/sites/default/files/products/EMV-Forum-Geo-Targeting_Final_2015-01-20.pdf

³ CPUC. (2016). Decision Addressing Competitive Solicitation Framework and Utility Regulatory Incentive Pilot. Rulemaking 14-10-003. Page 8.

David Littell et al., [Next-Generation Performance-Based Regulation, Emphasizing Utility Performance to Unleash Power Sector Innovation](#), National Renewable Energy Laboratory, September 2017.

Jan Rosenow et al., [Efficiency First: from Principle to Practice, Real world examples from across Europe](#), November 2016.

Chris Neme & Jim Grevatt, [Energy Efficiency as a T&D Resource: Lessons from Recent U.S. Efforts to Use Geographically Targeted Efficiency Programs to Defer T&D Investments](#), Northeast Energy Efficiency Partnerships, January 2015.