

# UNI Demand side initiative

Stakeholder presentation

30 August 2010

TRANSPower



# Context

- \$110M reactive support programme approved:
  - Mix of solutions
  - >\$10M for demand side product to be in market by 2012
- “Smart” investment to:
  - Defer investment in new assets
  - Provide headroom during construction of upgrades
  - Trial smart technologies to get mass response
- Will require wide cooperation and coordination:
  - Consultative process
  - This is the first step in that process



# Road map

- Transpower's objectives
- The need
  - Discussion
- Some options
  - Discussion
- Transpower's role
- Process
  - Discussion



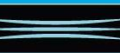
# Transpower Objectives

- Risk management during commissioning
- Encourage economic demand side participation to defer or avoid investment in transmission and reactive support
- Encourage a long-term market in demand side response to enable more flexible management of the grid
- Operate a secure and reliable grid



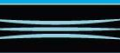
# The need

- **Contingency measures** up to, during and after commissioning of NIGUP and NAAN
- Permanent ability to reduce **summer afternoon peaks**
- Permanent ability to reduce **winter morning and evening peaks**

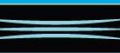
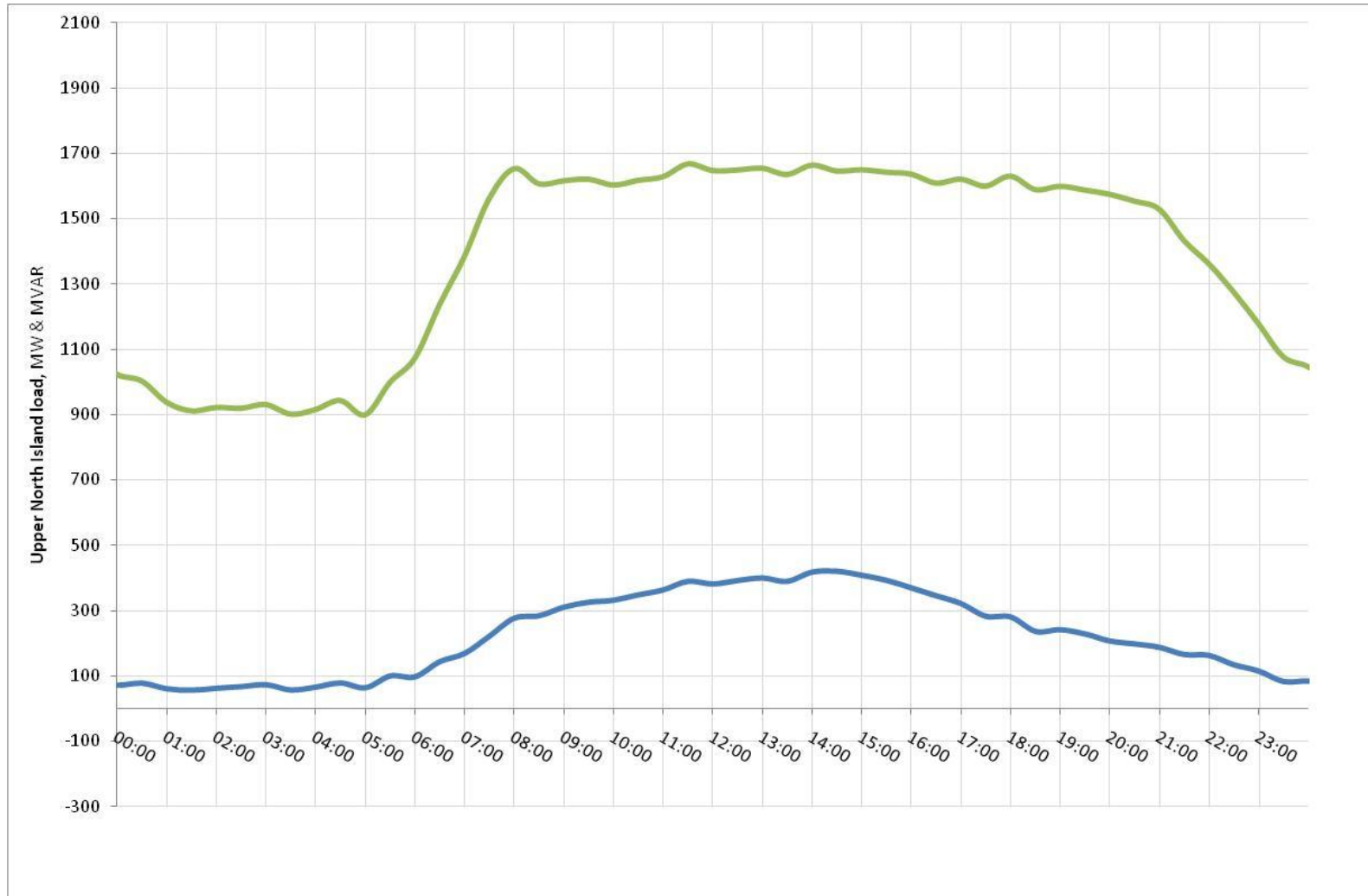


# Need: Contingency measures

- Provide headroom to meet demand during construction and commissioning of new infrastructure
- Gain efficiencies of regional load coordination when power system at its limit

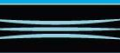


# Need: Summer afternoon peak

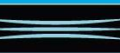
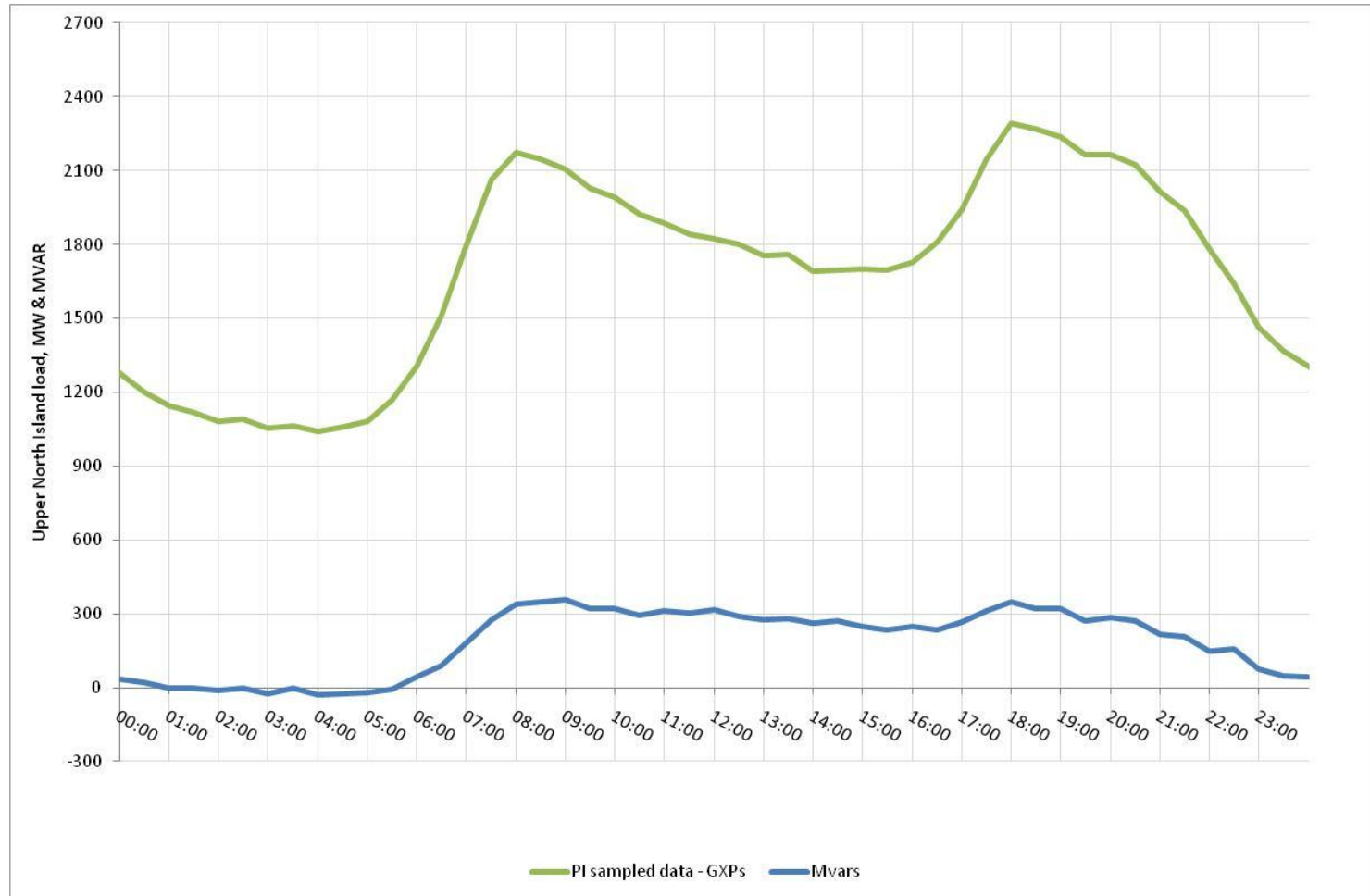


# Need: Summer afternoon peak

- Automatically reduce non-essential load under certain conditions
- Mid-October to March 12h00 – 14h00



# Need: Winter peaks

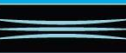


# Need: Winter peaks

- Provide headroom to meet demand during construction and commissioning of new infrastructure
- June to August
  - 07h00 to 10h00
  - 16h00 to 21h00



# Discussion - needs



# Options

- Contingency measures ASAP:
  - Few large loads automatically managed under certain conditions
  - Regional load control
- 60 MW of summer demand response by 2011/12 and ongoing
  - Large and medium loads agree to control of non-essential load
  - Regional load control
- Trial of technologies to access mass response - ongoing
  - Small loads



# Transpower's role

- Secure funding and facilitate the delivery of a secure and reliable grid
- Where appropriate facilitate outcomes:
  - Seeding of development
  - Encouragement and facilitation of growth and innovation
  - Provide reasonable certainty for investors
  - Transition to long-term funding for proven reliable and economic performing initiatives
- Contracts and systems
- Transpower retains decision making role to ensure it meets its obligations to deliver a secure and reliable grid



# Delivery mechanism

- Transpower interested in outcomes not means
- Transpower will specify the outcomes it requires
- Leave solutions and technology to market
- Contracts will reflect importance of reliability
- Stakeholder engagement is necessary for success



# Discussion - options



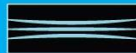
# The process – Contingency

- Load controller to co-ordinate regional load has been suggested (2011).
  - Assess potential for load control
  - If potential good then consider proceeding
- Large load reductions for specific events (11/12, 12/13)
  - Assess potential
  - Procure
- Protocols and systems
  - Protocols for identifying demand reduction triggers
  - Systems to initiate demand response, verification and payment



# The process – peak reduction

- 60MW peak reduction (equivalent to annual load growth)
- We have a view this will come from large and medium load
  - Confirm options and their potential
  - Commercial framework
  - Operational functions
  - Systems and hardware
  - Limited trial (early 2011)
  - Scale up for 2011/12 and 12/13



# The process – mass demand response

- Our view is that there is not a mature product so want to explore options, test them and assess whether peak reductions can be reliably achieved and sustained
  - Confirm options and their potential
  - Commercial framework
  - Operational functions
  - Systems and hardware
  - Limited trial (date uncertain)
  - Scale up

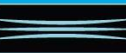


# Discussion – process



# Time line

- Summer 2011/12
  - Load control
  - Limited demand response trial
- Summer 2012/13 and onwards
  - Regional demand response
  - Regional load control
  - Trial of mass response (small loads)



# Feedback sought today

- Questions
- Right direction?
- Additional options?
- Sensible process?
- Commercials?
- Next steps?

