

A National Communication Platform is Announced

The recently announced plans for Australia's National Broadband Network (NBN) could raise a number of significant risks and opportunities for those contemplating advanced metering and smart grid projects.

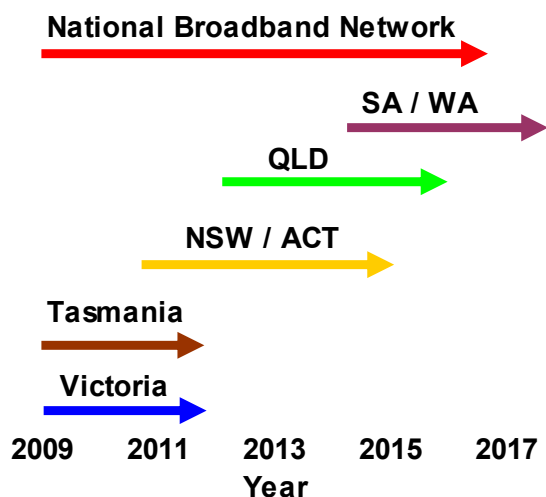
Key NBN Platform Features

The national platform is expected to cost \$48 billion over 8 years, reach 100% of all premises in Australia (90% via 100MB fibre optic, the rest via 12MB satellite or next generation wireless), and create 25,000 jobs during the rollout.

Plugging in Advanced Metering

The NBN, should it proceed, will put in place a state-of-the-art communications platform that will reach 100% of utility customers and assets before most if not all states have finished their advanced metering infrastructure (AMI) deployments (see Figure 1).

Figure 1 – NBN and AMI Schedules



All National Electricity Market jurisdictions must decide on a rollout by 2012.

While some metering deployments may occur prior to the NBN, the specified communications platform will provide more than enough capacity and performance to deliver all advanced metering services at incremental cost.

Issues, Risks and Opportunities

Notwithstanding the key policy decision around whether and how best to integrate the two national infrastructure investments, Energeia sees the following key issues, risks and opportunities for the national AMI initiative:

- **NBN rollout alignment with AMI.** The timing is very close for all but Victoria, and the 'black spots first' approach would support AMI using the public network.

Smart grid and AMI could align with rural NBN targeting to improve low reliability and high cost meter reading, respectively.

- **NBN security and reliability.** Historically, public telecommunications infrastructure has not provided the requisite level of security and reliability to meet requirements for managing the electricity network, including the immunity of the communications system from power failure.

The NBN is expected to meet utility requirements for last mile communications between major substations, the low voltage network and customer premises.

- **Whole of government complexity.** The process for reaching agreement across the various government stakeholders, industry players and regulators is not yet defined, but would affect the alignment of NBN with the national AMI deployment.

Other key NBN stakeholders would include health, education, telecommunications, industry and media interests – each with their own view of deployment priorities, service requirements and cost allocation.

- **Accessing NBN conduits for cables.** Although details around how fibre to the premises will be achieved in practice, it may result in significant cabling activity.

Utilities may be able to access NBN conduits at relatively low cost, and there may be a push from customers to underground electric assets at lower cost.

- **Accessing Network poles and conduits.** Utility assets and rights of way are well placed to provide the NBN with physical pathways to customer premises.

This opportunity will be tested by the Tasmanian deployment, where Aurora has already trialled fibre to the distribution transformer using their own infrastructure.

- **Resourcing two national rollouts.** Initial media reports have indicated that there is sufficient spare labour capacity to deliver the NBN rollout.

However, it is unclear whether this considers resourcing impacts from national electric network infrastructure programs, AMI deployments, or strengthening construction and mining industry demand.

- **Regulatory pressure to use the NBN.** Jurisdictional and national regulators have yet to take a position regarding whether utilities will be required to reconsider their deployment plans in light of the NBN.

In the absence of regulatory pressure, utilities are likely to prefer building their own telecommunications network in order to maintain control over a mission critical service, even at a premium.

Implications for National AMI

If the NBN were to proceed as outlined by the government, Energeia sees the following key implications for Australian AMI deployments:

- **Moves to public carrier solutions and telecommunication industry standards.** Assumptions of inadequate coverage, reliability and cost may no longer apply.

Broadband will support bandwidth hungry protocols such as IP and IPsec, increasing the use of industry standards.

- **Reduced telecommunications costs.** This will largely depend on the NBN's cost allocation model and its shared use by AMI deployments.

Leasing arrangements could be utilised to achieve the preferred capital cost structure.

- **Quantum leap in service levels and service options.** Services levels agreed to in Victoria and as part of the national process were predicated on first and second generation AMI technology.

The use of fibre optic cables and MPLS network technology could allow true on-demand service for AMI transactions and rapid deployment and provisioning of new services as they emerge.

- **Risk of near-term slowdown and poor coordination.** Planned AMI activities may be put on hold in the near term pending resolution of NBN related issues.

Poor coordination between entangled NBN and AMI deployments could increase AMI costs due to the critical role of telecommunications during AMI rollouts.

- **Higher field force costs, potential synergy.** Simultaneous national infrastructure rollouts could put pressure on the supply of field service companies and resources.

Although meter installations are expected to require relatively skilled labour, integrated field operations could save costs by reducing total truck rolls.

Tasmania will be Industry Test Case

Aurora, the Tasmanian electric utility, is the announced partner to deliver the NBN in Tasmania as early as July 2009.

Aurora has previously investigated a number of business cases for deploying a broadband telecommunications infrastructure, but none proceeded beyond commercial trials.

The success or otherwise of the Tasmanian NBN rollout over the next six to twelve months is likely to provide the best indication of the potential for AMI and NBN to successfully work together.