



Australian Government

**Department of Industry
Tourism and Resources**

Review of Network Incentives for Distributed Generation and Demand Side Response

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2007

NER Forum

Melbourne 11 May



Background

Integrating consideration of DSR and DG into the development of a national distribution framework

- **Independent** expert review of the proposed distribution rules having regard to the effective evaluation of DSR and DG and related network incentives
- Report is yet to be considered by SCO and does not represent a policy position.
- Some recommendations may be incorporated in the initial Rules subject to timing constraints and the complexity of the changes required.



Background

Review is supported with case studies

1. Large Scale PV roll out
2. AMI roll out
3. Large user with DG that requires back-up connection
4. Mid-size DG supplying peak power & network support
5. Large DSR project to relieve CBD network constraints
6. Large industrial user actively engaging in demand side markets



Background

THE REVIEW IS

- Aimed at balancing incentives for efficient network v non-network investment
- Addressing economic issues in Chapter 6 of the Rules

THE REVIEW IS NOT

- Aimed at explicitly incentivising or subsidising DG or DSR
- Addressing non-economic issues in Chapter 5 of the Rules and Jurisdictional responsibilities.



Background

Other work is being undertaken

- A second NERA / Allen Consulting report - Chapter 5 issues
 - The report will address
 - distribution network planning;
 - distribution connection arrangements;
 - distribution capital contributions; and
 - impacts on DG/DSR – including losses
 - Final report expected in June
- Smart Meters



Outline of Recommendations

- Building block cost incentives
- Planning and service incentives
- Pricing incentives
- Generation incentives
- Issues outside chapter 6



Building block cost incentives

Equalising incentive for network and non-network expenditures

- DSR/DG-related expenditure needs to be recognised in building block expenditure forecasts
- Incentives for Opex and Capex should align regarding:
 - Cost efficiencies
 - Accurate forecasting



Building block cost incentives

Equalising incentive for network and non-network expenditures

- Opex / Capex incentive may be misaligned because:
 - Efficiency benefit sharing mechanisms only applying to opex
 - DNSPs risk averse nature
 - DNSPs may seek to reinforce their own market power
 - Building block process focuses on a DNSP's own costs rather than the most efficient alternative
 - WACC may be may different to DNSPs perceived WACC



Building block cost incentives

Recommendations

- Retain the recognition of network support payments in the building block derivation of revenue requirements.

NERA Ref: Section 5.2 Exposure Draft Ref: Cf6.5.6 and 6.5.7

- Balance opex and capex incentives by considering:
 - Allowing (but not requiring) incentive mechanisms for capex
 - Requiring AER to consult on DG/DSR impact when developing incentive mechanisms

NERA Ref: Section 5.2.1.1 Exposure Draft Ref: Cf 6.5.5

- Opex/capex assessment criteria
 - require the AER to be satisfied that the forecast expenditure reasonably reflects efficient non-network alternatives available to a DNSP

NERA Ref: Section 5.2.2 Exposure Draft Ref: Cf 6.5.6(c) and 6.5.7(c)



Planning and service incentives

Planning/service standards can affect ability and willingness to adopt DSR/DG

- Deterministic - requires assumptions on firmness
- Probabilistic - allows weighting by firmness, likelihood and cost
- Firmness of DSR/DG will depend upon
 - Scale of reduction in maximum demand
 - Coincidence of reduction with peak demand
 - Load control Infrastructure



Planning and service incentives

Service incentive design can affect DSR/DG

- Size of incentive
- Locational aspect to performance measurement
- Incidence of penalties/rewards



Planning and service incentives

Recommendations

- DNSPs should have ability to pass on liability for service performance to third party providers of non-network solutions

NERA Ref: Section 6.1.3 Exposure Draft Ref: Cf 6.6.2

- AER to consult on DSR/DG incentives arising from any proposed service incentive arrangements

NERA Ref: Section 6.3 Exposure Draft Ref: new rule

Jurisdiction standard setters should consider the relative costs and benefits of probabilistic standards relative to deterministic planning standards



Pricing incentives

- Networks primarily provide energy transfer capacity
- Capacity decisions are driven by coincident peak demand
- Absent specific network benefits, DNSPs will be indifferent to DSR/DG only if their prices recover the cost of providing network capacity to customers
- Currently, the ability to price capacity efficiently has been limited by:
 - Metering functionality
 - Side constraints on ‘fixed’ charges



Pricing incentives – form of price control

Revenue caps

- break link between MR and MC
- provide poor incentives for efficient tariff setting
- Incentives DNSPs to implement DSR/DG because reduction in maximum demand means lower costs
- DNSPs maintain their revenue

Price caps

- maintain link between MR and MC
- Prices are set on usage (until AMI)
- Incentives customers to invest in DSR/DG because avoidable costs are high
- DG/DSR may result in a loss of DNSP revenue

Both Revenue Caps and Price Caps will be allowed in the initial Rules



Pricing incentives

Demand Management incentive arrangements (D-factor)

- Assists in correcting the disincentive for DSR arising from foregone revenue
- Provides artificially strong incentive for DSR
 - Pass through of one cost without taking into consideration reductions in others
- Second best policy option to efficient tariff structures but has merit when usage-based tariffs are prevalent



Pricing incentives

Form of price control recommendations

Neither price nor revenue caps provides perfect incentives under current constraints.

- Price caps should be preferred over revenue controls for the purpose of facilitating the utilisation of DSR and DG, particularly when AMI and the easing of side constraints allows efficient forms of pricing.

NERA Ref: Section 7.6 Exposure Draft Ref: Cf 6.2.5

- The AER be permitted to establish an incentive mechanism to compensate DNSPs operating under a price cap for lost revenue due to efficient DSR initiatives.

NERA Ref: Section 7.6 Exposure Draft Ref: Cf 6.2.5



Pricing incentives

Efficient pricing

- Side constraints limit efficient tariffs
- The size and tariff parameters to which constraints are applied are important
 - Limit movement in component charges
- Tariff reassignment constraints may prevent customers being assigned to more efficient tariffs, including through AMI.
- Customers should be able to effect change in all their metered charges - ambiguity in capacity charge review and reset protocols will impede customer uptake of DSR/DG.



Pricing incentives

Pricing recommendations

- The requirement for periodic reviews of side constraints should be retained in the initial rules

NERA Ref: Section 7.8.1 Exposure Draft Ref: Cf 6.18.6

- The initial rules should not include requirements for geographical averaging but leave decision to generic principles of efficient pricing.

NERA Ref: Section 7.8.3 and 9.2.1 Exposure Draft Ref: Cf 6.2.5

Jurisdictional variation agreed under the AEMA should be handled through the derogation process.



Pricing incentives

Pricing recommendations

- Restrictions on tariff reassignment should be limited to principles that ensure this is based upon:
 - customers' usage and connection characteristics, ie, the drivers of network costs; and
 - equal treatment to customers with similar usage and connection characteristics (equality).

NERA Ref: Section 7.8.2 Exposure Draft Ref: New Rule

- DNSPs should be required to reassign customers to a time of use tariff following installation of AMI.

NERA Ref: Section 7.8.2.1 Exposure Draft Ref: New Rule

- Reassignment should be accompanied by a requirement for customer education regarding ways to manage demand.

NERA Ref: Section 7.8.2.1 Exposure Draft Ref: New Rule



Pricing incentives

Pricing recommendations continued

- Require DNSPs to submit to the AER for approval protocols for the assessment of capacity demand and associated charges, including:
 - the period over which capacity demand will be reassessed and charges reset (max 12 months).



Generation incentives

- Efficient investment in generation requires equal treatment of generation costs and benefits.
- Rules must ensure competitive neutrality between different forms of generation.
- For smaller DGs costs outweigh benefits of tailored arrangements and market power negotiation is inappropriate



Generation incentives

Current impediments to neutrality in generation

- Negotiated DG connection terms and cost may include both deep and shallow costs
- Transmission connection charges are limited to shallow costs
- DNSPs required to pay avoided TUOS to DGs (no equivalent for transmission-connected generators)
 - DNSPs may bare these costs twice
 - Costs aren't avoided in the short-term, ie, within regulatory period incentives



Generation incentives

Recommendations

- DNSP's should not be permitted to levy on DGs either positive DUOS charges for energy exported to the grid or deep connection costs.

NERA Ref: Section 8.2.1.1 Exposure Draft Ref: New Rule

- Voluntary payments from DGs to DNSPs should be permitted where a DG agrees to pay for upstream augmentations to increase energy transfer capability.

NERA Ref: Section 8.2.1.1 Exposure Draft Ref: New Rule

- Retain requirement for DNSPs to submit a negotiating framework for DG connection charges to the AER for approval.

NERA Ref: Section 8.3 Exposure Draft Ref: Cf 6.7 and 6.7.5

- Remove the requirement for DNPS to make avoided TUOS payments to DGs.

NERA Ref: Section 8.4.3 Exposure Draft Ref: New Rule



Generation incentives

Recommendations continued

- The Rules continue to provide for TNSPs and DNSPs to make support payments to DG/DSR where such non-network solutions represent the most efficient means of alleviating the network constraint.

NERA Ref: Section 8.4.3 Exposure Draft Ref: New Rule

- AER to be satisfied that this framework:
 - Provides robust procedure for negotiating connection agreements (inc. info exchange);
 - Requires DGs only to fund shallow connection costs; and
 - Makes DG proponents aware of options for the funding of deep connection costs or the connection constraint consequences of these not being funded (either by the DG or customers).

NERA Ref: Section 8.3 Exposure Draft Ref: Cf 6.7 and 6.7.5



Generation incentives

Recommendations

- Required DNSP to allow customers to install and use PV on the basis of the same usage and capacity tariff elements applying to equivalent sized load.

NERA Ref: Section 4.3.2 Exposure Draft Ref: New Rule



Issues outside chapter 6

- **Service Reliability Standards**
 - Jurisdiction standard setters should consider the relative costs and benefits of probabilistic standards relative to deterministic planning standards
- **Losses**
 - Further analysis be undertaken on the current treatment of losses and their impact on promoting efficient DG projects.
- **Dispute Resolution Framework**
 - The price and non-price aspects of dispute resolution should be aligned



Issues outside chapter 6

- **Metering**
 - Potential benefits in terms of improved pricing and incentives for DG/DSR should be considered when evaluating a large scale AMI roll-out.
 - PV installations should receive priority treatment in a AMI roll-out to facilitate the development of tariff structures that provide efficient signals for evaluating the installation of PV.
- **Access to Load Control**
 - Where a DLC facility is available consideration should be given to ways to ensure access is provided to that customer's retailer DNSP, TNSP or other DSR intermediary engaged for the purposed of DLC.



Issues outside chapter 6

- **Constraints on Energy Export**
 - Further analysis be undertaken investigating non-price connection terms and conditions that may provide an impediment to efficient utilisation of DG
- **Connection Information**
 - A review of Chapter 5 of the Rules is required to ensure that
 - DNSPs provide DG proponents with the information necessary to apply the reg test to a DG connection proposal.
 - DNSPs provide information on network constraints and/or under-utilised existing transfer capability to allow DGs to identify siting options.
 - DG proponents reveal their intended energy export levels such that the DNSP can assess connection costs connection conditions to protect network performance.



Next Steps

- SCO to consider progressing NERA recommendations in light of stakeholder comment
- Issues identified may be addressed through:
 - The initial Rules
 - Second NERA / Allen report
 - Smart meters work stream
 - Referral to AEMC



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