

Attachment C12: Benchmarking background

1 Introduction

This attachment is to be read in conjunction with Chapter 3 of ActewAGL Distribution's revised regulatory proposal.

The AER has placed a heavy reliance on benchmarking to inform ActewAGL Distribution's opex allowance. ActewAGL Distribution considers that such a heavy reliance on benchmarking is inappropriate as it fails to recognise the historical context of benchmarking in Australia with respect to the perspectives of the Australian Energy Market Commission (AEMC), the Productivity Commission (PC), the Australian Competition and Consumer Commission (ACCC) and Australian Energy Regulator (AER).

2 Benchmarking background

The use of benchmarking has been discussed over recent years including by the AEMC, the PC and the ACCC/AER. This section provides a discussion of some the key issues identified by these organisations as part of their investigations. The purpose of this attachment is to provide additional background and context regarding the expectation and intentions behind the use of benchmarking which are in contrast with how the AER has applied benchmarking in its draft decision.

2.1 AEMC consideration

The AEMC considered benchmarking as part of two processes. The first was in relation to a review of total factor productivity in response to a rule change request from the Victorian Minister for Energy and Resources. The second was a rule change request in relation to the Economic Regulation of Network Service Providers. Each of these are discussed below.

2.1.1 AEMC TFP rule change and review

In 2011 the AEMC considered the use of a total factor productivity (TFP) methodology, an economic benchmarking technique, to be applied by the AER in approving or amending price of revenue determinations for DNSPs. The AEMC examined the use of TFP in considering a rule change request by the Victorian Minister for Energy and Resources. Following from rule change submissions the AEMC undertook a review of TFP.

As part of the supporting review, the AEMC found that:

A TFP-based methodology for the determination of prices and revenues would require robust and consistent data from service providers to be available. The data needs to be consistent both over time (so that variations in TFP reflect actual performance changes rather than changes in data coverage or definitions) and across service providers (so that comparable activities are being covered). In its Draft Report the AEMC found that existing data are not currently consistent, reliable nor robust. Therefore, the first requirement for implementing a TFP methodology is the creation of Regulatory Disclosure Data that are consistent and robust and which can support an appropriately specified TFP calculation.

An important feature for the Regulatory Disclosure Data is that the data be consistent with the detailed definitions set out in the Guidelines developed by the Working Group(s). The AER may also, in consultation with service providers, supplement the Regulatory Disclosure Data by backcasting to earlier years (i.e., to the period before the start of the Regulatory Disclosure Data) provided any backcasted data can be proven to be consistent with the definitions laid out in the AER's Regulatory Disclosure Data Guidelines. We are of the view that at least 8 years of robust

and consistent data will be required to establish a TFP growth rate that could be used in a TFP methodology for price and revenue determinations.¹

The final AEMC rule change decided against the adoption of TFP and stated:²

The Commission has decided not to make a draft rule in response to the rule change request. This is because the Commission has taken the view that the necessary conditions for applying a TFP methodology are not present at the current time. In particular, a sufficiently robust and consistent data-set to support TFP does not yet exist. This underlying data is critical to assessing the merits of adopting a TFP methodology, and is also needed to determine if other pre-conditions for a TFP methodology have been met.

The Commission considers that a more appropriate way to approach the introduction of a TFP methodology would be as proposed in the final TFP report, that is, by starting with the gathering of data.

The AEMC also identified a major risk with the use of TFP measures as a way of determining regulatory allowances. The AEMC identified that the reliance on benchmarking information increases the risk of either under or over setting allowed revenues³

The "...potential disadvantage of the TFP approach is that setting the businesses' allowed revenues based upon an external benchmark instead of using business specific data, the risk is increased of businesses either not being able to recover their efficient costs or making excess returns."

This disadvantage applies to all benchmarking approaches where specific consideration of individual businesses circumstances are not sufficiently taken into account.

The AEMC proposed that the AER establish a Regulatory Disclosure Data Working Group to develop detailed guidelines and templates for reporting, recognising that different cost allocation methods may lead to cost data being supplied that is not sufficiently consistent for

¹ See Attachment C15, AEMC, 2011, *Final Report: Review into the use of total factor productivity for the determination of prices and revenues*, June, page 23

² See Attachment C77, AEMC, 2011, *Rule Determination, National Electricity Amendment (Total Factor Productivity for Distribution Network Regulation) Rule 2011*, December, page i

³ See Attachment C43, AEMC, 2008, *Review into the use of Total Factor Productivity for the determinations of prices and revenues, Framework and Issues Paper*, December, page 38

TFP, benchmarking or other analytical purposes and that eight years of robust data would be required.⁴

Accordingly the AEMC proposed a two stage process. First, network service providers would be required to provide data and the AER would test if conditions necessary for a TFP methodology are met and undertake initial paper trials of the calculations. Secondly, detailed design of the TFP methodology and making of the Rule would occur once both the necessary conditions can be, or are likely to be met, and it is considered that introducing a TFP methodology would contribute to the national electricity objectives.⁵

The AER agreed with the AEMC noting that:

*“...a robust and consistent dataset for applying a TFP methodology to pricing determinations do not yet exist.” The AER also supported the AEMC’s proposed two stage implementation approach, with the initial focus on facilitating data collection and assessing whether the necessary conditions for introducing TFP have been met.*⁶

The AER has not established the working group in the form proposed by the AEMC.

2.1.2 AEMC Rule change: Economic Regulation of Network Service Providers

In 2012 the AEMC then undertook a rule change in relation to the Economic Regulation of Network Service Providers. The rule change included a focus on the use of benchmarking and included that:⁷

The AER will be required to publish annual benchmarking reports, setting out the relative efficiencies of NSPs based on the information available to it.

With respect to the role of benchmarking and the need to take into account individual circumstances, the AEMC stated that it:⁸

⁴ See Attachment C15, AEMC, 2011, *Final Report: Review into the use of total factor productivity for the determination of prices and revenues*, June, page 19

⁵ See Attachment C15, AEMC, 2011, *Final Report: Review into the use of total factor productivity for the determination of prices and revenues*, June, page ii

⁶ See Attachment C78, AER, 2011, *Submission on the Draft Rule determination for total factor productivity for distribution network regulation*, October

⁷ See Attachment C5, AEMC, 2012, *Rule Determination, National Electricity Amendment (Economic Regulation of Network Service Providers) Rule 2012*, November, page vii

... considers that benchmarking is a critical exercise in assessing the efficiency of a NSP and approving its capital expenditure and operating expenditure allowances. Benchmarking should take into account differences in the environments of the different NSPs, being those factors that are outside the control of the NSP.

Importantly, the AEMC recognised that benchmarking is used in combination with NSPs detailed regulatory proposal:⁹

Benchmarking is but one tool the AER can utilise to assess NSPs' proposals. It is not a substitute for the role of the NSP's proposal. ... It [the rule change and the ability to use benchmarking] assists the AER to determine if a NSP's proposal reflects the prudent and efficient costs of meeting the objectives. That necessarily requires a consideration of the NSP's circumstances as detailed in its regulatory proposal.

The AEMC also identified the range of factors that it expects the AER to consider in its use of benchmarking:¹⁰

The final rule gives the AER discretion as to how and when it undertakes benchmarking in its decision-making. However, when undertaking a benchmarking exercise, circumstances exogenous to a NSP should generally be taken into account, and endogenous circumstances should generally not be considered. In respect of each NSP, the AER must exercise its judgement as to the circumstances which should or should not be included. However exogenous factors to be taken into account are likely to include:

- *geographic factors: topography and climate;*
- *customer factors: density of the customer base (urban v rural), load profile, mix of customers between industrial and domestic;*
- *network factors: age, mix of underground and overhead lines, though this will depend on the extent to which this is at the election of the NSP; and*
- *jurisdictional factors: reliability and service standards.*

⁸ See Attachment C5, AEMC, 2012, *Rule Determination, National Electricity Amendment (Economic Regulation of Network Service Providers) Rule 2012*, November, page viii

⁹ See Attachment C5, AEMC, 2012, *Rule Determination, National Electricity Amendment (Economic Regulation of Network Service Providers) Rule 2012*, November, page 107

¹⁰ See Attachment C5, AEMC, 2012, *Rule Determination, National Electricity Amendment (Economic Regulation of Network Service Providers) Rule 2012*, November, page 113

If there are some exogenous factors that the AER has difficulty taking adequate account of when undertaking benchmarking, then the use to which it puts the results and the weight it attaches the results can reflect the confidence it has in the robustness of its analysis. (page 113)

The AEMC in determining the rules for the economic regulation of network service providers did not intend for benchmarking to be used to mechanically determine operating expenditure allowances.

The AEMC further clarified the intention of the use of benchmarking:¹¹

The intention of a benchmarking assessment is not to normalise for every possible difference in networks. Rather, benchmarking provides a high level overview taking into account certain exogenous factors. It is then used as a comparative tool to inform assessments about the relative overall efficiency of proposed expenditure.

The AEMC in explicitly identifying that the intention of benchmarking is not to account for every possible difference in networks (and as a corollary their unique costs) indicates that benchmarking is neither intended to deterministically set operating expenditure nor is capable of appropriately setting an operating expenditure allowance that achieves the operating expenditure objectives. Moreover, the use of “inform assessments” implies that benchmarking is to be used as support in conducting an assessment rather than the primary assessment.

The AEMC’s consideration shows that the AER’s assessment process of using benchmarking to first determine a substitute operating expenditure allowance then compare it with ActewAGL Distribution’s revealed costs is both inconsistent with the intention of the Rules and incompatible with the requirement for the AER to determine an operating expenditure forecast that reflects the efficient costs of achieving the operating expenditure objectives.

2.2 Productivity Commission Consideration

In April 2013 The Productivity Commission found that “...benchmarking is not yet sufficiently reliable and robust to directly set regulated revenue allowances.” as part of its inquiry into Electricity Network Regulatory Frameworks.¹²

The Productivity Commission’s particular concern was that

¹¹ See Attachment C5, AEMC, 2012, *Rule Determination, National Electricity Amendment (Economic Regulation of Network Service Providers) Rule 2012*, November, page 108

¹² See Attachment C17, Australian Government Productivity Commission, 2013, *Electricity Network Regulatory Frameworks: Electricity Network Regulatory Frameworks: Productivity Commission Inquiry Report Volume 1*, April, page 29

... it is difficult to distinguish between inefficiency and errors arising from model misspecification, poor data, different regulatory settings and varying operating environments.

Such difficulties are less severe if the purpose of benchmarking is to identify broad efficiency concerns about network businesses. However, in setting regulatory allowances, badly configured benchmarks could lead to under-remuneration of businesses, with risks for efficient investments and business solvency. ¹³

The PC identified that in the immediate future, benchmarking is likely to be most useful:¹⁴

- *As a diagnostic tool to help assess the reasonableness of bottom-up detailed proposals*
- *...*
- *in providing information to consumers and others, thereby providing pressure for improved performance by network businesses*

The PC also identified a range of difficulties with the use of benchmarking. These included that:¹⁵

- *there are many different methods for estimating 'efficient' costs*
- *Incentive regulations require a reward for the vigorous (and risky) pursuit of cost efficiency*
- *Quality must not be overlooked*
- *Different reporting systems produce measurement errors*
- *Any comparisons between businesses must take into account differences in their operational circumstances (such as topography, customer density, and differences between jurisdictions about which assets lie within transmission or distribution networks) and policy constraints (such as higher or differently defined reliability standards or statutory requirements for non-commercial goals for state-owned corporations)*

¹³ See Attachment C17, Australian Government Productivity Commission, 2013, *Electricity Network Regulatory Frameworks: Electricity Network Regulatory Frameworks: Productivity Commission Inquiry Report Volume 1*, April, page 29

¹⁴ See Attachment C17, Australian Government Productivity Commission, 2013, *Electricity Network Regulatory Frameworks: Electricity Network Regulatory Frameworks: Productivity Commission Inquiry Report Volume 1*, April, page 29

¹⁵ See Attachment C17, Australian Government Productivity Commission, 2013, *Electricity Network Regulatory Frameworks: Electricity Network Regulatory Frameworks: Productivity Commission Inquiry Report Volume 1*, April, page 30

2.3 ACCC and AER Regulatory Development Branch

An ACCC and AER working paper, which was reviewed by Professor Tim Coelli, an author of the Economic Insight's benchmarking¹⁶, found that stakeholders and regulators appear to be more confident with the use of cost benchmarking in circumstances where:

- *there was extensive consultation with industry and the views of industry were incorporated into the benchmarking regime where reasonable argument was provided. For example, the Ofgem's application of benchmarking to electricity distribution included an extensive consultation process over a number of years.*
- *benchmarking was used as a routine part of the regulatory process to inform the regulatory decisions. That is where benchmarking was used to adjust the business's forecast costs up and down, rather than including the numerical outputs from benchmarking directly into the determination of efficient costs or X factors. Examples of this approach undertaken by the regulators include the gas and electricity distribution sub-sectors in the United States, the United Kingdom and Ireland.*
- *there are a large number of comparable businesses in the sample. Regulators have generally placed less weight on the results from benchmarking studies where there is a small sample size. For example, Ireland has only two gas networks and the United Kingdom has eight networks owned by four companies. Because of the limited sample size available, benchmarking analyses of gas distribution networks in the United Kingdom (and Ireland, if applicable) have been used in combination with bottom-up assessments of specific activities to inform the regulators' determinations of efficient costs. In contrast, of the European countries reviewed by WIK-Consult (2011), Germany and Austria have heavily relied on benchmarking results in their respective regulatory decisions for gas distribution.*
- *multiple benchmarking techniques are used and considered. To account for the different results that may arise using different methods, Finland and Germany combined the results from the SFA and DEA methods, Austria combined results of DEA and Modified Ordinary Least Squares (MOLS) and the Ontario regulator combined the results of econometric and unit-cost models. Finally, the Ofgem in the United Kingdom compared*

¹⁶ See Attachment C10, ACCC/AER, 2012, *Benchmarking Opex and Capex in Energy Networks Working Paper no. 6*, May, page 2

the ranking of electricity distribution networks derived from OLS and DEA methods to test the sensitivity of the results.¹⁷

2.4 Summary

Each of these organisations have identified similar issues with the use of benchmarking in relation to the need to develop reliable data sets, the need to consider benchmarking as one component along with detailed investigation of network service providers operations and the importance of treating any benchmarking outcomes with caution.

Of particular interest are the conclusions of the ACCC and AER Regulatory Development Branch. Despite the identification of a series of what can be considered best practice pre-conditions required before the implementation of benchmarking, the AER has adopted benchmarking without these been met, namely:

- There has not been extensive consultation with industry on the econometric model adopted; and
- Benchmarking has not been used routinely as part of the regulatory process; and
- There are not a large number of comparable businesses; and
- Multiple benchmarking techniques have not been considered.

¹⁷ See Attachment C10, ACCC/AER, 2012, *Benchmarking Opex and Capex in Energy Networks Working Paper no. 6*, May, page 13 and 14