

# TransGrid APR Forum 2011

Network Support from Non-Network Sources:

## **TransGrid's Approach and Experience**

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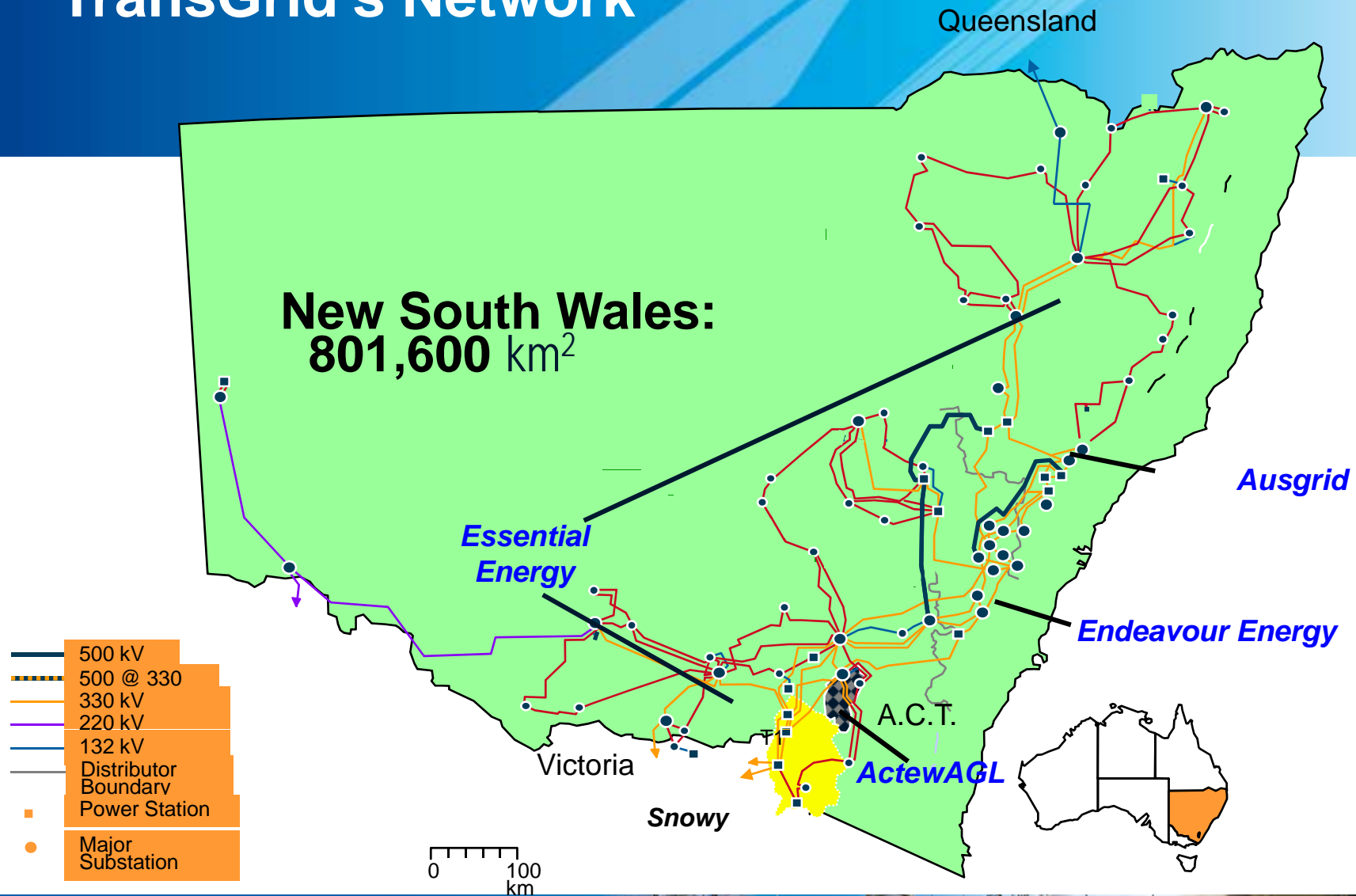


# Outline

- ❑ TransGrid's Network
- ❑ Factors Driving Electricity Demand
- ❑ TNSP obligations under the NER (incl. NSCAS)
- ❑ TransGrid's Approach & Experience
- ❑ Future Projects
- ❑ Innovation in Demand Management
- ❑ Discussion



# TransGrid's Network



# Factors Driving Electricity Demand

- ❑ Population and Population Growth
- ❑ Community Expectations – Lifestyles
- ❑ Available Fuel/Energy Sources and their Relative Cost
- ❑ Climate and Climate Change
- ❑ Investment Capability – manufacturing & mining
- ❑ Government policies and directions



# What is Demand Management ?



# What is Demand Management ?

Eliciting demand side response in terms of reducing peak electricity demand, changing energy usage to other forms of energy sources and/or embedded generation to meet part of the customer peak electricity demand.



# What are Non-Network Alternatives? (1)

In broad terms, non-network alternatives are those alternatives which address the emerging network constraint(s) being considered by providing network support from non-network sources and achieve **(more or less)** the same level of reliability as the network alternatives, thus allowing deferral or cancellation of network augmentation.



## What are Non-Network Alternatives (2)

### Non-Network Alternatives consist of one or more of the following:

- ❑ Demand Management initiatives – shifting peak demand etc
- ❑ Demand Side Response (DSR) – deliberate curtailment of demand at peak times, e.g. stopping production by large loads
- ❑ Embedded Generation – Standby generation, Gas Turbines (GTs), Wind Farms (intermittent)
- ❑ Aggregated DSR – this can consist of one or more of the above downstream at low levels which needs to be aggregated to be meaningful in the context of transmission.



# Drivers Influencing TransGrid's Approach to DM

- ❑ Availability and feasibility of non-network options
- ❑ Commercial returns to the company
- ❑ Corporate Social Responsibility
- ❑ Community Expectations – e.g., new easements
- ❑ Obligations under the NER



# TNSPs Obligations in the National Electricity Rules



(1)

- The National Electricity Rules require Transmission Network Service Providers (TNSPs) to treat non-network alternatives on equal footing with network proposals (RIT-T)



# TNSPs Obligations in the National Electricity Rules



(2)

## □ Efficiency

Final recommended option must be economically more efficient than other options ( *Regulatory Test and Regulatory Investment Test – Transmission (RIT-T)* )

## □ Prudence

- TransGrid has obligations to maintain supply reliability to its customers. Non-network alternatives must deliver same level of reliability (more or less) as network alternatives.
- Also, non-network alternatives must be feasible (must have a proponent or a likely proponent, able to be delivered when required)



# New TNSP Obligation in the NER – NSCAS (1)

- ❑ AEMC Rule Change relating to ***Network Support and Control Ancillary Services (NSCAS)***.
- ❑ The main purpose of the Rule Change was to transfer responsibility for planning and procurement of NSCAS from AEMO to NSPs as NSPs were already procuring some NSCAS to meet their own jurisdictional reliability obligations.
- ❑ NSCAS is defined as services relating to network support and control required only to meet the NEM system security and reliability standards.



## New TNSP Obligation in the NER – NSCAS (2)

- ❑ The Rule provides for NSCAS to be procured by NSPs and for AEMO to have a “procurer of last resort” role if NSPs fail to procure NSCAS that AEMO has identified as being required.
- ❑ Planning for NSCAS in NSW will be the responsibility of TransGrid. However, AEMO will also have a responsibility for identifying NSCAS need in its NTNDP.
- ❑ The new Rule will come into effect on 5 April 2012.
- ❑ ***Some of the NSCAS may come from non-network sources.***



# Mechanisms for Funding Network Support

## ❑ **Pass-through**

To be approved by the AER on a case by case basis.  
Test is prudence and efficiency of expenditure

## ❑ **Deferral value of capex**

To be approved by the TransGrid Board.  
Must be commercially prudent and efficient.



## TransGrid Approach to Non-Network Alternatives

- ❑ Publish Needs Statement and Annual Planning Report regarding emerging constraints
- ❑ For major constraints, publish Request For Proposals (RFP) for Non-Network Alternatives
- ❑ Seek Board approval if Non-Network options are efficient and prudent
- ❑ Negotiate with successful proponents a Network Support Agreement (NSA)



# Non-Network Alternatives : Our Experience

## 2000-2011 (1)

No proposals received:

- Mid-North Coast of NSW
- Far North Coast
- South West Sydney
- NSW Central Coast

Proposals received, but very costly compared to savings from deferral; network project proceeded as planned

- West & Central West NSW (Wollar – Wellington)



# Non-Network Alternatives : Our Experience

## 2000-2011 (2)

Successful responses:

- ✓ Newcastle-Sydney-Wollongong area (Western 500 kV)- complete
- ✓ Sydney Inner Metropolitan Area – contract signed
- ✓ Network Support to the Far North Coast - offers being analysed
- ✓ Network Support to the Mid North Coast - offers being analysed

# Non-Network Alternatives : Future Projects

RFPs under preparation for release:

- Reactive power for main system support
- Increased transfer capability from the south
- Gunnedah – Narrabri – Moree Area
- South Coast and Nowra Area

Assessing projects with the view of issuing RFPs:

- Sydney East Substation
- Supply to Southern Sydney
- NSW to Queensland transmission capacity



# TransGrid's Innovation DM Allowance

- ❑ TransGrid received a DM innovation allowance of \$1.0 million/year for the 2009-2014 regulatory control period
- ❑ TransGrid is working with the DNSPs in NSW/ACT and has signed MOUs with the four NSW & ACT distributors
- ❑ Intention is to encourage innovative demand side response, encourage market to mature and elicit adequate responses to RFPs; and
- ❑ Implement lessons learnt from the DMPP and other new initiatives in partnership with distributors in NSW & ACT



# TransGrid's Innovation DM Allowance

- ❑ Research project with University of Queensland re impact of DM on planning
- ❑ Establishing a DM triage database
- ❑ Possible Joint research DM project with RMIT to look at consumer behaviour related to DM incentives & opportunities



# Summary

- Consideration of non-network alternatives is integral part of TransGrid's network investment process
- TransGrid implements Non-Network alternatives (support from DM & embedded generators) if prudent and commercially efficient
- TransGrid collaborates with industry and universities to
  - Encourage innovative DSR
  - Encourage market to mature
  - Implement lessons learnt from the DMPP & subsequent DM/Non-Network projects

# Questions

