

Leonardo Costa
Electricity System Operator Incentives
Wholesale Markets
Ofgem
9 Millbank
London
SW1P 3GE

Duncan Burt
Head of Commercial Operations

duncan.burt@nationalgrid.com
Direct tel +44 (0) 1189 936 3131
www.nationalgrid.com

25 November 2014

Dear Leonardo,

We welcome the opportunity to respond to the consultation on **Electricity System Operator 2015/17: Initial Proposals** that was published on 28 October 2014. We have addressed our response to the specific questions posed by Ofgem, which broadly reflects our initial view to Ofgem's **Electricity System Operator Incentives: Incentives from 2015** consultation to which we responded on 15 July.

In summary, we support the continuation of existing frameworks that support the suite of System Operator Incentives. As recognised by Ofgem in the initial proposals, the operational challenges faced by the System Operator in the coming years are numerous, as the electricity transmission system transitions to a new operational paradigm. We believe that the existing frameworks ensure a strong focus is maintained on driving down balancing costs through continuous improvement and innovation, both in the design and provision of balancing services or assisting industry stakeholders, through transparency and information provision. The remainder of this letter addresses the specific questions raised in the initial proposals document.

Chapter: One

Q1. Do you agree with the changes we are recommending for the SO incentives?

We broadly agree with the proposal to retain the current suite of incentives as we agree with Ofgem's view that they have led to savings for consumers¹. We also agree that it is a prudent approach to retain the established frameworks as a means of ensuring that an appropriate and well understood incentive structure is placed on the SO whilst due consideration is given to the potential impact of the market and regulatory changes identified in Ofgem's June consultation.

We do have concerns in respect to the proposed scheme parameters associated with the renewable generation incentive. We recognise that we have performed well under the current scheme and therefore would agree that it is appropriate to tighten the performance metrics. However, we believe the metrics described in the proposal do not reflect the appropriate balance in respect to the subsequent risk/reward profile under a linear model. We provide our rationale and a counter proposal in our response to the questions in Chapter 5; Q's 1, 2 & 3.

¹ Chapter 1 paragraph 1.5

Q2. Do you agree with how we have reflected these changes on licence conditions?

We agree that maintaining the existing approach in defining the incentives against financial or reputational measures is correct. We believe that maintaining the current sharing factors is appropriate for the BSIS scheme in the current framework, although we believe the cap and collar level should be adjusted to reflect RPI. As indicated in our answer to the previous question, we have some concerns in respect to the changes proposed on the wind generation incentive, which we provide further detail on in our response to the Chapter 5 questions. We fully recognise the additional value that improved transparency to stakeholders can provide and agree that the transmission losses incentive and modelling development licence condition remain reputational. As noted in our response to the June 2014 consultation the SO has limited influence on transmission losses as these are functions of market dispatch and longer term asset investment. However we recognise that it is important to inform market participants of existing and longer term trends in regards to transmission losses and explain to customers the underlying reasons for them and what mitigation may be pursued. In respect to the modelling development incentive, we support the aims of the incentive which is to provide foresight to stakeholders in respect to how changes in the operational and market environment may impact on current and future balancing costs.

Chapter: Two**Q1. Do you agree with our proposal to maintain the BSIS incentives without alteration?**

As we highlighted in our response in OFGEM's consultation in June 2014, we believe that significant strides have been made in ensuring that the models derive robust and credible targets against which SO performance can be measured. In respect to the 25% sharing factors, we agree that they do not match the equivalent sharing factor under RIIO-T1 incentives (46.89%) however we think that they provide an appropriate balance between risk and reward given the current operating environment that NGET is managing. However, we do think that the cap and collar of £25m should be increased by RPI. The current cap and collar levels have essentially been in place since 2011² and so the relative value has been diluted. The fixed cap and collar has effectively shrunk the range of potential profit and loss over the course of 4 years. We believe introducing RPI to the cap and collar has a long term effect on the range, whilst the impact over the course of a two year scheme is relatively small.

In respect to the Black Start proposal, we believe that any target should reflect the challenges that NGET is experiencing in this area, that result from a number of externalities which are impacting on both the cost and indeed the propensity of potential providers to contract. These external influencing factors include the introduction of the capacity mechanism, an outcome of EMR. This has the potential to impact in a number of ways including in terms of the value of contract to those black start capable assets as well as the term or duration of any potential contract. In addition a number of potential service providers have assets that are now at a point in their life cycle where decisions have to be made to invest or retire the asset.

Black Start costs will also be impacted by the availability of income streams from the provision of other ancillary services or market opportunities. The type of generation asset that has traditionally provided black start capability has historically had a number of revenue opportunities that they can pursue to ensure their cost base is covered. However increased

² The 2011-13 scheme was a two year target with a £50m cap and collar.

competition in some of these other market opportunities, such as STOR, has witnessed a significant increase in competition, further diluting the value that can be derived from an asset through these means. This has impacted on Black Start contracts, either within the terms of the contract or indeed the complexity, where NGET and potential providers have sought additional value or benefit opportunities.

We believe that the impact of this significant uncertainty should be accounted for in any target figure for Black Start, or through the extension of existing uncertainty mechanisms such as those currently applied to capital contributions towards new providers.

Q2. Do you agree with our focus on making sure the modelling avoids the SO from hitting the cap or floor?

It is important that the modelling provides a realistic and robust representation of costs that would be incurred in balancing the system within a “business as usual” context and this is currently captured through the input variables into both the energy and constraint models. The focus and principle of the incentive scheme should be to recognise and reward any costs savings, for example through contracting strategies, or indeed, penalise where additional costs have been incurred, for example as a result of outage overruns. We do not believe that there would be any merit in focusing on ensuring that the modelling avoids hitting the cap or collar, as the intent of the model is to provide a representative and accurate benchmark which is independent of the scheme parameters. We believe that the focus should be in ensuring that the input variables into the model reflect an appropriate balance which capture those element that can be considered “business as usual”, whilst ensuring that the new initiatives that are introduced or have been in a development phase are recognised as outperformance. As we suggest in our previous answer, we believe a means of reducing the chance of hitting the caps and collars would be to adjust the £25m by inflation.

Chapter: Three

Q1. Do you agree with our proposal to maintain the existing framework for the validation, governance and development of the SO’s BSIS target modelling and not to introduce any new formal incentives in this area?

We believe the existing validation, governance and model correction frameworks have worked effectively under the current scheme. We believe that the processes that have operated to validate the models have provided the required level of confidence that they provide a true and representative reflection of system costs. Both NGET and OFGEM have raised issues that have subsequently been corrected under the modelling governance procedures. This has helped to ensure the model outputs reflect both their intent and the actual costs of operating the system in an ever increasingly complex operational environment. We note the comment in the consultation document that OFGEM’s own validation from the internal monitoring³ has demonstrated that modelled costs do reflect actual costs.

³ **Electricity System Operator incentives 2015-17: Initial Proposals.** Para 3.13 This paragraph explains that OFGEM ran the models with ex-post inputs and found that model costs accurately tracked actual costs incurred

We would recommend that an additional process is introduced into the framework that would instigate a formal close out of scheme at the end of a financial or discrete incentive year⁴. This would provide certainty to all stakeholders in respect to final BSUoS charges.

Q2. Do you agree with our intention to focus on the validation of the models' inputs and assumptions?

As noted in the previous question, the models have demonstrated that they provide an accurate representation of balancing. As with any model the inputs and assumptions are key to achieving a valid model output and we therefore agree that it would be right to focus on the validation of inputs. However it is important that any validation process is consistent in the approach across all of the input variables.

Q3. Do you agree with the need for the SO to improve the transparency of the modelling? Do you have any particular thoughts about measures to facilitate this?

It is important that all stakeholders have confidence in the models and so we would support improving the transparency around them. Indeed NGET have previously held workshops to try and communicate some of the underlying assumptions and principles and performance of the models prior to the introduction of the 2013-15 scheme. However we recognise that more could be done and we will continue to work with stakeholders to understand how this is best communicated.

Chapter: Four

Q1. Do you agree with our proposal not to introduce any new formal incentives on the SO to increase the transparency of its actions?

As noted in our response to the previous question we recognise the importance of transparency and we already publish a significant amount of information. We are keen to listen to our stakeholders and understand their needs in respect to the type of information they would find useful. Indeed we have already issued a questionnaire and held a seminar workshop at a recent Operational Forum in response to some of the June 2014 consultation responses from stakeholders. This is a key area of focus for NGET and we agree with the OFGEM proposal not to introduce any formal incentives in this area.

Q2. Do you agree that in order to improve transparency, the SO should have a particular focus on improving the narrative contained alongside published information?

Please see response to Q1 above. We support the aim of improving transparency and will listen to stakeholders to understand where they would benefit from additional narrative. Currently, we try and communicate the operational context and reasons behind costs at the Operational Forum and through email contacts. We agree that additional narrative around our actions would be useful to stakeholders, however the detail, frequency and platform of the expanded narrative will have to be considered in context of the available resources to the SO.

⁴ This would not withstand any corrections that may subsequently arise, for example as a result of a resolution of settlement or contractual disputes. Provision is already made within the transmission licence for these types of event

Chapter: Five

Q1. Should we maintain the linear format to the incentive? If not, how should the incentive be structured?

Q2. Do you agree with the proposed incentive targets? If not, how should these be set?

Q3. Do you agree with the reallocation of the possible incentive revenue? How much do you value forecasting accuracy in winter compared to summer?

We have answered the three questions associated with Chapter 5 in the whole.

Whilst we recognise that the one of the aims of maintaining a linear format to the wind generation forecast incentive is for its simplicity, we do not believe that a linear model is the best means of structuring the wind generation forecast, particularly if it is retained in parallel to the proposed target error metrics.

There is a natural limit to how accurately wind power can be forecast. 0% forecast error over any period of time is impossible; and as performance approaches this, the effort required in doing so grows exponentially, notwithstanding any potential capital investments that may be needed to help achieve such an improvement in performance. However, the effect is asymmetric in that a linear scheme will always disproportionately penalise deterioration in performance in comparison to the reward for an equivalent improvement.

Whilst performance has been good under the existing scheme with revenue of £401,111 achieved, this was against a maximum possible of £3m profit (or loss). The improvement has continued into 2014-15, however it is important to recognise that this has been achieved through improvements in forecasting techniques and significant investment in IT infrastructure at the start of the current scheme. However as previously noted, the ability to improve at the rate suggested is improbable. Indeed, the significant improvements that we have made have delivered revenues at the lower end of the potential profit range under the existing incentive.

We do recognise that some tightening of the error parameters would be appropriate but this should not be in the order of magnitude proposed. We believe that a 0.25% reduction year on year would be a more proportionate level of tightening, taking account of performance improvements that have been achieved but recognising that future improvements will be more incremental.

The proposed tightening of the error parameters puts the scheme at greater risk of distortion due to control room actions; this is particularly the case in summer when there can be tight system constraints at times of high wind generation. Under the current scheme all wind generators are included in the error calculation, irrespective of whether the control room has taken actions to reduce output. This has a small, but significant effect on the incentive, that will increase as performance improves. We believe that where an action is taken the wind farm should be removed from error calculations for the duration of the instruction.

The proposal to reallocate more incentive revenue towards the winter months would introduce disproportionate risk into the winter periods. Whilst we understand the aim to try and incentivise the winter months as the performance is not as strong as that of the summer months, we do not believe that this would improve the existing incentive. Under the existing scheme, we aim to improve forecasting at all levels of wind output, but generally, wind

forecast error tends to deteriorate at higher output levels, which tend to occur during the winter. This is a natural result of more stormy weather and gusty winds which impact on wind output either through higher levels of cut out or the less predictability from a geographical context. Therefore, moving more value to the winter months would increase the likelihood of loss during these months. Together with the proposed tightening of error metrics this would introduce a disproportionate level of risk into the scheme as a whole.

Our proposal would be to introduce a logarithmic equation to produce a risk reward curve shown in figure 1.

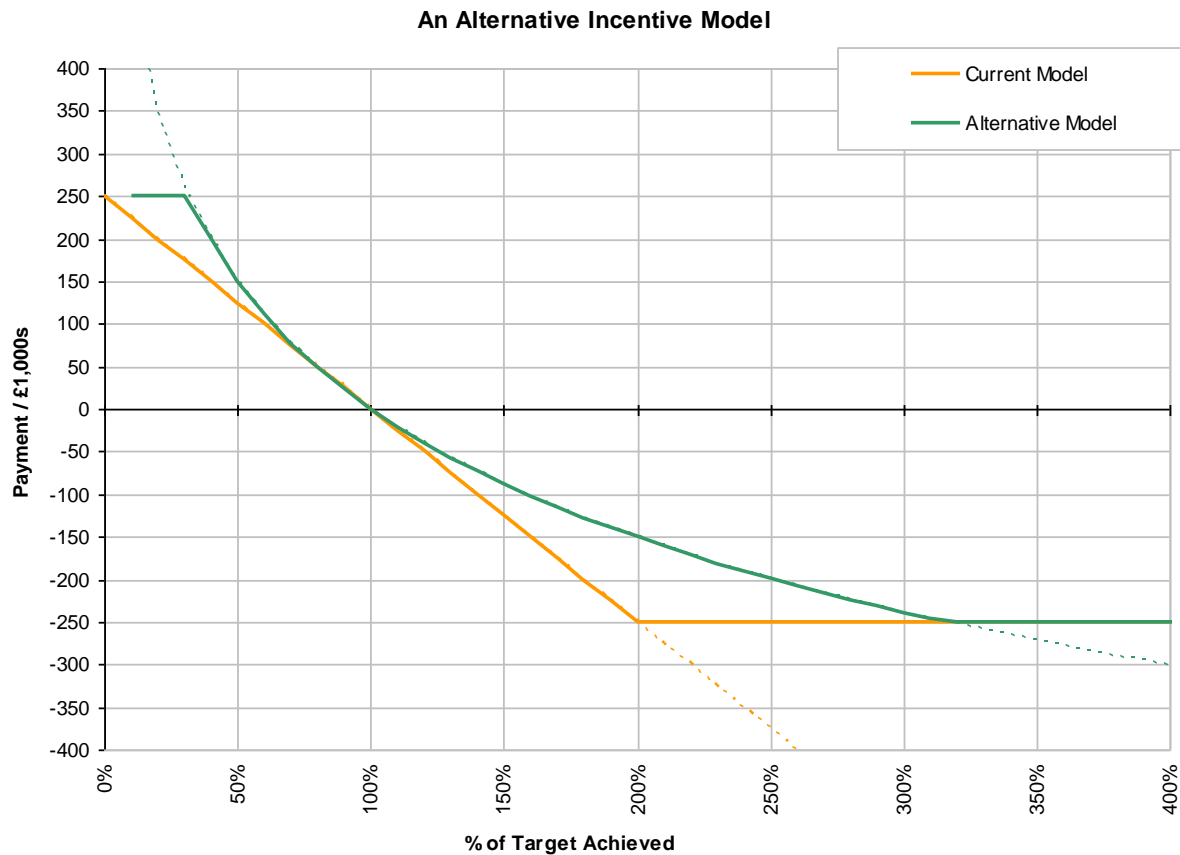


Figure 1 - an alternative wind forecasting incentive model

Using this alternative model, the level of reward is very similar to the current model. The crucial difference is that it penalises bad performance much more proportionately.

The equation for the alternative model above is:

$$\text{Payment} = -\text{slope} \times \log_{10}(\% \text{ of Target Achieved})$$

where $\text{slope} = 500,000$

As with the current model, payment is capped at -£250,000 and £250,000. If left uncapped, the model would tend to infinity at 0% forecast error, reflecting the impossibility of the scenario.

The *slope* parameter in the equation determines the steepness of the curve. In the above model it is set at 500,000; at this level a performance of 50% yields an equivalent reward to the penalty of a performance of 200%. This is an appropriate level since both are equally realistic prospects.

The following chart in figure 2, shows the impact the alternative model would have made if implemented for the 2013/14 and 2014/15 scheme. It plots the monthly payment based on the actual performance against target using both the current model and the alternative.

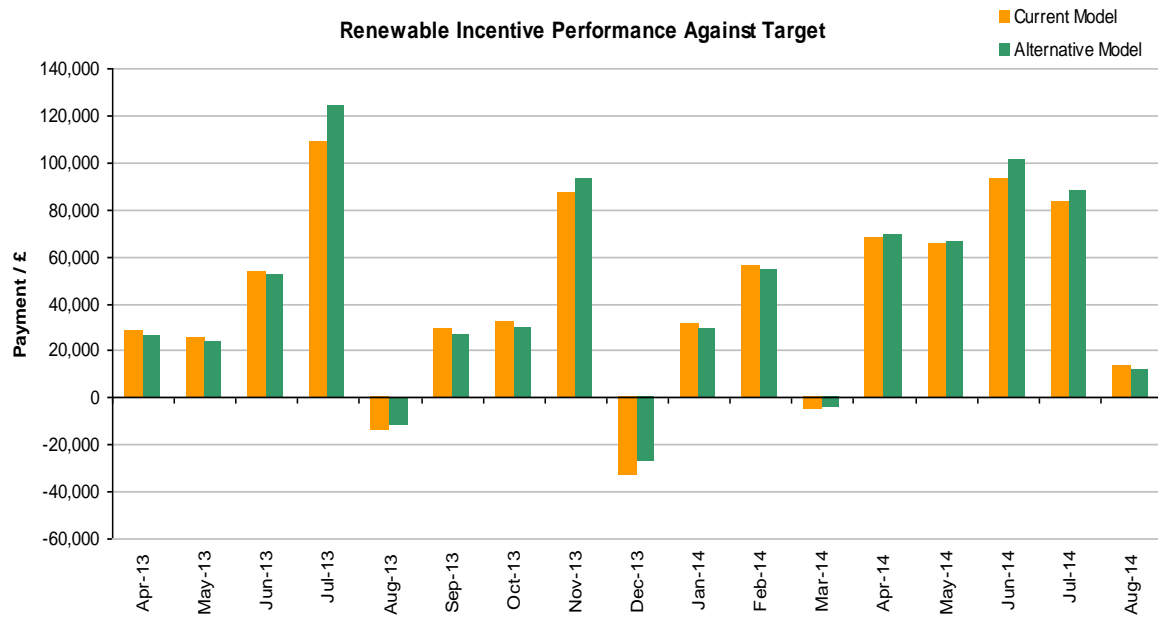


Figure 2 - an alternative wind forecasting incentive model

It is clear that across the period, the outcome for the two models is very similar. The similarity in outcome is because forecast performance was very good over the period and as such both models responded similarly. The chart below shows the impact when forecast performance is poor. This plots the same error data as above, but assessed against Ofgem's proposed targets for 2015/16 (3.25% for summer and 4.75% for winter).

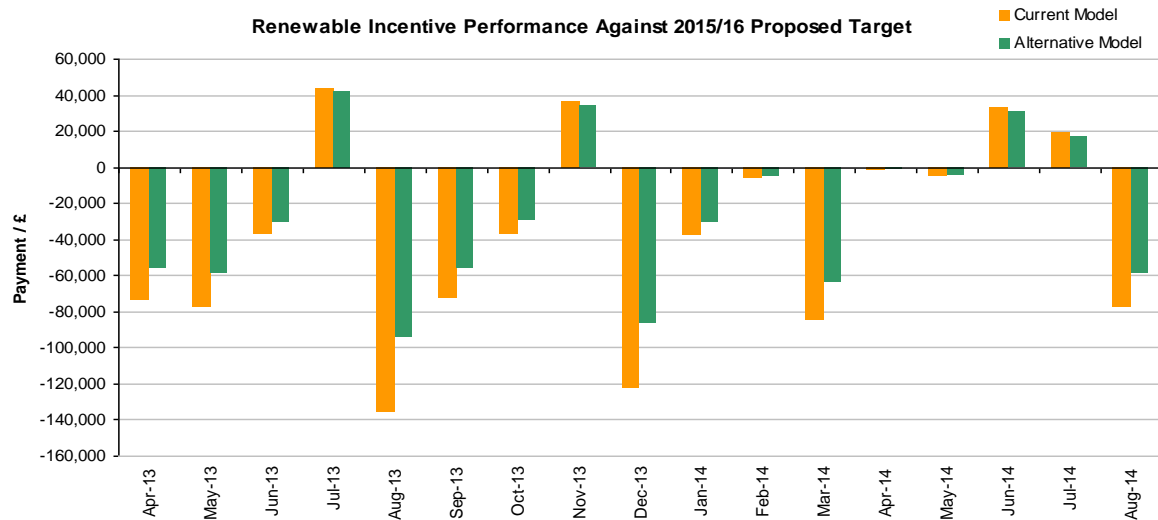


Figure 3 - an alternative wind forecasting incentive model

Here there is a significant difference. The overall cost for the current model is dominated by a small number of bad months which overshadow the rest of the year. This effect is inevitable as the linear model penalises failure much more than it rewards success. This is addressed with the logarithmic alternative, which still penalises the bad months, but the scale of the cost is in proportion to that of the better months.

Chapter: Six**Q1. Do you agree with our proposal to retain the Transmission Losses incentive as a reputational incentive and continue with the existing licence conditions?**

Yes, we would agree that a financial incentive that is linked to the volume of transmission losses is not appropriate, due to the minimal impact that SO can have on the overall level of losses. As noted in the consultation document, 60% of transmission losses are as a result of the market dispatch of generation assets and the distance travelled between generation and demand, with 40% due to losses on assets. With only ~ 3% of energy being managed in the BM and the fact action has to be taken in economic merit order (if balancing for energy) we believe a reputational incentive is the most appropriate.

Q2. Do you feel that the proposal to maintain the scheme as it is but make changes to the guidance document will improve the SO Innovation Roll-out mechanism?

We believe that more clarity in the guidance document would be beneficial especially in terms of the nature of projects that could be considered and more detail as to how the value to the consumer should be considered e.g. payback time. It is not possible to evaluate the potential impact of these until the guidance document is issued. The success of the IRM will be in part dependent on the nature of initiatives brought forward and a clear description of how any proposed initiatives should differ from the type of innovation that NGET already drives in the development of balancing services and creating frameworks that bring new services to market. Resources to manage and progress initiatives under the IRM will have to be balanced between these many streams of activity.

Q3. What is your opinion on allowing the SO to submit an SO-IRM application by 1st April 2015, at the earliest, with a commitment that the innovation must be fully implemented by 31st March 2017?

We would have no objection to being able to submit an SO-IRM application by 1st April 2015 but the likelihood of being able to construct an application to the required level of detail is unlikely. We believe the scope of innovation may be limited if it has to be fully implemented by 31st March 2017, however this in itself is not a problem providing the guidance document clearly states the proposed intent and outcomes from the IRM. It should be recognised that if 3rd parties are involved with any IRM proposal, particularly if any installation of assets etc is required to support the innovation then the time limit on full implementation may be restrictive on the nature of any application.

Q4. Do you agree with our proposal to de-link discussion on the benefit of introducing SO-TO incentives?

We do see some potential benefit in introducing financial incentives to aid the TO's in reducing operational costs over the medium term, where said operational costs are expected to be significant. However we would agree that this is complex area and further discussion on this should be de-linked for the next proposed incentive scheme and instead be considered in the context of ITPR or in the context of future incentive design beyond 2017.

If you would like to discuss this response further, in the first instance please contact Iain McIntosh (iain.mcintosh@nationalgrid.com or 0118 936 3798).

Yours sincerely

A handwritten signature in dark ink, appearing to read 'Duncan Burt', with a stylized flourish at the end.

[by e-mail]

Duncan Burt
Head of Commercial Operation