

# WPD - NIC Bid Challenges

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## *Third Party NIC Bid Information*

### Introduction

For Ofgem's 2017 Network Innovation Competition (NIC), Western Power Distribution (WPD) intends to enable a third party to submit an NIC application. This document outlines the three network challenges, which WPD now or in the future will face, relating to developing and maintaining an efficient, co-ordinated and economical system of electricity distribution.

This document also outlines the process WPD intend to follow and the timeline through to full submission pro-forma (FSP) submission. The first process is to complete the attached NIC Initial Proposal Form by the 16<sup>th</sup> January 2017 (12pm). No additional information, above that included, will be provided at this stage. Please submit to: [wpdinnovation@westernpower.co.uk](mailto:wpdinnovation@westernpower.co.uk).

This call has been published on Achilles UVDB, ENA Collaboration Portal and WPD's Website. Shortlisting to the information day will be based on how readable the submitted information is, evidence that the proposal is truly innovative and novel and that there isn't an undue level of risk.

A future call will be made in May 2017 which will be targeted at developing smaller NIA projects with third parties to commence in 2018 and beyond.

### Requirements

The NIC is an annual opportunity for electricity network companies to compete for funding for the development and demonstration of new technologies, operating and commercial arrangements. Up to £81m per year is available through the Electricity NIC. The NIC is expected to focus on funding larger scale innovative projects, at higher TRLs. Projects that have significant overlap with existing NIC or NIA projects are not eligible for funding.

As set out in Ofgem's Electricity NIC Governance Document an NIC project must involve the development or demonstration of at least one of the following:

- A specific piece of new (i.e. unproven in GB) equipment (including control and/or communications systems and/or software);
- A specific novel arrangement or application of existing electricity transmission and/or distribution equipment (including control and communications systems software);
- A specific novel operational practice directly related to the operation of the electricity Transmission System/Distribution System; or
- A specific novel commercial arrangement.

Also, it must be demonstrated that a project meets all the following criteria:

- Accelerates the development of a low carbon energy sector and/or delivers environmental benefits while having the potential to deliver net financial benefits to existing and/or future network customers;
- Delivers value for money for electricity customers;

- Creates knowledge that can be shared across energy networks in Great Britain (GB) or create opportunities for roll-out across a significant proportion of GB networks; and
- Is innovative (i.e. not business as usual) and has an unproven business case where the innovation risk warrants a limited Development or Demonstration Project to demonstrate its effectiveness.

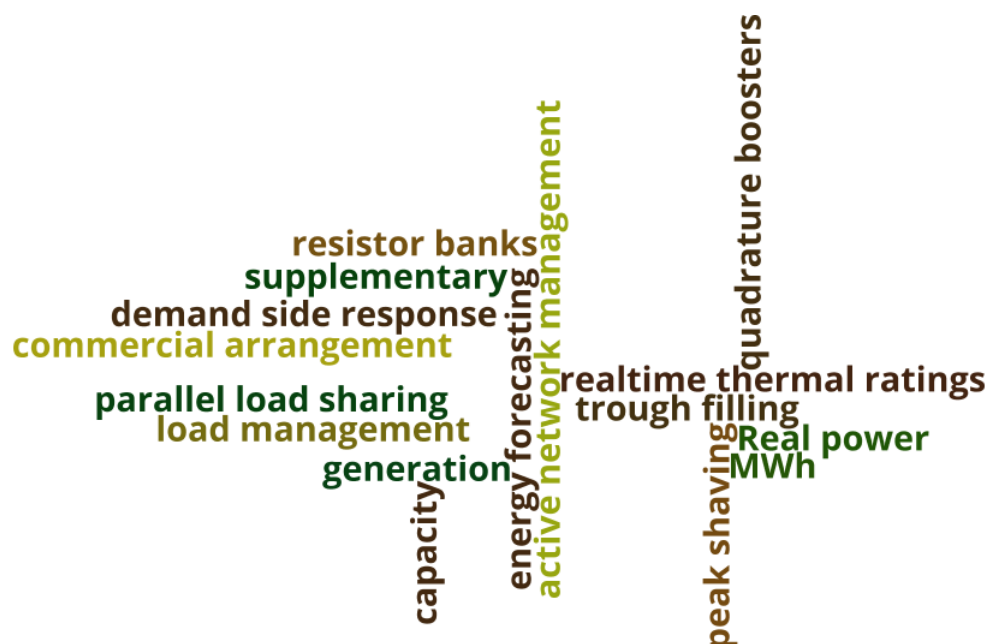
## Challenges

Discussed below are three network challenges that require technical or commercial solution(s). For all these challenges, a permanent technical or commercial solution is to be considered for installation or implementation at any point on the distribution network at 132kV.

An Initial Proposal Submission is to be made for each challenge considered. No information other than the Initial Proposal Form is to be submitted.

### A – Management of Real Power Networks Peaks

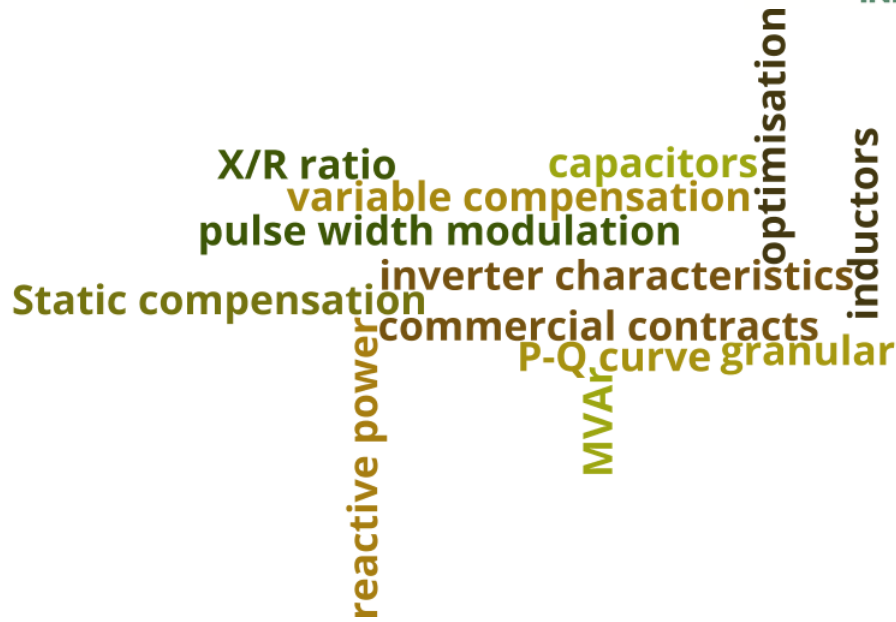
The increasing amount of embedded generation within the distribution network has significantly altered their traditional utilisation, and the intermittent nature of the generation means load flows are increasing in variability and volatility. Peaks of power consumption traditionally occurred in winter; however, there are now an increasing number of network points that have summer peaks, driven through the output of distributed generation at times of low general demand on the network. Load conditions triggering the reinforcement of assets may only occur for a small number of hours per year and there may be more preferential methods of controlling the power through an asset.



Challenge A key performance areas

### B – Optimisation of Reactive Power across Networks

Physically facilitating the connection of both distributed generation and low carbon technologies has altered the distribution network impedance characteristics and as this level of penetration increases, their local contribution to the load factor will vary on an increasingly frequent basis. Areas of network running at poor power factor levels will increase distribution losses and reduce the ability of the network to provide further capacity.



Challenge B key performance areas

**C – Voltage and Phase Angle Stability**

As the level of inverter connected embedded generation and energy storage increases, conventional rotating plant will be displaced and the intermittency of these new technologies may also increase the variability and volatility of real power flowing through the network. As a result, there will be an increase in both the risk and consequence of voltage and phase angle distortions causing cascade tripping and unacceptable power quality distortions.



Challenge C key performance areas

## Timeline

The first process for consideration is to submit the Initial Proposal documentation by the **16<sup>th</sup> January 2017, noon (12pm)** and be available for a face to face meeting on the 30<sup>th</sup> January 2017 in London.

WPD will invite the top eight applicants through to the face to face meeting and subsequently proceed with a single bid through to full submission.

Requirement	Date
Submission of Initial Proposal	16/01/2017 (12pm)
Notification of Progress to Information Day	23/01/2017
Attend Information Day Meeting	30/01/2017
Announcement of Bid to Proceed	03/02/2017
Submit ISP	Early April 2017 (Exact date to be confirmed)
Announcement of Bid to Proceed to FSP	Late April 2017 (Exact date to be confirmed)
Submit FSP	Late July 2017 (Exact date to be confirmed)

## Notes for Submission

- Within each proposal, WPD expects the applicant to have considered and planned for the full resourcing all aspects of project bid, mobilisation and delivery, including any activities it may wish WPD to undertake.
- Applicants are advised to review previous NIA and NIC projects and ensure synergies are highlighted and potential duplication is commented upon and differentiated.
- Projects (including cross-vector) must be able to clearly demonstrate the benefits attributed back to electricity bill payers.
- The NIC mechanism is currently under consultation for proposed changes. Further information can be found at <https://www.ofgem.gov.uk/publications-and-updates/network-innovation-review-our-consultation-proposals>
- Information must be submitted to WPD within the published pro-forma, which is limited to 5 pages. Information submitted within additional datasheets or appendices will not count towards the scoring.
- Proposals will be scored against the following criteria:

Criteria	Sub-criteria	Weight or score of sub-criteria
Technical Fit 40%	Number of challenges/problems project solves	15%
	Number of methods project demonstrates	15%
	Quality of innovation	10%
Service Levels and Delivery 35%	Compliance with NIC Governance	20%
	Quality of bid delivery programme	10%
	Knowledge Transfer	5%
Financial and Commercial	Benefits accruing to customers	10%
	Benefits accruing to wider system	10%
	Cost analysis	5%

25%		
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If any of the responses to the sub-criteria are scored below satisfactory, WPD will exclude the bid.

Answers will be scored using the table below and applying this to the marks / percentage available for each question.

100%	Excellent, fully meets and goes beyond expectations
75%	Good, fully meets expectations
50%	Satisfactory, meets minimum requirements
25%	Poor, falls below minimum requirements
0%	Did not answer the question