Review into the use of total factor productivity for the determination of prices and revenues

Workshop on the design discussion paper – electricity sector

Monday, 28 September 2009
10:15 am – 4:00 pm (registration from 10:00 am)
Rydges World Square Sydney

Contents

Agenda
Workshop on the design discussion paper – electricity sector

Time	Agenda item	Speaker
10:00 am – 10:15 am	*Registration and coffee/tea*	
10:15 am – 10:25 am	Presentation on status of the TFP Review and role of the TFP design discussion paper	Anne Pearson, Senior Director, AEMC
10:25 am – 10:45 am	Presentation on key issues from the TFP design discussion paper	Meredith Mayes, Senior Advisor, AEMC
10:45 am – 12:15 pm	Discussion session 1: • How to apply a TFP methodology, including the role for the AER • How should the industry be defined to calculate the TFP index • What methodology to use to determine P_0	All attendees
12:15 pm – 12:45 pm	*Lunch*	
12.45 pm – 1:05 pm	Presentation on sunk costs, asset valuation and productivity based regulation	Dr. Denis Lawrence, Economic Insights
1:05 pm – 1:20 pm	Q&A on sunk costs, asset valuation and productivity based regulation	All attendees
1:20 pm – 2:50 pm	Discussion session 2: • How should TFP index be calculated • What terms should comprise the price path • What should be the degree of flexibility in the TFP design	All attendees
2.50 pm – 3.00 pm	*Coffee/tea*	
3:00 pm – 3:20 pm	Presentation on the approach to assess TFP	Eamonn Corrigan, Director, AEMC
3:20 pm – 4.00 pm	Open discussion on merits of a TFP approach and any other relevant matters	All attendees

TFP design example

Design discussion paper version – August 2009

These are the various elements of the TFP strawman example as presented in the TFP design discussion paper released by the AEMC on 28 August 2009. Background information and supporting reasoning and explanation behind these design elements are provided in the paper. As a general principle, the same design would be used for the electricity revenue determinations and gas access arrangements.

1. Applying a TFP methodology

- A high level of prescription on the TFP methodology would be included in the NER and NGR. All the TFP principles, key mechanics (such as formulas, calculations and definitions), key rights and obligations and procedural requirements would be clearly and comprehensively established in the NER and NGR.

- In addition, the regulator would produce a set of non-binding TFP guidelines covering two aspects of the methodology:

    (a) technical matters on which the regulator would have discretion as a complement to the Rules; and

    (b) matters that the service provider could adapt to its circumstances, subject to the regulator's approval.

- The initial selection of a TFP methodology and its continued application beyond the first regulatory control period would be a decision for the service provider. No approval of the regulator would be required.

- Once the service provider selects the TFP methodology for its regulatory determination, the same timetable and processes currently applicable for the building block approach would apply. The only change would be that for electricity, the regulator would have to prepare a framework and approach paper covering the possibility of a service provider using either a TFP methodology or a building block approach.

- The decision to revert back to using the building block approach after a regulatory period using the TFP methodology would lie with the service provider. No approval by the regulator would be required. The timetable and processes currently set out in the NER or NGR would apply.

- The principles and mechanisms of the TFP methodology would be locked in for a particular service provider and would remain unchanged for the entire regulatory period.

2. Calculating the TFP growth rate

- Only an index number approach would be permitted for calculating TFP. The regulator would chose the index number method it considers appropriate, provided the method chosen satisfies the important technical requirement of being 'superlative' (that is, it can provide a close approximation to an arbitrary smooth function).

- The specification for calculating the TFP growth rate (that is, inputs, outputs and weightings) would be prescribed in the NER and NGR. However, at this stage further analysis and consultation is needed to determine the correct specification.

- For defining the industry group, two options for further discussion are presented:

    (a) there would be one single TFP growth rate factor that would be applied to any service provider within the respective sector. This would be based on the average TFP growth rate for all regulated service providers in that sector; or

    (b) the industry would be divided into subsets according to operating conditions. There would be four sub-groups:

        (i) urban, high density

        (ii) urban, low density

        (iii) rural, high density

        (iv) rural, low density

- In both options, all service providers operating in the sector would be required to provide TFP data, even if they have not elected to use the TFP methodology themselves. For gas, all covered pipelines would be included (even if the covered pipeline is subject to light regulation).

- The regulator would only be permitted to remove a service provider from the calculation under exceptional circumstances such as if there are serious gaps or problems with the data provided by that service provider.

- Inclusion of data on any businesses which is outside the jurisdiction of the NEL or NGL (for example, overseas businesses) would not be permitted.

- The regulator would be required to use audited historical data as provided by the service providers. It would only be permitted to make adjustments to the data to:

    - adjust for structural differences to improve the consistency of the data (for example, for different classifications of services); or

    - to adjust certain years data for certain service providers because of exceptional circumstances.

- Any adjustments would be made transparent and done in accordance with the guidelines. The data-set used would be available to all service providers to allow them to undertake their own modelling (subject to any confidentiality issues). Normalising the data for operating environment differences would not be permitted.

- The regulator would have the option to decide whether to use an average annual growth rate approach or a regression–based trend method in calculating the TFP growth rate.

- The regulator would be required to use the longest time period that is possible provided that the available data is robust. It would also need to be consistent with a minimum time series of eight years of data being required before a TFP methodology could be applied to revenue determinations.

- If the service provider is subject to a rolling X under the TFP methodology then the inputs and output weights would be updated on an annual basis as well.

3. Setting the initial cap

- The method to set the initial price or revenue cap at the start of the regulatory period would be a partial building block approach where the regulator:

    - determines the level of operational and capital expenditure for that year based upon an reasonable assessment of actual costs incurred in the current period;

    - calculates the regulatory asset base in accordance with the existing roll forward methodology;

    - estimates the efficient rate of return for the duration of the new regulatory period in accordance with the existing methodology; and

    - estimates the efficient tax for the initial year in accordance with the existing methodology.

- This method would be used regardless of whether under the current regulatory period the service provider is using the building block approach or a TFP methodology. It would be applied both to electricity and gas distribution service providers.

4. Additional design terms

- Longer regulatory periods are consistent with a TFP methodology and would be available to service providers. This is consistent with the current provisions of the NER and NGR which provide service providers with the ability to propose an extended regulatory period under the building block approach. That is, for electricity service providers, a regulatory control period would be at least five years. For gas service providers, an access arrangement period could be of any length. Service providers and regulators would have the same level of discretion as currently exists.

- A cost pass through mechanism would be available for service providers to include in their revenue or access arrangement proposals at their discretion. The regulator would then respond to the proposed mechanism within the decision making process.

- A service provider could include a capital module in its proposed revenue or access arrangement to recover actual efficient, extraordinary significant increases in capital expenditure during a regulatory period. The regulator would need to be satisfied that the expenditure is outside the scope of the cost drivers that are taken into account in setting the X. Discussions with stakeholders would be needed to determine the most appropriate design of this module.

- Off ramps would be available under a TFP methodology. An off ramp mechanism would:
    - be proposed by the service provider or required by the regulator;
    - clearly specify the 'off ramp event' at the start of the regulatory period. This could be an specified event or a rate of return or revenue band (for example, that the actual rate of return varies by more than 20 per cent of allowed rate of return);
    - require an 'off ramp event' to be significant; and
    - require that the need and specification of an off ramp mechanism be assessed for each forthcoming regulatory period
- Service providers would propose the form of X (that is, either a fixed or rolling X) for the duration of the forthcoming regulatory period. In making its proposal, a service provider should take into account the length of the forthcoming regulatory period, and the use of off-ramps and cost pass through mechanisms.
- The service provider can propose any combination of the all design elements for the regulator's approval (similar to the current arrangements). The regulator's assessment on the proposed package would have regard to the NEO or NGO and the revenue and pricing principles.
- An efficiency carryover mechanism should be excluded from operating in conjunction with a TFP based methodology as it is not consistent with that methodology.
- Any efficiency carryover mechanism existing at the commencement of a TFP regulatory period should continue to run its course as initially planned.
- The existing demand management and service incentive schemes would continue to be available to service providers under a TFP methodology. There should be no difference in their operation that reflects a service provider's use of either a building block approach or a TFP methodology to the determination of revenues and prices.

5. Price path under a TFP methodology

- The allowed rate of change of the price cap under the TFP methodology would be calculated in accordance with the following formula:

$$\Delta \text{ allowed prices for regulated business} = \Delta \text{ consumer prices} - \{[\Delta \text{ industry TFP} - \Delta \text{economy TFP}] - [\Delta \text{ industry input prices} - \Delta \text{ economy input prices}]\}$$

- A separate measure for industry input prices growth would be included into the determination of the X factor, and prescribed in the Rules. Further work and consultation with the industry would be required to determine the most appropriate measure. The producer price index would be used for the economy input price growth term.
- An additional term would be included in the formula for determining the X factor to permit the regulator to make business specific adjustments. Such adjustments would only be justified if the regulator considers that the industry TFP growth rate should be adapted

to reflect a significant difference in the productivity growth potential of that specified service provider. The regulator's decision must be consistent with the respective national objective and the revenue and pricing principles. The adjustment can either be positive or negative.

Further analysis would be needed to develop the appropriate framework, including the potential use of benchmarking techniques, governing this decision.

Issues for discussion

The following issues will be discussed in more detail during the workshop:

1. How to apply a TFP methodology, including the role for the AER
2. How should the industry be defined to calculate the TFP index
3. What methodology to use to determine P_0
4. How should TFP index be calculated
5. What terms should comprise the price path
6. What should be the degree of flexibility in the TFP design