

**Ofgem Low Carbon Network Fund Tier 2 Evaluations - 2013**  
**Southern Electric Power Distribution – Solent Achieving Value from Efficiency (SAVE)**

Project No. 379526

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## Authorisation

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## History

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## Explanatory Note

This report, including the “traffic light” indicators that reflect the salient points and material issues of concern identified during the evaluation process, (other than Section 9) is based on:-

- the original full submissions received from the DNOs in August 2013;
- subsequent question responses through the formal written question process;
- discussions held at the initial bilateral meetings between the DNO and the Expert Panel on 28 August 2013;
- discussions held at the Consultant-DNO meeting on 5 September 2013;
- discussions held at the second bilateral meeting between DNO and the Expert Panel on 25 September 2013; and
- subsequent clarifications by the DNO.

In October 2013 the DNOs were given an opportunity to submit revised proposals. The traffic light indicators and the metrics shown in Sections 1 to 8 do not reflect any changes made by the DNOs in these revised submissions.








Section 9 of this report contain an addendum, which summarises the main changes made between the original and revised submissions, and the impact this has on the evaluation of the project against the criteria. Any significant changes to figures/metrics noted in this addendum.

## Project Summary

Full name:	Solent Achieving Value from Efficiency (SAVE)
DNO Group:	Southern Electric Power Distribution (SEPD)
The Problem(s):	The uncertainty in today's climate will see cases of energy efficiency reducing demand and low carbon technologies change demand profiles. Understanding these long term changes may reduce the need for reinforcement. However the uptake of energy efficiency does not link perfectly with network constraints so in many places reinforcements will still be required but ultimately may become stranded assets as energy efficiency grows. This project seeks to synchronise energy efficiency with the network problem, hence avoiding or deferring the need to invest in traditional solutions.
The Method(s):	<p>The project will evaluate the potential for DNOs to instigate different types of "energy efficiency measures" which will incentivise customer behaviour change, resulting in reduction of peak and overall demand on the electricity distribution network. The project will compare the impacts of five energy efficiency measures which use combinations of technology, commercial rewards and engagement campaigns informed by energy consumption and demographic data. The 5 methods are:</p> <ol style="list-style-type: none"> <li>1. Light Emitting Diode (LED) installation;</li> <li>2. Data-informed engagement campaign;</li> <li>3. DNO price signals direct to customers plus data-informed engagement;</li> <li>4. DNO price signals to Suppliers to pass through to customers; and</li> <li>5. Community coaching.</li> </ol>
The Trial(s):	<p>Trial methods 1-3 will be led by DNV KEMA – using a sample group of 1000 for each trial method and a control group of 1000 (properties). The three trial methods are: (1) LED installation; (2) Data-informed engagement campaign; and (3) DNO price signals direct to customers plus data-informed engagement.</p> <p>Trial method (4) will involve suppliers facilitated by ELEXON - using a sample group of 1000 and a control group of 1000 (properties)</p> <p>Trial method (5) will involve community coaching and will be targeting 2 neighbourhoods typically comprising up to 1,000 properties again with a control group, made up of similar neighbourhoods of up to 1,000 properties.</p>
The Solution(s):	The development of an investment decision tool that will allow DNOs to assess and select the most cost efficient methodology for managing a particular network constraint and most effective for its connected customer types. The SAVE project will explore new commercial models with which DNOs can interact with domestic customers.

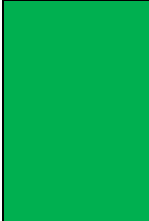
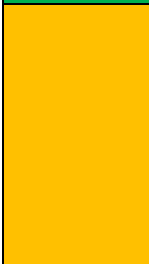
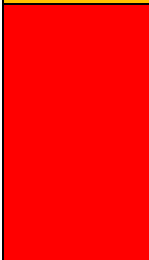
	<p>The learning objectives for the trials conducted in the project are:</p> <ul style="list-style-type: none"> <li>• to gain insight into the drivers of energy efficient behaviour for specific types of customers;</li> <li>• to identify the most effective channels to engage with different types of customers;</li> <li>• to gauge the effectiveness of different measures in eliciting energy efficient behaviour with customers; and</li> <li>• to determine the merits of DNOs interacting with customers on energy efficiency measures as opposed to suppliers or other parties.</li> </ul> <p>The project will identify the energy efficiency measures which are most cost effective in terms of achieving demand reduction.</p> <p>The project will develop a “market matrix” of relevant programmes, incentive mechanisms and opportunities operating in other regions to look for learning that can be applied in GB.</p>
<p>Key strengths and weaknesses against the criteria</p>	
<p>Strengths:</p>	<p>Some of the trial methods will certainly produce efficiency in the network and potentially reduce customer bills.</p> <p>The LED technology is easily transferable to differing consumer types.</p>
<p>Weaknesses:</p>	<p>Community coaching by areas may prove to be a weakness in the trial, but unless the effects are measured, it should not be assumed.</p> <p>The random selection of customers across the region, must ensure that they do not end up with customers who are at home during the day time and miss out on those customers at work during the day.</p> <p>Identification of income groups may prove a problem.</p>

## 1. Summary of Assessment against Evaluation Criteria

Criteria	Overall Assessment
(a) Low Carbon and Benefits	 <p>The Network Investment Decision Tool will enable DNOs to calculate the most efficient approach to avoid or defer reinforcement, whilst permitting the uptake of Low Carbon demand (EV &amp; HP) and the connection of new renewables to existing and new distribution networks.</p>
(b) Value for Money	 <p>There is a question as to whether this trial provides sufficient value for money in view of the number of man days allocated to some partners.</p>
(c) Generates New Knowledge	 <p>The only perceivable new knowledge gained from this trial is the relative merits of the five intervention methods. The data analysis and demographic combination may make it difficult to implement in general terms or as part of the Network Investment Decision Tools.</p>
(d) Partners and Funding	 <p>The external funding is about average for this project. However, only one partner has been selected by competitive tender. Some partners, such as Elexon, are not able to be competitively selected, but questions need to be asked about their man power estimates for data analysis.</p>
(e) Relevance and Timing	 <p>The timing seems to be driven by an increase in both demand and renewable generation in the Solent area. Network reinforcement will be required in the near future if nothing is done to alleviate the network constraints. Although energy efficiency can be simulated, this multi method approach will demonstrate the most effective and sustainable technique to reduce/shift demand.</p>
(f) Methodology	 <p>The methodology tries to establish many different combinations of technology, customer demographics and locality. This is likely to lead to confusing results and fail to establish the sustainability of particular methods.</p>
(g) SDRC	 <p>Provided the comments below are incorporated into the target criteria, then the SDRC schedule is a good practical balance of achievable deadlines.</p>

### **Key to Traffic Light Colour Codes**

The “traffic light” system used in the table above gives an indication of BPI’s assessment of the information provided by the DNO in support of the project in its detail, alignment with the LCNF evaluation criteria, identification and management of project risk and other aspects for each of the criteria. This is not intended to suggest whether projects should be funded or not, but to point out those areas which BPI believes merit particular scrutiny or consideration. Thus:-

	<ul style="list-style-type: none"><li>• Seems to be generally in line with the objectives and requirements of the LCNF evaluation criteria;</li><li>• Whilst there are some areas where additional information would be useful, that provided is generally comprehensive and provides no immediate cause for concern.</li></ul>
	<ul style="list-style-type: none"><li>• Some indication that the project is in line with the objectives and requirements of the LCNF evaluation criteria. However, further scrutiny is required to ensure to ensure this;</li><li>• There are some gaps in the information provided;</li><li>• Further assurance is needed to confirm that the project is viable and that risks are appropriately managed.</li></ul>
	<ul style="list-style-type: none"><li>• Significantly more assurance is required that the project is in line with the objectives and requirements of the LCNF evaluation criteria;</li><li>• There are some major gaps in the information provided;</li><li>• Considerable scrutiny is needed to confirm that the project is viable and that risks are appropriately managed;</li><li>• Potential major risks to the viability of the project.</li></ul>

In the following evaluations against the criteria, if the project is addressing various problems and/or trialling several methods and solutions, separate analysis of metrics and sub-criteria will be provided, if appropriate, for relevant criteria.



## 2. Criterion (a) Low Carbon and Benefits

<b>Criterion:</b>	Accelerates the development of the low carbon energy sector and has the potential to deliver net financial benefits to existing and/or future customers.				
<b>Overall assessment:</b>	This trial will be able to demonstrate how effective each method is in achieving energy efficiency and for how sustainable the effects of DSR.				
<b>Metrics (as quoted by the project):</b>					
	Method 1 LED Inst.	Method 2 Data engage	Method 3 DNO Price	Method 4 Supplier Price	Method 5 Community coaching
Net financial benefit (£) <sup>1</sup> :	£1.114m				
Network capacity release (kW) <sup>2</sup> :	40MW (Ref: Spreadsheet SSET206 Appendix A; Cell,C22)				
Base case time to release capacity (months) <sup>3</sup> :	As LEDs installed 54 Months (Ref: Above Speard sheet)				
Method time to release capacity (months) <sup>4</sup> :	54 Months (Ref: Above Speard				

<sup>1</sup> The financial benefit of each method (at the trial scale) compared to the most efficient existing method; **Net financial benefit = Base case costs** (the lowest cost of delivering the Solution (on the scale outlined as part of the project) which has been proven on the GB Distribution Systems) – **Method cost** (the cost of replicating the method at the trial scale once it has been proven successful)

<sup>2</sup> The network capacity released by each method (the additional headroom released on the distribution system following implementation of the Method)

<sup>3</sup> The time it would take in months to deliver the capacity shown in “Network capacity released” using the Base Case

<sup>4</sup> The time it would take in months to deliver the capacity shown in “Network capacity released” using the replicated Method

	sheet) 18 months Includes LEDs, Optic sensor & Smart Meter				
Potential for replication <sup>5</sup> :	100% residential				

Sub-criteria	Assessment
Carbon claims (including quantitative, if provided)	<p>This project is predominantly about energy efficiency and any carbon savings are as a result of improved efficiency, rather than a direct low carbon claim.</p> <p>The project claims it will contribute to aspects of the Carbon Plan to help achieve the governments targets for 2050, by:-</p> <ul style="list-style-type: none"> <li>• Energy efficiency net financial benefits to local customers (from reduced bills)</li> <li>• DNO licence area customer benefits through reduced DUoS (from reduced network reinforcement)</li> </ul> <p>While the claims are plausible they are not clearly quantified in carbon reduction.</p>
Quantitative analysis	<p>The benefits indicated in Table 4 of Section 3.5.1 show an effective saving of £21m if LEDs were installed in the whole Solent area.</p> <p>Full analysis by the University of Bath is in appendix N.</p>
Robustness of financial benefits	<p>In view of the known energy characteristics of LED lighting, it is only a matter of customer acceptance of the lighting and the price that would deter the wholesale adoption of LEDs. With time, those customers who advocate the benefits of the efficiency of LEDs, will encourage family, friends and neighbours to the advantages. Consequently the financial benefits can be clearly demonstrated. This is reinforced by the monitoring of some individual customers and secondary substation.</p> <p>The business case has been developed by the University of bath based on robust studies on GB Electricity Demand model and the Interlink Report (Ref p15/16).</p> <p>The assumption on base case needs to be checked. It requires testing to see if it assumes zero existing penetration of LED lighting or a mix of low energy lighting etc. If it is based on savings against higher consuming halogen or filament lamp types the net benefit has a danger of being</p>

<sup>5</sup> The estimated number of sites or % of the GB Distribution System where the method could be rolled out, up to 2040

Sub-criteria	Assessment
	<p>overstated.</p> <p>From an initial review of Appendix N the benefits case states <i>“Lighting is responsible for 11.5% domestic consumption. For a typical household, this demand is driven by 14 light bulbs, each with the power of 60 Watt”</i>.</p>
<p>Capacity released (and how quickly)</p>	<p>The National lighting demand at peak is 4.49GW, the effect of using LED lighting would reduce the peak demand by 3.14GW to just 1.35GW. [p16]</p> <p>There is no projection provided on duration for a national roll-out, however the Solent area capacity release is quoted as 54 Months and 40MW.</p>
<p>Replication (applicability of technology, dependence on specific network characteristics)</p>	<p>The replication of the Method 1 (LED Installation) is not restricted to any particular network or customer types (residential/SME/Commercial) and would be equally applicable to all DNOs.</p> <p>The other methods relate to consumer engagement and behavioural stimulation techniques.</p>

### 3. Criterion (b) Value for Money

<b>Criterion:</b>	Provides value for money to distribution customers
<b>Overall assessment:</b>	It is not considered that this trial provides sufficient value for money in view of the number of man days allocated to some partners.
<b>Metrics (where available):</b>	
Size of benefits to distribution system <sup>6</sup>	£21m to Customers in the Solent area.

Sub-criteria	Assessment
Proportion of benefits attributable to distribution system (as opposed to elsewhere in the supply chain)	<p>Most of the labour rates are between £413 and £523 per man day, with the exception of a Professor at £828 per man day. The SEPD day rate is [REDACTED]</p> <p>Section 3.5 [p15] identifies GB and Solent area benefits scaled up from the trial groups.</p>
How learning relates to the distribution system	Learning from this project seems to relate to how the DNO should engage with the residential customer. Since the DNO will be using agents to directly interface with the customer, the direct experience of engagement by the DNO will be diminished.
Approach to ensuring best value for money in delivering projects	<p>Tendering through open and competitive procurement process for the LED supply and roll-out should ensure competitive pricing. The remaining partners were selected directly for their experience.</p> <p>The submission does not however detail how value for money is activity sought from the supply chain though encouraging innovative approaches or incentives to the tender.</p> <p>SEPD have approached University of Winchester School of Media and Film instead of a media agency to develop its customer engagement material. While this may have created some cost savings they have not been quantified.</p>
Identify and review major cost items, examine justification for relevant costs, assess choice of discount rates	<p>A breakdown of costs indicates that the installation of LEDs will cost £1.3m; the Data Informed Engagement Campaign £1.5m; the provision of DNO Price Signals direct to customers £1.7m; the provision of DNO Price Signals to Suppliers £1.9m; and Community Coaching £770k.</p> <p>Further costs identified are Management costs at £1.2m; Modelling at £2m; Recruitment at £1.4m; and Knowledge Dissemination at £1.5m.</p>

<sup>6</sup> Size of benefits attributable or applicable to the Distribution System versus elsewhere

<b>Sub-criteria</b>	<b>Assessment</b>
	<p>A full detailed spread sheet has been provided by SEPD (Ref: SEPD and Partner Labour Rates and Man Days CONFIDENTIAL.pdf).</p> <p>There are two areas of concern: (a) the number of man days for the University of Southampton (1,784 MD = 8 MY); and (b) the number of man days allocated to Elexon (656 MD = 3 MY).</p>

## 4. Criterion (c) Generates New Knowledge

<b>Criterion:</b>	Generates knowledge that can be shared amongst all DNOs	
<b>Overall assessment:</b>	The only perceivable new knowledge gained from this trial is the relative merits of the five intervention methods. The data analysis and demographic combination may make it difficult to implement in general terms or as part of the Network Investment Decision Tools.	
<b>Metrics (where available):</b>		
Conforming to default IPR arrangements:	YES <del>NO</del> (No IPR created ref. p30 cl.5.6)	

Sub-criteria	Assessment
Potential for new/incremental learning to be generated by the project	<p>Comparison of different intervention methods and the sustainability of any DSR.</p> <p>There is the potential for new knowledge about the Supplier and DNO price signals and how the Balancing and Settlement arrangements would have to change to accommodate new pricing signals. This knowledge could be lost or delayed if ELEXON does not participate in the trials.</p>
Applicability of learning to other DNOs	<p>Limited, but the Network Investment Decision Tools may be of use to some planning and network design teams where it can be integrated or act as a bolt-on to existing tools. There are training implications for DNO designers that may govern the degree to which the learning would be adopted.</p> <p>Knowledge gained about the Settlement arrangements and any need for change would be a significant gain for all DNOs and Suppliers.</p>
Proposed IP management and any deviations from default IP principles	<p>No IPR is expected to be created.</p> <p>Knowledge and learning in the form of 'know how' is intended to be fully shared with stakeholders, particularly DNOs.</p> <p>There is no apparent evidence of deviations from default IP principles.</p>
Credibility of proposed methodology for capturing learning from the trial and plans for disseminating	<p>Learning will take the form of "know how" from the results of the trials.</p> <p>Much of the project seems to gather existing learning from the partners and their involvement in schemes in the UK and abroad.</p> <p>The core area of learning seems to be how a DNO or their agent should engage successfully with customers to facilitate energy efficiency.</p> <p>It is anticipated that the project will provide new knowledge on the effectiveness and value of energy efficiency measures for DNOs. The learning objectives provided require further refinement, but will be</p>

<b>Sub-criteria</b>	<b>Assessment</b>
	refined during the early stages of the project. SAVE has provided a credible table of dissemination methodologies and target audiences (ref. p28) which would appear to be reasonable.

## 5. Criterion (d) Partners and Funding

<b>Criterion:</b>	Involvement of other partners and external funding.		
<b>Overall assessment:</b>	The external funding is about average for this project. However, only one partner has been selected by competitive tender. Some partners, such as Elexon, are not able to be competitively selected, but questions need to be asked about their man power estimates for data analysis.		
<b>Metrics (where available):</b>			
Total cost of project (£):	£13,197,000 <b>Revised to £10,461,730</b>	Number of consortium members:	7 (including DNO)
Cost met by DNO (£):	£1,224,000 Revised to £1,026,740	Cost met by DNO (% of total cost):	9.8%
LCNF support (£):	£9,975,000 Revised to £8,746,600	LCNF support (% of total cost):	83.6%
Cost met by others (£):	£1,581,000 Revised to £688,390	Cost met by others (% of total cost):	15.1% <small>[Note: not equal to 100% due to DNO compulsory.]</small>

Sub-criteria	Assessment
Appropriateness of collaborators (including experience, expertise and robustness of commitments)	<p>The partners have be selected on their past experience and involvement with assessing how to get to a low carbon future.</p> <p>There is some question relating to the involvement of Elexon as a partner and advice will have to be sought from Ofgem. If Elexon does not participate with the trial, then there are concerns about the availability of customer data from energy Suppliers.</p> <p>At the time of the submission contracts were in the process of negotiation with key project partners. Progress should be checked together with contingency arrangements if negotiations are unsuccessful. (Ref: Appendix O)</p>
Level of external funding (presented on a comparable basis with other projects)	The level of funding of £1,581k is similar to other trials of a comparable scale and combination of technical and pricing interventions.
Effectiveness of	The key SAVE project partners have worked with SEPD through the



<b>Sub-criteria</b>	<b>Assessment</b>
process for seeking and identifying new project partners and ideas	initial screening period (ISP) through to the main bid submission.  A series of workshops held by SSE has resulted in the selection of an additional partner for network monitoring (University of Bath). Partners were chosen because of their particular experience in the field of energy efficiency.

## 6. Criterion (e) Relevance and Timing

<b>Criterion:</b>	Relevance and timing.		
<b>Overall assessment:</b>	<p>The timing seems to be driven by an increase in both demand and renewable generation in the Solent area. Network reinforcement will be required in the near future if nothing is done to alleviate the network constraints. Although energy efficiency can be simulated, this multi method approach will demonstrate the most effective and sustainable technique to reduce/shift demand.</p> <p>It could be expected that predicted fuel cost increases may mean that energy efficiency drives itself, the project does however provide an opportunity to establish how much of a role DNO's can play in this.</p>		
<b>Metrics (where available):</b>			
Start date:	1 <sup>st</sup> January 2014	Elapsed time of project:	29 <sup>th</sup> June 2018 (4.5 years)

Sub-criteria	Assessment
Significance in the project in: (a) overcoming current obstacles to a low carbon future	This project is aimed at energy efficiency rather than directly encouraging low carbon technology. However, the side effect of efficiency will be the headroom for more renewable energy installations and demand increases due to electric vehicles.
(b) trialling new technologies that could have a major low carbon impact	The main energy efficiency technology is the introduction of Light Emitting Diodes (LED) for general service in domestic residences. Lighting contributes about 11.5% of the domestic demand. The transfer to LEDs should reduce the lighting consumption by about 50%.
(c) demonstrating new system approaches that could have widespread application	<p>None of the five methods is particularly new in their own right. However, the combination of urban and rural areas coupled with a diverse range of wealthy and poor neighbourhoods is a new approach to this complex issue.</p> <p>One feature that is differs from previous trials and full scale interventions, is the direct contact with the customer to facilitate the installation of LEDs. This will give some confidence to the trial that the LEDs are in use and not shelved or sold.</p> <p>The project is limited to targeting domestic customers only, the community coaching and targeted behavioural incentives approach, means Industrial and Commercial and SME customer types appear out of scope.</p>

<b>Sub-criteria</b>	<b>Assessment</b>
	<p>The cross section of domestic customers do however cover diversity of socio-economic and demographics ranging from Urban, Suburban and Rural areas.</p>
<p>Applicability of the project to future business plans, regardless of uptake of Low Carbon Technologies (LCTs)</p>	<p>If the project can demonstrate a significant increase in energy efficiency by the applied technology of LED and customer involvement, then this technique can be applied equally to the rest of the DNOs.</p> <p>The five methods of customer engagement will enable the DNO to establish which technique or combinations of techniques will provide the desired efficiency gains.</p> <p>It may be possible through the timing of this project during RIIO ED1 for DNOs and Ofgem to gain an understanding of the potential for DNO-led energy efficiency measures to avoid the need for reinforcement.</p>

## 7. Criterion (f) Methodology

<b>Criterion:</b>	Demonstration of a robust methodology and that the project is ready to implement.		
<b>Overall assessment:</b>	The methodology tries to establish many different combinations of technology, customer demographics and locality. This is likely to lead to confusing results and fail to establish the sustainability of particular methods.		
<b>Metrics (where available):</b>			
Requested level of protection against cost over runs (default 5%) (%):	0% [p37 cl.6.6]	Requested level of protection against direct benefits (default 50%) (%):	0% [p36 cl.6.5.2]

Sub-criteria	Assessment
Feasibility of project proposal	Although there are five methods employed in this trial, they will demonstrate the effectiveness of each method and the long term sustainability of the intervention.
All risks, including customer impact, exceeding forecast costs and missing delivery date	<p>Appendix C shows and number of high risk items and Appendix C contingency plans. In particular failures to recruit enough customers and equipment failures.</p> <p>The project brief states that ‘recruitment rate’ is part of the trial itself. It should be noted that the sample sizes for the trials are ‘ideal’. This is an area that indicates some uncertainty, while it is acknowledged that this is a learning outcome, the result of low take up will make it hard to determine small changes in behaviour. So some reassurance on the feasibility of recruitment methods used should be sought from the project sponsor.</p> <p>Line item 3 in Appendix 3 relates to cost over-run, but no contingency has been sought in the funding. The proposal appears to put a lot of emphasis on use of SSEPD’s existing project management governance to mitigate the risk of overrun. Regardless of the effectiveness of this approach, considering the unknowns and the risk log, a contingency budget would be advisable.</p> <p>There is a risk that ELEXON may not participate in this trial. SSE has given an appraisal of this situation in Q&amp;A 10. If ELEXON does not participate the there is a reduction in costs of £1.9m less a £600k contribution. Potentially Method 4 would be dropped unless an alternative organisation could be found.</p>

Sub-criteria	Assessment
	<p>Derogations may be required during the trial process, there is a potential for delays in obtaining derogations or derogations not being granted. These risks are outlined in Q&amp;A #12 and Appendix Q of the submission.</p> <p>While the methodology for identifying risks and contingency planning appear sound, there are no contingency plan targets or assigned owners.</p>
<p>Whether items within project budget provide value for money</p>	<p>Competitive tender for the supply and roll-out of LED lighting. Other participants have predominantly been chosen for the current and past experience in the low carbon and energy efficiency areas. No particular item stands out as not being value for money.</p> <p>However, it does seem that the five methods described in this trial may be excessive and therefore the trial costs are on the high side at £13m.</p>
<p>Project methodology (including depth and robustness of project management plan)</p>	<p>Media agencies will be used to engage with customers. The LED trial will be by direct contact with a proportion of customers with assistance with the fitting of the replacement lamps.</p> <p>The number of field trials could possibly have been reduced and the number of man days involved in data analysis reduced.</p>
<p>Appropriateness of Successful Delivery Award Criteria (SDRC)</p>	<p>The SDRC are tailored to the key milestones of the trial and are therefore considered appropriate.</p>

## 8. Successful Delivery Reward Criteria

<b>Criterion:</b>	Appropriateness of the SDRC definitions and timing and adequacy of links to key project milestones.
<b>Overall assessment:</b>	Provided the comments below are incorporated into the target criteria, then the SDRC schedule is a good practical balance of achievable deadlines.
<b>Review:</b>	<p>The majority of SDRC targets are reasonable with the exception of number 3.2 and number 6.</p> <p>(3) The requirement to hold at least one meeting with trial customers by January 2017 seems to be weak and shows a lack of effort to regularly engage with the trial customers on a reasonably regular basis. There is probably a need to engage with the trial group on a six monthly basis. Inevitably some customers will not be available to attend some meetings. The time of day and weekday/weekend may play a part in the attendance numbers.</p> <p>(6) The target of 50% of installed optic sensors and smart meters by June 2015 should be increased to 80%.</p> <p>In the case of SDRC number 7, it is assumed that this relates to the final development if the “Network Investment Decision Tool”. If not, then an additional SDRC is required.</p> <p>A six monthly reports and project closure report should be included in the SDRC targets.</p> <p>Finally successful recruitment of customer numbers to achieve a sound statistical sample is a critical element of this project, which appears to need clear mapping to a SDRC category.</p>

## 9. Addendum: Changes made in re-submission

<b>9.1</b>	<b>Summary of Changes</b>		The main change to the project is the decision to delete Method 4 (DNO price signals to Suppliers) and associated participants, namely Elexon and the raft of Suppliers from the re-submission. This change also results in the loss of partner contributions from Elexon and University of Bath.
9.1.1	Tendering		The project will appoint a Light Emitting Diode lamps (LED) advisor to assist in the tendering process for the procurement and installation of LEDs. The network model development will also be put out for tender.
<b>9.2</b>	<b>Impact on LCN Funding Application</b>		The resubmission has resulted in a reduction of LCN Funding from £9,975k to £8,293k a reduction of £1,682k.
9.2.1	Criterion (a) Low Carbon Benefits		The revised tables in the Project Business Case shows the anticipated impact of each trial method.  <i>“A number of scenarios have been created to evaluate the expected impacts and benefits from all the measures being deployed in the trials. A few examples are included below, however please refer to Appendix N for full workings, split into 5 sections:”</i>

Average annual household consumption (kWhs per year)	4,226	4,226	4,226	4,226
<b>Measure</b>	<b>LEDs</b>	<b>Data informed engagement</b>	<b>DNO rebates</b>	<b>Community Coaching</b>
Average annual household lighting consumption (kWhs per year)	634			
Expected total reduction (%)	10.5	11	15	15
Expected annual reduction (kWhs per year)	444	465	634	634
Expected hourly reduction (kWhs)	0.05	0.05	0.07	0.07
Expected hourly reduction (Watts per hour)	5	5	7	7
Expected daily reduction (Watts per day)	122	127	174	174

<b>Small LV Urban</b>	<b>LEDs</b>	<b>Data informed engagement</b>	<b>DNO rebates</b>	<b>Community Coaching</b>
Daily reduction on LV cable with 150 customers (kW)	18	19	26	26
Rating of circuit (kW)	200	200	200	200
Headroom made available (%)	9.12	9.55	13.03	13.03
Equivalent to connection a number of 3kW heat pumps or EVs now able to connect (without diversity)	6	6	9	9

LV Major		LEDs	Data informed engagement	DNO rebates	Community Coaching
<b>LV MAJOR LOW COST</b>	Cost of LV major works with transformer (£)	190,000	190,000	190,000	190,000
	Maximum funds available to supply measures to 400 customers (£)	475	475	475	475
	Cost for measure per customer (£)	150	120	220	293
	Cost for measure for 400 customers (£)	60,000	48,000	88,000	117,333
	Saved budget due to deferred reinforcement (£)	130,000	142,000	102,000	72,667
	GB LV major works expected to be undertaken	4,213	4,213	4,213	4,213
	GB cost of LV major works (£)	800,470,000	800,470,000	800,470,000	800,470,000
	Potential number of GB LV major works deferred by use of measure	421	421	421	421
	Cost to reinforce suitable networks in GB (£)	80,047,000	80,047,000	80,047,000	80,047,000
	Cost to implement measure on suitable networks in GB (£)	25,278,000	20,222,400	37,074,400	49,432,533
	GB saved budget due to deferred reinforcement (£)	54,769,000	59,824,600	42,972,600	30,614,467

			There is also a substantially revised section on the four trial interventions described on page 17 [.pdf version].
9.2.2	Criterion (b) Value for Money		<p>The total project cost has reduced by approximately £3m and may now be considered reasonable value for money when compare to other projects of a similar nature.</p> <p>Section 4(b) (Provides Value for Money to Distribution Customers) of the resubmission includes enhanced details of the Network Investment Tool.</p> <p><i>“Real experience of Energy Efficiency will be gained through the trials resulting in the production of a Network Investment Tool that will enable DNOs to accurately select the most cost efficient methodology for managing a particular network constraint and most effective for its connected customer types.”</i></p> <p>Table 6.5.1 (Project Costs) page 33 (.pdf version] gives a detailed breakdown of the revised costing by work package and details of man days and day rates.</p>
9.2.3	Criterion (c) Generates Knowledge		There are no significant changes in the resubmission excepting the re-allocation of costs to the “other” category.
9.2.4	Criterion (d) Partners and Funding		The removal of Elexon and the University of Bath from Method 4 of the project has resulted in a reduction of external funding from £1,581k to £694k.



<p>9.2.5 Criterion (e)                  Relevance and                  Timing</p>	<p>SSE has included amendments to the Project Summary and Project Description, which explains why the Solent region is representative of GB as a whole. During discussions with the Expert Panel and Consultants, SSE gave an explanation in far greater detail and this was generally accepted that the variety of areas and customer profiles would be representative of much of GB.</p>
<p>9.2.6 Criterion (f)                  Methodology                  (a) <i>Methods and                  Cost Control</i></p>	<p>SSE has introduced a formal process for the collection of time and project costs thus proving greater assurance that costs will be efficiently managed.</p> <p><i>“During each trial a formalized process of recording the cost of the trial methodology will take place. Timesheets will be designed for all project staff (both SEPD and other project participants). These timesheets will be collated and reviewed on a monthly basis to ensure costs are not omitted. Each resource will be allocated a realistic market rate including overheads. All external costs such as engagement material will be recorded for each trial. At the end of each trial period, total trial costs will be calculated. Since the robustness of the network investment model is driven by the accuracy of the cost of approach, an internal review process will take place for each total costing to ensure no costs have been missed. The frequency of engagement will also be taken into account in this process ensuring the costs are valid for the length of demand reduction required.</i></p> <p><i>The SAVE project team will use the existing SEPD Future Networks Financial Management procedure WI-PS-FNP-010 to manage and reconcile costs from the individual trials costs.</i></p> <p><i>Each trial participant will be monitored for energy consumption. The monitoring process enables the project to judge whether a trial has had an impact on energy consumption. A control group will be established for comparison. The demographic characteristics of each participant will be recorded. Within each trial group a representative number of demographic groups will be present. This enables the constructing of representative substation demographics, leading to a calculation of energy consumption reduction for each method for different substations.</i></p> <p><i>The calculation of relative cost effectiveness of each trial methodology is a simple division of the cost of the trial recorded in the manner described above and the total kW and kWh consumption reduction observed from the methodology. This will feed in to the network model and enable control engineers to select the most cost-effective methodology for a given network area. Please see Appendix R for more details on the structured methodology.”</i></p>

<p>(b) <i>Customer Engagement</i></p>		<p><i>“Therefore we will aim to recruit up to 1000 properties for each intervention group (including the control), with the recruitment rate being part of the trial itself- understanding uptake rates is an important stage in measuring impacts. The sample sizes are the ideal, yet if the numbers do not reach the desired levels it will simply mean that it may be harder to determine small changes in behaviour.</i></p> <p><i>If the number of recruited properties is significantly lower than this, we will move away from using the approach where each intervention sample is kept strictly separate, and instead look to use a factorial design which combines interventions for some groups to allow us to determine effects whilst using a smaller sample size.”</i></p>
<p>9.2.7 Successful Delivery Reward Criteria (SDRC)</p>		<p>A number of enhancements have been made to the SDRC including item 2 - Create Customer Model by the inclusion of <i>“Host a demonstration of finalised customer model and produce final report”</i> by June 2018; and item 3 – Improve Customer Engagement <i>“Hold open days supported by online/paper information to share progress, experiences and next steps with customers involved in trials on a six monthly basis”</i> and the production of a report in January 2017.</p> <p>Item 6 – aims to install 80% of the optical sensors and smart meters in recruited premises by June 2015.</p>