ElectraNet

Your ref:
Our ref:

24 May 2017

Mr Evan Lutton
Assistant Director - Networks Branch
Australian Energy Regulator
GPO Box 520
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Dear Evan

re: Response – AER technical review of economic benchmarking models for transmission networks

ElectraNet appreciates the opportunity to engage in the AER's technical review of economic benchmarking models for transmission networks, based on the issues paper prepared by Economic Insights.

ElectraNet provides the following response to the issues paper in preparation for the workshop scheduled for Wednesday 31 May 2017. These comments address a number of threshold issues, followed by more specific comments on the specification of the current benchmarking model.

Threshold Issues

As noted in previous submissions, three main issues need to be considered in relation to transmission benchmarking:

1. There are limitations to benchmarking TNSPs in Australia due to the small sample size and the diversity between the transmission networks being compared. It is important that these limitations are highlighted through the course of the benchmarking review and in annual reporting in order to provide a balanced view of the use of the data, and ensure that differences are considered in interpreting the results. This diversity is increasing over time with ongoing structural changes in the sector, including the merger of distribution and transmission businesses, increasing the difficulty of meaningful comparisons across transmission networks.

2. As noted in the development of the initial transmission benchmarking report, there is no robust basis for determining that the model specification for multilateral total factor productivity (MTFP) developed by Economic Insights is the most appropriate. The adoption of alternative model specifications appears to lead to significant variations in measured MTFP and relative

rankings across the businesses. It is important that further testing and development occurs to provide greater confidence in the robustness of the model before any more widespread application would be possible in revenue determination processes.

3. The limitations of the measures themselves should be recognised, noting that it is not possible to draw firm conclusions about relative efficiency from the PPI benchmarks due to the exclusion of the range of external factors that impact on efficient transmission costs, and noting that the MTFP results reflect productivity changes rather than business efficiency.

ElectraNet welcomes further engagement on these issues to ensure that the development of the model and refinement of model inputs is fully informed, and that the benchmarking results can be meaningfully interpreted and applied.

Within this overall context, the following comments address key issues with respect to the current specification of the model and data applied.

Model specification

Opex Benchmarking

A key challenge in benchmarking operating expenditure performance through the Opex Partial Factor Productivity (PFP) Index is the difference in the nature of this expenditure across network businesses.

A prime example of this is the use of network support services (funded by opex) as an alternative to network augmentation (funded as capex). These are non-standard costs not present in many network businesses, but account for over 10% of annual operating expenditure in the case of ElectraNet for example. Failing to adjust for these payments significantly distorts benchmarking results.

Other differences are also apparent in the way capital and operating expenditure is allocated across networks. Whether an activity is considered operating or capital expenditure is largely determined by specific businesses' accounting and cost allocation framework.

For example, ElectraNet undertakes significant operational refurbishment activities (funded as opex) in order to maintain efficient asset operation and manage risk to acceptable levels. This prolongs asset life and defers capital replacement expenditure. For other TNSPs, the best solution may be to undertake capital replacement in similar circumstances.

This means there will not necessarily be a meaningful 'like for like' comparison between TNSPs as to the underlying efficiency of annual operating expenditure. On this basis, ElectraNet submits that network support and operational refurbishment activities should be removed or appropriately adjusted in the PFP measure.

Key Variables

As noted previously, it is apparent that, while meeting the definitions set out in the economic benchmarking RIN, TNSPs have reported data in relation to measures such as transformer capacity on a different basis (i.e. low side or high side voltage). For the purposes of the most recent Annual Benchmarking Report, the AER has chosen to use recast entry and exit connection point kV data reporting the low side / distribution voltage at each connection point rather than the high side / transmission voltage which ElectraNet reports in its annual economic benchmarking RIN response.

As the low side / distribution voltage is essentially arbitrary, being determined by local distribution network requirements, it does not provide a meaningful measure of transmission scale services, and bears no direct relation to the costs involved in the servicing a transmission connection point. For a TNSP the overwhelming majority of the equipment owned and maintained within each connection point will be at the high side / transmission voltage, which will determine the scale of the efficient costs involved. Therefore, reporting the high side / transmission voltage more reasonably reflects the costs related to servicing the connection point owned and maintained by the transmission business and should be applied in the measure.

It is also noted that energy throughput is not an appropriate output measure to be included in the weighted MTFP output calculation. The level of energy throughput across the network bears no relationship to the efficient costs incurred by the TNSP and has no impact on the level of effort required by a TNSP to maintain its assets. Throughput is unrelated to the service being provided by a transmission network, which is focused on ensuring adequate, secure and reliable levels of network capacity. Using energy throughput as an output measure therefore artificially distorts the relative performance of networks under the MTPF measure, and should be removed as an output of the model.

For completeness ElectraNet has also enclosed a more detailed response addressing the individual questions raised in the Economic Insights issues paper.

ElectraNet remains supportive of the general thrust of the AER's benchmarking analysis, and looks forward to working closely with the AER and Economic Insights to develop an improved measure for meaningful comparison of performance between TNSPs.

ElectraNet also continues to work with other TNSPs in consultation with Energy Networks Australia to assist in improving the economic benchmarking process by seeking, where possible, to harmonise TNSP interpretations of RIN reporting measures where annual responses are currently not aligned.

Should you wish to discuss any aspects of this response, please contact Andrew Gniel on (08) 8404 7219.

Yours sincerely

Simon Appleby
Senior Manager Regulation and Land Management

ATTACHMENT

Responses to individual questions raised in the Issues Paper

1. Would the use of downstream customer numbers be a better output measure than the current voltage weighted connections output variable?

   No. The number of downstream customers has no direct relationship to the transmission service being provided, or the efficient costs incurred by the TNSP. Maximum demand is the driver of efficient network investment.

   ElectraNet supports the use of high side / transmission voltage as a key output variable within the measure, as there is an expectation that more effort, and therefore cost, is required in providing a connection to a 275kV network than a 132kV network for example. It is not reasonable to assume that more effort is required to provide a 66kV connection versus a 33kV one if the high side voltage is the same.

2. Would the use of end–user customer numbers for the state the TNSP operates in be appropriate or would allowance need to be made for interconnectors and special situations such as the Snowy Mountains Scheme on end–user numbers?

   As above, the use of downstream customer numbers would not be a meaningful output measure. The level of maximum demand that must be served at individual connection points is the key driver of network costs, not the number of end customers that contribute to this total.

3. Would there also be a need to include a measure of entry points or would the end–user customer numbers measure be adequate?

   As above, customer numbers would not provide a very meaningful output measure. The number of connection points represents a more appropriate measure of efficient cost drivers, as explored below.

4. Would the simple addition of the number of entry and exit points be a viable output measure?

   Yes. This would be a valuable addition to the output measures, and could meaningfully replace the energy throughput measure which has no bearing on network efficiency.

   While the volume weighted connection point variable is a measure of the scale of connection capacity required, the number of connection points would be a good potential measure of the complexity of each network, if this can be meaningfully standardised.

5. If we retain the voltage weighted connections variable, is there a better approximation to the 'size' of connections than the current multiplicative variable?

   ElectraNet is supportive of the multiplicative method as a measure that is relatively simple and easy to understand.

6. Should the voltage weighted connections output variable use the voltage at the customer side or the TNSP side or entry and exit point transformers? Which measure would better reflect the service provided by TNSPs to customers?

   As noted above, the low side / distribution voltage transformer rating is essentially arbitrary, being determined by local distribution network requirements, does not provide a meaningful measure for transmission scale services, and bears no direct relation to the costs involved in the servicing a transmission connection point. For a TNSP the overwhelming majority of the equipment owned and maintained within each connection point will be at the high side / transmission voltage, which will determine the scale of the efficient costs involved. Therefore, use of the high side / transmission voltage more reasonably reflects the costs related to servicing the connection point owned and maintained by the transmission business and should be applied in the measure.

7. Is there a case for the treatment being consistent with AEMO's Marginal Loss Factor reports, which uses downstream voltage?

   No. As above, the use of the high side / transmission voltage more reasonably reflects the costs related to servicing the connection point owned and maintained by the transmission business and should be applied in the measure. This figure should also be verifiable from external sources.

8. In accounting for terminal stations that connect to multiple DNSPs:
   (a) Should connections to multiple DNSPs at the one terminal station be counted separately or as one connection?
   (b) How would counting the connections separately or as one connection advantage or disadvantage particular TNSPs?

   This situation does not apply across all networks, such as the South Australian transmission network, so the impact of any adjustments or specific treatment and the materiality of these costs should be carefully considered to avoid any unintended distortions in measuring relative efficiency across networks.

9. Should the weight placed on the TNSP reliability output be reduced to avoid volatile movements in MTFP?

   The unserved energy measures at a transmission level are inherently unstable and heavily biased against less meshed networks with long radial lines. Unserved energy alone is not normalised to system scale at all. System minutes is unserved energy normalised to ratchetted demand but not topology. A reduction in the weight applied to this output measure should therefore be considered.

   More broadly, the outputs of a mature and established benchmarking model should be robust to alternative model specifications and weightings attached to model variables. This reinforces the need for further testing and development of the model before greater reliance can be placed on its outputs.

10. If so, should a cap be placed on the weight itself or on the volume of unserved energy incorporated in the model?

    Yes, a cap should be considered for both. The data used in these measures should also align with the adjusted data applied by the AER in its annual STPIS performance reporting. This

ensures that consistent measures of network performance are being applied in the performance incentives being applied to the businesses and transmission benchmarking measures being used as an indicator of network efficiency.

11. The value of the reliability output relative to total TNSP revenue exceeded 5% in only 7 of our current 50 observations. Of these all were less than 8.5% except AusNet in 2009 which equalled 29%. If we were to cap this weight, what should the size of the cap be?

    As above, alignment with adjusted data applied in annual STPIS performance measures should assist in addressing outliers.

12. Should a cap be made to be consistent with the current TNSP STPIS, which applies a cap on the impact of unplanned outages? If so, how would this be applied to the reliability output measures for benchmarking purposes?

    The event frequency parameters are improvements on the unserved energy and system minutes but are not normalised for topology. The different thresholds were intended to reflect the differing return periods for events of a minor or major nature however this has been lost with time. They are useful for trending of each TNSP versus time but for any given threshold one would expect to see more in a network with radial components versus one which is more deeply meshed. Alignment with STPIS performance data should be considered as above.

13. Would using a rolling average of unserved energy be an alternative way of handling annual volatility in reliability?

    While this would reduce the volatility it does not address the failure to normalise the unserved energy for network topology and demand.

14. Do the current output cost share weights of 21.4 per cent for energy, 22.1 per cent for ratcheted maximum demand, 27.8 per cent for weighted entry and exit connections and 28.7 per cent for circuit length seem reasonable?

    Energy throughput is not an appropriate output measure to be included in the weighted MTFP output calculation. The level of energy throughput across the network bears no relationship to the efficient costs incurred by the TNSP and has no bearing on the level of effort required by a TNSP to maintain its assets. Throughput is unrelated to the service being provided by a transmission network, which is focused on ensuring adequate, secure and reliable levels of network capacity. Using energy throughput as an output measure therefore artificially distorts the relative performance of networks under the MTPF measure, and should be removed from the model.

    As above, the number of connection points would be a more useful addition to the model outputs as a measure of the complexity of each network.

    In terms of specific weightings, as noted above, the model outputs should be robust to alternative model specifications and weightings attached to model variables, reinforcing the need for further testing and development of the model before greater reliance can be placed on its outputs.

15. Should the output cost shares be updated to take account of the latest information?

    While the information should be reviewed periodically and tested and updated as required in the interest of developing and improving the robustness of the model over time, a level of stability is also required to ensure meaningful efficiency comparisons and incentives over time.

16. Does the current separate inclusion of output capacity variables and the MVAkms based input specification introduce any biases?

    ElectraNet does not have any specific comments on the materiality of this.

17. Is there an objective basis on which to divide a category of very high voltage lines from other lower voltage transmission lines (noting that productivity indexes require non–zero quantities and values for all input categories for all TNSPs)?

    Cost and effort generally scale up reasonably consistently by voltage. 100kV is generally a widely accepted differentiation between distribution and transmission that might be considered.

18. Can TNSP asset values be reliably and accurately split and provided on a similar basis?

    Yes, but this will not match with connection point voltage as currently this is based on low side/ distribution voltage. This reinforces the need to adopt a transmission side voltage measure as a consistent standard that is more representative of actual transmission costs.