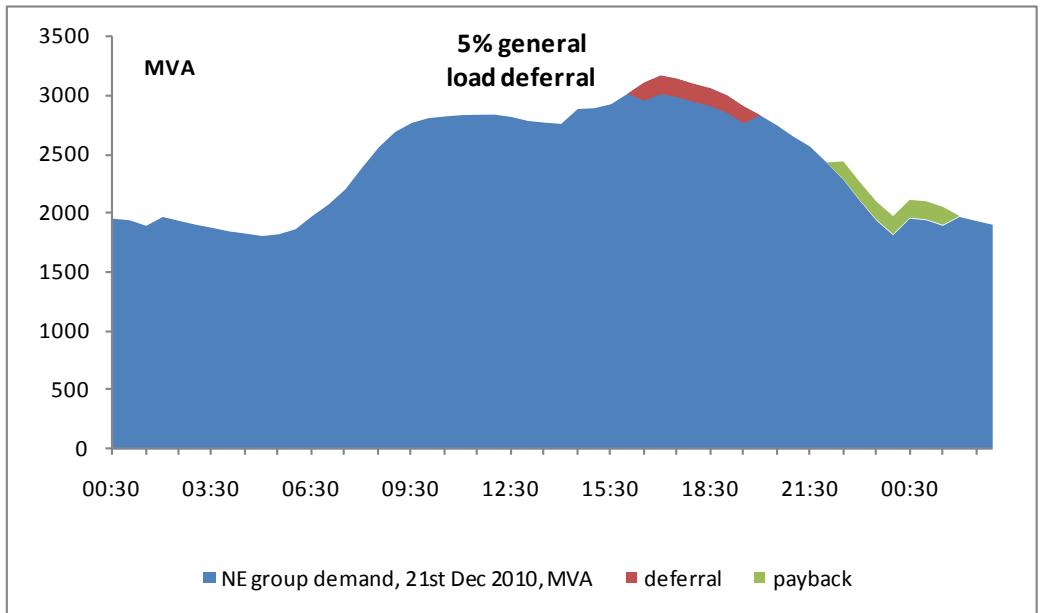


LCN Fund Full Submission
Supplementary Answer Form

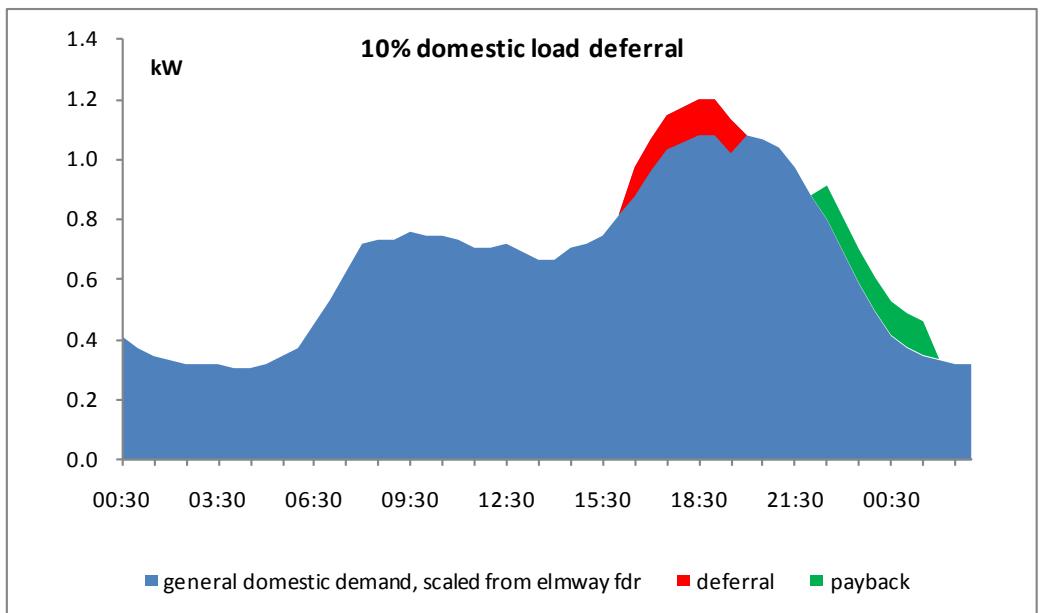
Tick if this answer is Confidential:

Tick if this answer has been provided verbally:

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| Project code: | NPGT202/1 | Question Number | NPG014 |
| Question date | 06/09/2012 | Answer date | 10/09/2012 |
| Submission section question relates to | Section 4 | | |
| Topic | Evaluation criteria | | |
| Question | What method(s) does the CLNR analysis assume is used to achieve the 5-10% demand shift, and are the same methods proposed for GBFM? (page 19) | | |
| Notes on question | The question applies to the general targets that have been adopted for design purposes. | | |
| Answer | <p>The Northern Powergrid analysis that these figures are based upon considers a range of typical load shapes, taken from representative feeders and substations on the Northern Powergrid network. These load shapes are: general domestic, I&C, storage heating and overall group demand. The general network peak is shown to be a consequence of falling I&C demand and rising domestic demand. Given broadly similar social and technological drivers, in the future these profiles are unlikely to change significantly.</p> <p>The focus for distributors is to reduce the winter evening peak. It would be counter-productive to move load away from the current peak only to create a new one somewhere else, so distributors will seek to move load into the overnight trough.</p> <p>The scope for shifting the current general-load curve is shown below, where it can be seen that any further use of load deferral in the DUoS 'red zone' starting at 16.00 hrs would create a new peak at 15.30 hrs:</p> | | |



Thus the scope for shifting load coincident with the DUoS red-zone is around 5% of the general peak. A similar approach for domestic load yields 10% before a new peak is created at 20.00 hrs:



For the GBFM, we have adopted a general target for 10% demand-reduction, in the knowledge that we may achieve less (due to availability and reliability) and that a reduction of greater than 10% is unlikely to yield further benefit.

For the GBFM project, we do not see why the method outlined above would not be valid, though each substation in the trial will have different combinations of load types. While it would be possible to achieve greater demand reduction (if the resources are available) at individual substations by tailoring to their specific load curves, this does not necessarily benefit the general network peak. The trade-off between mitigation of peak loads at substations and for the general network can be investigated during the project (this has not been carried out at the bid stage).

| | |
|---------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | The specific load curves of each substation will be known for the GBFM and can be used to provide an idea of the sort of demand reductions that tailored applications could achieve and how beneficial these are for the general network (this has not been carried out for the bid stage). |
| Attachments | |
| Verbal Clarifications (Consultants) | |