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Dear Mrs Geitona,

ERGEG consultation on treatment of losses

Scottish and Southern Energy plc (SSE) is a vertically integrated Energy Company based in Great Britain. It has interests in gas distribution and supply, electricity generation, transmission, distribution and supply and other non-energy interests such as telecoms, contracting and water. We operate predominantly in the GB and Irish markets but have wider European interests in electricity generation and supply. It is therefore important that losses are treated consistently and transparently across Europe.

This paper sets out SSE's view on the treatment of losses. In our response we have focussed particularly on what network owners can do to reduce losses rather than system operators. This is because in the longer term, network owners have a greater impact on technical losses through the purchase of low loss equipment and efficient network design. On the other hand system operators have to operate the system as it exists and should therefore be incentivised to minimise overall costs of system operation.

A – Definition of Losses

1. What is considered an acceptable definition of losses?

We agree that for comparability of losses, a common definition is required. This is easier at transmission level because the data of power flows onto and off the transmission network is more readily available. Also, the losses at transmission are [almost] entirely “technical” as, in our experience there are no unmetered supplies and theft is virtually non-existent because of the voltages involved. However, differing definitions of “transmission” could limit the comparability between Member States.

In any case we believe that at least there should be some standardisation of the definition. The volume of losses can be simply defined as the volume of electricity entering a system minus the volume of electricity leaving it. To ensure better targeted incentives, it might be best to define the volume of electricity leaving the system as the volume billed. This would ensure that unmetered supplies are accurately estimated. It would also ensure that “own

consumption” is either metered or estimated in the same way as other unmetered supplies so that the network company could manage this consumption.

In percentage terms, believe that the loss volume should be stated as a percentage of the input as a standard because, intuitively, it is a percentage of the production that is lost in transportation to final consumers.

2. Should power losses refer only to technical losses or is it acceptable to include also non technical losses?

For transmission, we believe the definition should be limited to technical losses.

For distribution, we believe that as far as possible, losses should exclude own consumption (i.e. the electricity consumed at electrical substations for on site supplies for heating and other purposes) and unmetered supplies. The consumption from unmetered supplies should be estimated from an inventory of unmetered installations together with operating times. Own consumption should ideally be metered so that it can be more efficiently procured and managed or, failing that, estimated in a similar way to unmetered supplies.

This would leave only technical losses, theft and data processing errors.

3. Which are the key components for defining losses?

We believe that in defining losses it is important to reflect the network that is actually in place rather than an idealised network.

B – Evaluation procedures

4. What ways exist to improve the evaluation of losses in distribution networks?

A degree of estimation is required at distribution level due to the mismatch between meter reading periods which can only be resolved in the long term by the roll-out of smart meters which would provide information in matching time frames.

However, the measures identified above for own consumption and unmetered supplies would improve evaluation of losses and their comparability.

C – Values

5. What should be a reasonable and acceptable level of power losses at the distribution level and the transmission level?

It is very difficult to set ex-ante “reasonable and acceptable” levels of losses. There are a number of factors involved such as

- The location of generation and demand in the area;
- Disposition of new generation;
- Operational security standards;
- Plant specification; and

- Age of equipment.

There should not therefore be an ex-ante level.

6. Which types of losses could be most easily reduced?

A number of technical solutions exist to reduce losses such as low loss materials for transformers and the use of DC transmission. Operational parameters are also important and higher levels of operational security tend to reduce losses due to the lower power flows. The proximity of generation and demand will also have an impact on losses as will responding to climate change since generation will locate to use low carbon energy sources.

D - Procurement

6. Who should be responsible for procuring electric energy to cover losses?

If the supplier is obliged (as UK arrangements) through Loss Adjustment Factors (LAFs) determined by network operator, there is no chance for the supplier to control the volume of energy required to cover losses, but does at least have some control over the time and hence network loading within its overall energy procurement plan. We therefore believe that the suppliers should be responsible for procuring losses.

If the network operator has to procure losses but can include the costs of procurement in its tariffs, then the supplier loses control of the costs as well as the volume.

If loss adjustment factors are to be applied to the output of generators, we believe that these should be applied in a stable, predictable, non-discriminatory way.

7. How should electric energy to cover losses be procured in a market-oriented way? Which solution is the most efficient?

As discussed above, procurement for the energy for losses should ideally be with the supplier. The supplier has an inherent incentive to minimise procurement costs and thereby network loading in order to offer the most competitive tariffs and maximise profits.

8. Should the costs of losses be covered by a special tariff?

No – see answer above

E – Regulatory Incentives

9. What are the advantages and disadvantages of the aforementioned incentive mechanisms?

Technical losses are difficult to reduce in the short term due to the long life of plant. Non-technical losses may be more amenable to reduction by increased attention to theft prevention and to the data acquisition procedures. For these reasons, both input and output incentive mechanisms should be utilised. It is also important that incentives are aligned, particularly in areas where competitive provision of network is permitted. For example in making a

competitive offering for a new connection, the tendency would be to choose the cheapest equipment available which may not be compatible with loss reduction. One option is to ensure that all infrastructure providers have the same obligations or incentives for loss reduction. A second option is to specify more stringent minimum standards for new electrical plant consistent with the best available loss reduction technologies.

10. Which key elements should be considered when assessing different regulatory incentive mechanisms?

Whatever incentive mechanism is considered, it should be simple and transparent to apply. It should also be set so that the network operator is able to influence the outcome – there is no point in exposing an operator to an incentive/penalty framework if the operator has no opportunity to act in such a way as to improve the outcome. Finally, it should take into account the overall economics, i.e. is it cheaper to continue to pay for losses rather than invest in new plant to reduce losses.

11. Are there advantages in setting separate mechanisms for technical and non-technical losses?

At distribution, it is very difficult to separate technical and non-technical losses (with the exception of unmetered and own consumption which can be estimated). An overall loss reduction incentive will ensure that loss reduction effort is targeted where there can be quick wins – possibly in the non-technical area of enhanced theft prevention or improved data collection and aggregation.

12. Are there advantages in setting separate mechanisms for transmission and distribution losses?

Yes, we believe there should be separate mechanisms for transmission and distribution because there are different drivers to losses in these two categories.

I hope this information is helpful and if you have any questions or need further information please give me a call.

Yours sincerely

David Densley
Head of European Affairs