20 October 2016

COAG Energy Council Secretariat
GPO Box 9839
Canberra ACT 2601

Lodged via energycouncil@environment.gov.au

Thursday, 20 October 2016

Dear Secretariat,

RE: Review of the Regulatory Investment Test for Transmission

ENGIE appreciates the opportunity to comment on the Regulatory Investment Test Transmission (RIT-T) consultation paper.

ENGIE is a global energy operator in the businesses of electricity, natural gas and energy services. ENGIE is the number one independent power producer in the world with 115.3 GW of installed power-production capacity, 19 GW of which is renewable. ENGIE employs 1,800 people in Australia and supplies 12 per cent of Australia's National Electricity Market, and has an installed generating capacity of more than 3,550 MW. ENGIE also owns Simply Energy which provides electricity and gas to more than 550,000 retail customer accounts across Victoria, South Australia, New South Wales and Queensland.

The RIT-T, and its regulatory predecessor, was designed for an environment that is quite different to today. There are many new challenges to be addressed and an effective allocation of risks is critically important to market efficiency. A contrast is made between the earlier assumptions for the national Electricity Market (NEM) and current developments to position a number of key recommendations for changes to the RIT-T arrangement.

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The NEM design was based on a relatively fixed set of assumptions

- Electricity demand was met by large generators distant from load centres.
- Demand was growing and was expected to continue to grow into the future.
- New entrants were expected to be conventional gas or coal fired plant.
- Large quantities of intermittent generation weren't contemplated.
- Transmission and distribution provision was a recognised monopoly service, needing regulation to co-exist with the NEM market based arrangement.
- Transmission augmentation was justified from a consumer benefits perspective (since they paid for transmission). Generators paid for shallow connections to the network and consequently didn't have any firm transmission rights under the so called "open access regime".

It should be noted that a "more predictable environment" was quite forgiving to over investment in transmission as the capacity was likely to be used eventually as demand grew. Hence, it can be argued the risk of inefficiency of building too early amounted to the "time value of money".

Current developments make for a more uncertain future

- Demand growth is flat or decreasing.
- Large and increasing volume of distributed renewable generation (mostly intermittent) is entering the market.
- Large uncertainty surrounding climate change policy makes investment decisions difficult and risky.
    - This is compounded by unilateral actions by states to increase renewable generation beyond the existing RET.
    - Climate change policies are in a state of flux and will not be "locked in" for the duration of a transmission project (say 20+ years).
- There is steady exit of fossil plant due to the reduced demand for dispatchable generation, low electricity prices and uncertainty of environmental policies.
- Technological developments in solar PV and battery technology make these options more economically attractive and contribute to increased penetration.
- RIT-T process is severely challenged by vastly different possible futures which are not currently captured by AEMO NTNDP scenarios.
- Range of ancillary services provided by thermal plant is diminishing over time.
    - Some services required for system stability, provided by conventional plant, such as inertia and load following, are already difficult to manage in some regions (as is evident by the recent SA blackout).
- Changing requirements from networks (transmission and distribution) due to changing customer behaviours and choices.

- Fault level currents are becoming an issue as large generators exit the mix.

⇒ More uncertain decision environment

The original regulation of transmission was replaced by the RIT-T rule change implemented in July 2009. At this time some of the intermittent generation had entered the market, but the technological and cost advances in renewables and storage technology were yet to come. Distributed generation has grown beyond even the most optimistic levels and has challenged the large centralised generation and transmission models.

In addition, since the RIT-T was introduced, uncertainty around climate change policies has increased, not decreased as expected.

A combination of these developments has made the future far less certain and made accurate long range planning extremely challenging.

⇒ Customer benefits are uncertain

In this environment it is far from clear that large interconnectors, if built, will be sufficiently utilised over their asset life.

In the event that generators locate to benefit from the underutilised transmission, they effectively receive a subsidy from customers by gaining access to “free transmission”. For example, renewable generators could locate in a higher wind/solar yield region and receive “free transmission” to maximise their returns. This represents a value transfer from customers to generators. This makes even more uncertain that interconnectors will deliver sufficient customer benefits to underwrite their high capital costs.

The long lead-time of large transmission augmentations means that the claimed benefits under a RIT-T may no longer exist by the time the interconnector is constructed, yet customers remain committed to funding these projects over their asset life. Under the current regulatory model, risks of underutilised transmission, and cost of economic value transferred to generators by providing “free transmission”, is passed onto consumers.

Given the recent views of the growing role of decentralised generation, customers acting as prosumers, and move away from large generation, it could be argued the RIT-T should be more not less stringent.

Given the level of uncertainty, the RIT-T in its current form may no longer be sufficient to avoid inefficient investment in transmission.

⇒ No level playing field

Transmission projects compete with generation projects, yet the investment drivers and risk allocation profiles between the two are entirely different. Generators face a wide range of risks including market, technology, economy, fuel and environmental policy uncertainty. In contrast to this, transmission projects remain completely shielded from such risks.

When assessed on an economic resource cost basis, it is usually more efficient to build additional generation either side of an interconnector instead of funding a major upgrade of an interconnector when similar levels of WACC are used (in least cost expansion studies).

The asymmetry of risks affects the cost of capital, and can bias solutions towards transmission projects.

⇒ Only certainty is that customers will pay

Customers already face substantial increases in electricity costs and affordability will be further negatively impacted by such a wealth transfer.

It is arguable that the existing RIT-T model is no longer effective and a substantial redesign is called for.

Summary of the issues with the current RIT-T arrangements

- Benefits are only justified once up front, hence the over reliance on the RIT-T to screen economic efficiency once and for all.
    - Costs are locked in for a long time but the delivery benefits are not .
    - Transmission projects tend to be expensive and have long asset lives in the order of 20-40 years.
    - Assessment will only be as good as the ability to forecast the long term future, which is all but impossible.
- The current regulatory arrangement shields transmission projects from all risks (except for operational and maintenance).
- Consumers wear the risk of inefficient planning decisions and construction of uneconomic assets.
- The value of some generation projects can be enhanced by receiving transmission for free at the expense of customers.
- Transmission projects compete with generation projects, but don't compete on a level playing field. Specifically transmission is shielded from most risks and has a regulated rate of return, whilst generation and other competing options are exposed to a wide range of risks. These projects will typically require a higher WACC making the projects more costly (they cannot pass their risks onto customers).
- The range of scenarios used in the RIT-T process doesn't capture the full range of future uncertainty
    - Some scenarios are simple sensitivities around a central theme instead of distinctly different internally consistent scenarios.
- The RIT-T allows for catastrophic events but because these are averaged over the scenarios there may not be an economic case to undertake an augmentation project. However governments and business may not be prepared to accept such eventualities (as they may lose office or their business). In this case there could be a third leg of the RIT-T introduced dealing with payments for "insurance" type augmentations.

The need for scenario planning

The use of effective scenarios in the RIT-T process is imperative to deal with the range of uncertainties in the future. The AEMO developed scenarios for the NTNDP tend to be used in the RIT-T process, but there is no obligation to use these by the TNSPs.

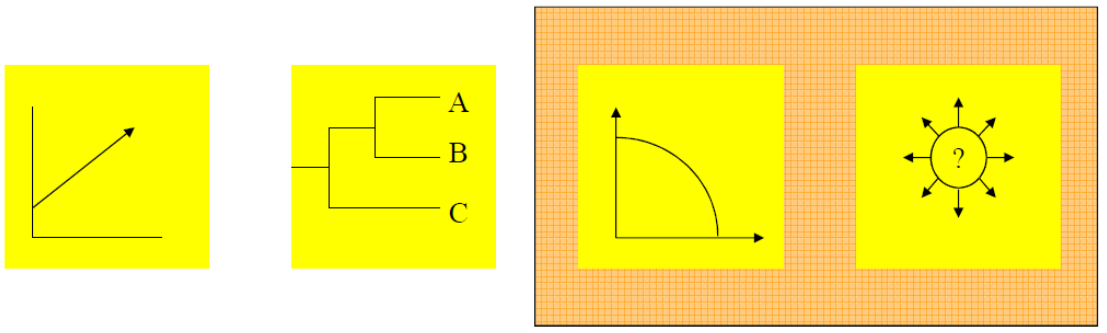
The process for developing scenarios by AEMO has varied over time, but remains over simplistic and more suited to a reasonably certain future, rather than a range of "stretching" futures or high level of ambiguity. The current

approach of using neutral, weak and strong scenarios is suited to a highly predictable environment and amounts to a single view of the future with a couple of sensitivities (uncertainty levels 1 and 2 in the diagram below).

To deal with higher levels of uncertainty, different techniques are needed, and scenario planning as pioneered by Shell is considered more appropriate. The scenario planning process is a planning technique that produces a set of scenarios with a special set of properties. Whilst the technique provides a holistic approach to assessing strategic options, its scenario development attribute is advocated here.

The technique uses a rigorous process to identify key uncertainties and provides a framework for building them into an internally consistent scenario cut set.

The following shows shaded areas where scenario planning is useful and appropriate when there is a large uncertainty, such as a range of futures or true ambiguity (ie uncertainty levels 3 and 4).



(Ref 20/20 Foresight, Hugh Courtney, McKinsey & Co)

A new arrangement is needed to deal with the changed environment

The key elements of a modified regulatory arrangement for transmission are as follows:

- The arrangement needs to efficiently meet customer needs in the longer term by more effectively dealing with an increasingly uncertain future.
- Once in operation, the project must be more responsive to changing circumstances and sheet some of the risks back to the transmission project instead of the consumer.
- Simplify the RIT-T process / more appropriate risk sharing.
    - Transmission projects should be relied on for “insurance” against some events only in the near future which is reasonably clear (and not in the medium to longer term which is increasingly uncertain).
- The guaranteed transmission cost recovery from customers should not cover the full cost of the transmission.

- One possible way of calculating customer funded payments can utilise the scenario modelling under RIT-T and calculate a base payment on the lowest value of benefits determined in any of the scenarios. This would essentially form a “riskless investment” and as such attract low level of WACC.
- The remainder of a project cost would be subject to market conditions and have a much higher level of WACC as the revenue is at risk and would not be funded by the customers. Instead, these payments could come from other beneficiaries of the transmission project, or third parties such as governments if they wanted the project to proceed for other reasons (externalities to the market and of little customer benefit).

- Ideally, payment to transmission should be based on actual provision of services/benefits. This would be a dynamic process rather than “historical view of the future”. It may also include some generators as they gain benefits from the augmented interconnection (eg intermittent renewables).

Options going forward:

- Replace the RIT-T with a more efficient mechanism.
  - Place a moratorium on large projects until a more appropriate revenue model is developed (Payment for actual services delivered).
  - Develop a service delivery based revenue model for transmission where transmission only receives revenue for services delivered to the market.
  - Once such an arrangement is implemented, there would be no need for the RIT-T as projects could:
    - Retain the risks.
    - Contract with participants benefiting from the project to manage their risks.
    - Combination of mechanisms.
- Retain the existing RIT-T and address some of the deficiencies.
  - Reduce the quantum of risk / cost underwritten by consumers.
    - Encourage lower cost projects with short lead times (Essentially a “no regrets” approach).
    - Reduce the amount of costs allowed or benefits sought.
      - Restrict the timeframe over which network benefits are claimed (eg 5-7 years). This will bias the projects towards near term benefits where the near future is more certain.
      - OR - Discount the benefits over time to allow for the increasing uncertainty over time. (eg the benefits maybe discounted to zero in 20 years’ time).

    - Introduce a third leg (reliability and market benefits being the existing two) to the RIT-T dealing with insurance against “catastrophic events” (low probability, high consequence).
        - The cost should be recovered from the beneficiaries, which could include governments and would be recovered on regional basis.
- Weaken and simplify the RIT-T and introduce a periodic network cost optimisation reset.
    - Another approach would be to simplify the RIT-T by reducing the scope of benefits assessment; only cover the near term (eg 5 years) where there is low uncertainty and then conduct a periodic network optimisation assessment and only allow cost recovery for optimised network assets (This would require changes to other sections of the market rules, namely Chapter 6A Economic Regulation of Transmission Services).
        - Once identified, the stranded costs could be recovered from beneficiaries (if any) and could include generators.
        - If beneficiaries aren’t identified, then the cost should be preferably stranded, otherwise it should be recovered from energy region(s) hosting the interconnector.
    - Augment the current RIT-T process to utilise an independent party to assess the project benefits from a customer perspective and continue with the AERs in an oversight role.
- The process for developing scenarios used in the RIT-T assessment should be prescribed. The process of developing scenarios should be based on proven techniques such as the scenario planning process AEMO should be tasked with facilitating the scenario planning process and engaging an industry reference group (this happens now but the scenario planning process is not prescribed).
- The process for developing the NTNDP should include market modelling as well as the existing cost based modelling to ensure dispatch pattern variations are captured. Cost based modelling is simple but produces dispatch and congestion patterns that are quite different to the real market outcomes.

ENGIE trusts that the comments provided in this response are of assistance to the COAG Energy Council Secretariat in its deliberations. Should you wish to discuss any aspects of this submission, please do not hesitate to contact me on, telephone, 03 5135 5363.

Yours sincerely,

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