

AEMC staff paper
SRG meeting - 28 May 2012
Session 1: DSP and Profit Incentives for Distribution Network
Businesses

Purpose

This paper provides background information to session 1 of the SRG meeting on 28 May regarding profit incentives. The purpose of the SRG discussion is to consider:

- Extent of the problem relating to network profit incentives for DSP, and
- The suite of potential options that are being considered.

The purpose of which is to aid SRG members understanding of the topic in preparation for the meeting.

1 Where are we at – issues with current arrangements?

The objective of the review is to identify the market and regulatory arrangements that ensure efficient demand side options are properly considered and correctly valued in both the planning and operation of the NEM. We define efficient DSP as an action by consumers (either independently or via an intermediary) to manage or reduce their electricity consumption which delivers a net benefit on the wider market (i.e. lower costs of supply) which is more than the loss in value incurred to the consumer.

The optimal use of resources from a market viewpoint will occur when the lowest cost combination of DSP and traditional supply options is used to meet total demand. This will occur when the all the opportunities for efficient DSP are captured.

The AEMC Directions Paper identified a number of issues with the current network regulation arrangements for DNSPs that dis-incentivise the network business from pursuing efficient DSP projects. We also released a supplementary paper (DSP and profit incentives for distribution network business, 23 March 2012) which sets out rationale in detail.

We identified that there are multiple, inter-dependent reasons to the current potential disincentive.

1. There is a bias towards capital expenditure in favour of operating expenditure, because:
 - a. incentive power is stronger for capex
 - b. more guarantee recovery of capex
 - c. prospect of additional profits on capex via outperforming the approved WACC
2. There is some uncertainty about how the AER may treat operating expenditure on DSP options at the next reset (i.e., if the business has initiated an opex DSP project during the regulatory period, there is a risk that the AER may disallow that expenditure going forward into the next period). We note that under clause 6A.6.6 is there certainty for TNSPs expenditure on Network Support Agreements. No similar clause exists for distribution.
3. There is a potential mis-alignment between the businesses profit and the efficient choice between network and DSP projects due to how the arrangements treat the respective costs of those projects. The relationship between volumes – costs –profits is more complicated for a regulated network business than a competitive business given how costs are treated under the

network regulation framework (i.e., more costs for a network business does not necessarily lead to lower profits).

4. There are characteristics of DSP capital projects - such as shorter asset lives and increased uncertainty about future costs - which may limit a network business' appetite to seek the approval for such expenditure given the current regulatory determination arrangements. The question here is should "DSP-type expenditure" be treated differently (although the high incentive power for capital assets which have short asset lives is not a specific DSP issue).
5. There is limited allowance/ability for the DNSP to pass through additional (efficient) costs during the regulatory period. For example:
 - a. Business got approval for a capex project at the start of the period but then does a RIT-D during the period which identifies a more efficient DSP project. However that DSP project has a higher annual cost than the capex allowance in that period. The business has no resource to amend its prices to fund the difference in that regulatory period.
 - b. The actual costs of some DSP options based upon dynamic pricing can be quite volatile (as it will depend upon the volume and magnitude of system peaks). It may be too difficult to accurately forecast these costs over the five years.
6. It is not clear to what exactly the AER has the ability (or expertise) to consider the wider market benefits associated with DSP projects (e.g., lower spot market volatility) and provide additional allowance. The capex/opex criteria do not refer to "market benefits" in the same language as the RIT-D.
7. Under current tariffs, price cap businesses will lose profit if volumes decrease. This is because a percentage of fixed costs are being recovered via the variable charge.

The Directions Paper noted that "safeguard threat" of AER replacing a network investment with a DSP option in the businesses approved expenditure may not be totally effective. AER has argued that this is due to how the Rules are written and the level of discretion permitted to them (even in the circumstances, where they consider the DSP option is more efficient). In practice, we believe that is more likely to do with the difficulty the AER would face with coming up with a credible estimate of a DSP project (which delivers the same reliability) independently of the network business.

We also note that the Demand Incentive Management Scheme may not be the answer. If the underlying profit motivation towards DSP projects is not there, the increase in the size of the DMIA may need to be substantial to offset the underlying disincentive. It is recognised that the current DMIS is not a "true" incentive scheme which allows extra reward but an innovation allowance plus potentially an allowance for foregone revenue associated with certain DSP projects.

2 Assessing the potential reform options

This is not one "problem" but a series of problems – hence any solution is likely to be complicated and needs to address all the issues.

The issues cut across the four main areas of chapter six of the National Electricity Rules:

- How forecast expenditure is treated at the start of the regulatory period and also how out-turn expenditure is treated at the end of the regulatory period (and included into the following period revenue allowance)
- The framework for how the AER makes decisions on efficient expenditure
- How network prices are set
- How network prices can be adjusted through the regulated period.

Questions for discussion:

1. What is the materiality of the issues identified with in the Directions Paper? Do they act as a significant barrier to DNSPs doing DSP?
2. The current rule changes on network regulation are looking at changing the capital expenditure incentive framework. How would this affect the issues regarding opex-capex bias?
3. Should some of these options also applied to transmission?

3 Options being considered

3.1 Balance of incentives between operational and capital expenditure

A1: Capitalisation of all DSP related expenditure (i.e. treat any DSP opex as capex)

This would be achieved through adding a new Rule:

“All expenditure relating to capital, either capital assets or expenditure which delays or defers the need for such capital asset must be treated the same in respect to power of the incentive and how such costs are treated at the regulatory resets”

Issues to consider:

- How capitalisation would affect accounting and audits practice?
- Will it create extra cash-flow risk for business? Need to increase working capital allowance?
- Will it lead to higher costs to consumers (as a proportion of opex now attracts a return on capital)?

A2: OFGEM totex approach – which equalises the incentives across all expenditures

Under this option, the regulator does not distinguish between opex and capex for the purpose of calculating required revenue. Instead the regulator assigns a simple rule of 85% of expenditure to be recouped from depreciation and a WACC allowance (which is refer to as “slow money”) and then assigns a deemed average asset life of 20 years to this 85%. The remaining 15% is recovered on an annual pass through basis.

We note that these are arbitrary rules which may not reflect nature of expenditure. Also if the volume of DSP projects influences the regulator’s decision on the percentages when it could affect the incentive for the network business to do DSP.

3.2 Clarifying the treatment of DSP expenditure

B1: Treatment of market benefits associated with DSP projects

DSP projects can have wider market benefits beside avoided network costs. Also it can be difficult to justify DSP purely on the basis of avoided network costs.

It is unclear at the moment whether the AER can approve an expenditure allowance which includes projects which deliver system reliability and operational benefits which lie outside the network. The expenditure criteria in chapter 6 of the rules only relate to network performance, network reliability and meeting local network demand. Some DSP projects can deliver wider market benefits but which cost more than the network option but which have a greater net benefit to the market.

Option is to add a new Rule:

“The operational and capital expenditure criteria (in clauses 6.5.6 and 6.5.7 of the Rules) to be expanded to include reference to market benefits (as defined in Regulatory Investment Test for Distribution (RIT-D))”

This would clarify the business ability to seek extra funding for DSP projects which deliver wider market benefits. This allowance should be additive – in the sense that there must be an underlying network issue being addressed. It is probably not appropriate for the business to recover expenditure for projects which only deliver system benefits (i.e. a peaking generator).

B2: Pass-through of DSP costs during regulatory period

Address disincentive in current arrangements where a DSP project has higher annual costs (probably due to high upfront set up costs) than the annual capex allowance for the deferred capital project (which is spread constant over the life of the asset).

Option is to add a new Rule:

“In the event where the business has done a RIT-D during a regulatory period which identifies a DSP project which is estimated to deliver a higher net market benefit but has a higher annual cost than the approved capital project, the business can automatically adjust prices in the next pricing period to account for the cost difference.”

Without this clause the business would have to take the loss until the next regulatory period if it decided to do DSP instead of the approved capex project.

Also we note that price based DSP projects (i.e. Critical Peak Pricing) could have a high degree of cost volatility, because they are based upon the number of peak events. Hence it could be very difficult for the business to forecast the magnitude and materiality of peaks over the five years (and also for the regulator to approve).

Option is to facilitate a “true-up” annual reconciliation provision which allows networks to adjust prices for out-turn cost differences for approved projects.

B3: Treatment of (unforeseen) DSP costs at the next regulatory reset

Current arrangements could be discouraging DNSPs from funding long term operating expenditure DSP projects – which saddled multiple regulatory resets - through their capital expenditure allowances if they are unclear how the AER will treat such expenditure in future regulatory determinations.

Option is to add a new Rule:

“AER must approved the remaining costs of an applicable DSP project as allowed operating expenditure for duration of that project”

Similar provisions current exists for Transmission for network support agreements (see clause 6A.6.6).

3.3 Additional risks of DSP projects compared to normal capital expenditure

DSP projects may be risky than normal capital expenditure project both in terms of actual costs (as technology is new and market for DSP projects is immature) and impacts on network performance and network reliability. Also DSP capex cost tends to have a shorter asset life. This has the impact of magnifying the strength of the expenditure incentive

Option is to allow the network business to seek a temporary exemption to dampen the power of incentive for capitalised DSP projects in the event of a substantial, unique investment in DSP related technology. AER could approve such an exemption if it considers that the specific nature of that investment and the degree of extra risk and uncertainty are sufficient to justify a departure from normal practice.

The exemption could be limited to removing the treatment of depreciation from the capital expenditure scheme or could give flexibility for the business and the AER to come to an agreement on any sharing of the expenditure risks between the business and consumers.

3.4 Value of the potential reward available to network businesses from doing DSP projects to address peak demand

D1: Efficiency Benefit Sharing Scheme (EBSS) for capital expenditure

Issue is being considered under the AER Rule Changes on Network Regulation

D2: A specific efficiency carryover mechanism for DSP projects

The percentage of cost savings retained when a business uses DSP to defer capex depends upon the number of years the business keeps the savings before sharing with consumer. Without an EBSS for capex, this depends upon the number of years remaining in the regulatory period.

A general EBSS may be difficult to administer and in the past, regulators have expressed concern about an EBSS giving the businesses an inefficient incentive to simply defer capital expenditure. Such concerns could be addressed by having a specific efficiency scheme for DSP projects.

Option here is to add a new rule:

“If the event that the business is able to defer an approved capital project through DSP project then the value of that capital project is only removed from the RAB, the sooner of either [5 or 8] years after the approved planned date of the capital project or the date the DSP project ends.”

D3: Reform of the Demand Management Incentive Scheme

The current arrangements do not provide an additional profit incentive for network business to encourage the network business from doing DSP.

However we need to consider whether there is a need to have any additional profit incentives if we fixed the underlying expenditure incentives. There could be two possible reasons:

- DSP, by its nature, is more riskier, than traditional capital investment, and the business needs extra reward to compensate taking on those risks, or
- DSP, will deliver system wide benefits to the market, and a share of those benefits should be paid to the network if they initiated the DSP project.

We note that when the business is face with a choice between a network investment and a DSP investment (with the same profit potential) the business is likely to go with the “easier” network investment option. We recognised that the extra investigation and scoping time, hassle costs, going against operational planning culture, uncertainty about the impacts of DSP project, and having to develop a DSP project for a large number of residential consumers could be genuine extra costs and risks that the business may need to be compensation for. However the extent of such costs will obviously vary by the nature of the specific project.

Also in regard to whether the businesses should be permit to keep a share of the system benefits arising from DSP investment, we note that is not allowed under the current network regulation arrangements. For example, when a transmission business building a high voltage line which relieves congestion it does not receive any extra compensation for the savings in congestion costs.

Why should DSP projects be treated differently from this principle?

There are three standard models that have been used in the U.S. by different states to remove the financial disincentives for utilities to reduce load through DSP programs, and to provide an additional financial incentive to pursue these programs. Specifically:

1. Direct cost recovery allows utilities to recover the cost of the DSP program on a timely basis.
2. Lost fixed revenue recovery allows utilities to cover any prudent costs that may not otherwise be recovered due to reduced sales from the DSP program. Note that some states use an approach different than decoupling in the sense that it is only focused on reduced sales that are verified as resulting from DSP programs.
3. Performance incentives allow utilities to keep as before-tax profit a minor portion of the avoided cost that they otherwise would have incurred had they not implemented the DSP program. Roughly half of the 50 states in the U.S. have some form of performance incentive in place or pending, and we have analysed many of these programs.

Should the DMIS be change to give the network businesses an extra profit incentive? Is it appropriate that DSP projects to earn extra profit compared to normal capital assets? Should the potential extra profit be only temporary to help foster the DSP market?

Issues to the considered:

- What safeguards are needed to ensure that consumers get a net benefit from the application of an additional profit DMIS?
- How to ensure that the DSP projects approved under the additional profit scheme are efficient? Would this require a cost-benefit assessment (i.e., RIT-D)?
- Is it appropriate that the foregone revenue component of the DMIS scheme should only be limited to non-price based DSP projects? This may lead to the network business designing tariff based schemes to be revenue neutral –which may not be totally consistent with cost reflectivity.
- A profit DMIS would give the network business the upside potential of extra profit. However what should be the downside risk for network businesses? Should network business be face with the prospective of being penalised and if so under what circumstances?
- What should be the policy regarding the Demand Management Innovation allowance (DMIA)?
 - We note that is money from different sources being offered for investment in clean energy technology of one sort or another, mainly by Governments, and in particular the Commonwealth Government (e.g. Smart Grids, Smart Cities, etc). Is an innovation fund for distribution network businesses effectively creating a duplication of other arrangements?
 - While the DMIA provides a means for the DNSPs to fund research into and trial innovative DSP options, the extent to which to these businesses will want to do this will depend upon, amongst other factors, the percentage of savings resulting from such R&D, trials which are retained by the network business. A key factor in determining this amount will be the length of time from when the innovative DSP is implemented to the next regulatory reset. Currently the DMIA is a cost-pass through mechanism without any “profit” component. How can we add some add some profit incentive into this mechanism? Is it appropriate to do so?

3.5 Issues relating to the pricing arrangements providing an incentive on NSPs to increased consumption

The arrangements/incentives on DNSPS to price at efficient cost are being considered under the pricing work-stream for the review.

One option here is the decoupling approach. Our initial view is that this is may not be the best approach as it removes many of the incentives on price-capped business to price efficiently. We do not intend to cover this issue at the SRG meeting on 28 May as it is part of the pricing issues which were discussed at the previous stakeholder meeting.