Aurora Energy

distribution network connection issues, planning & solutions

(August 2008)

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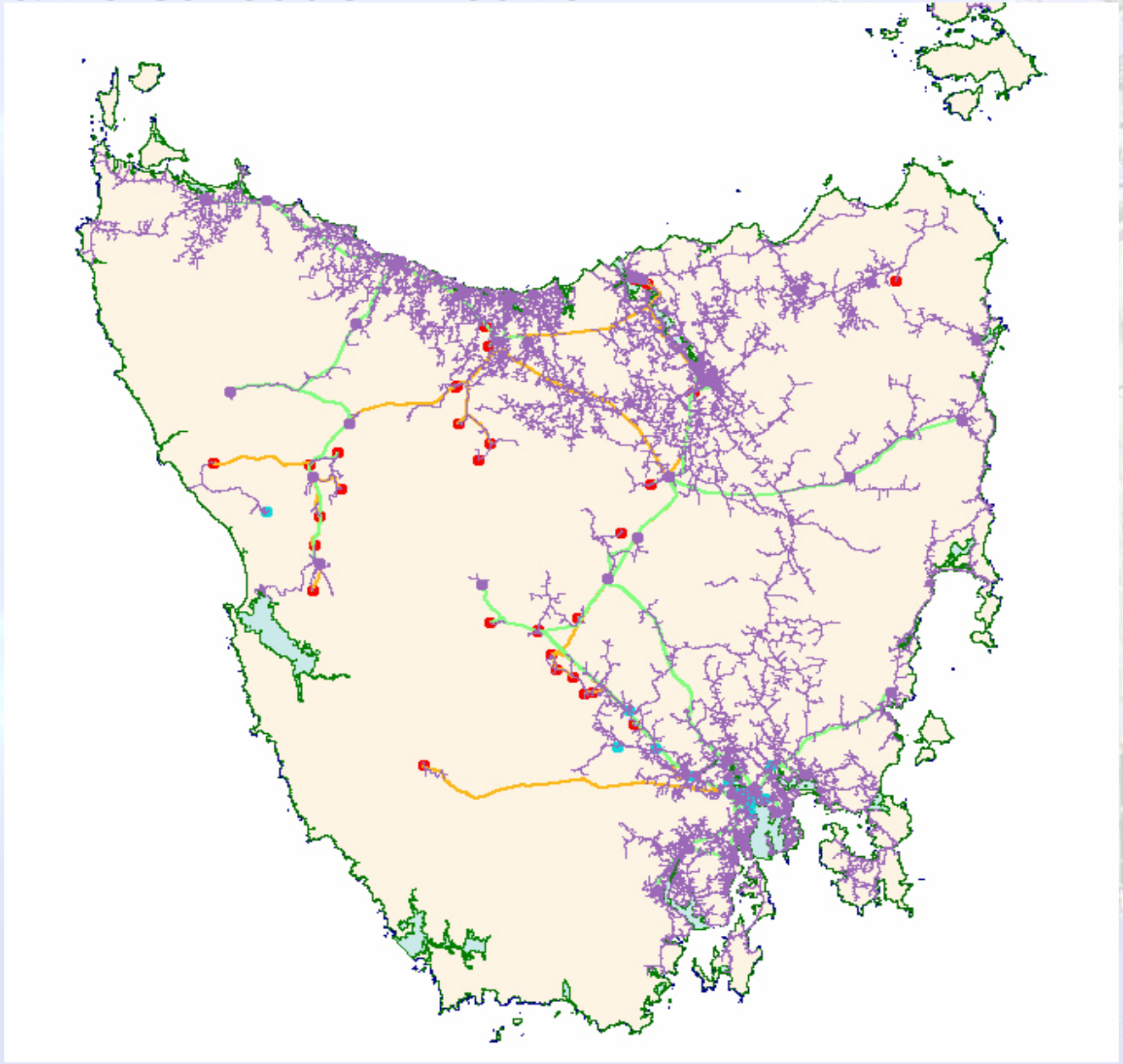
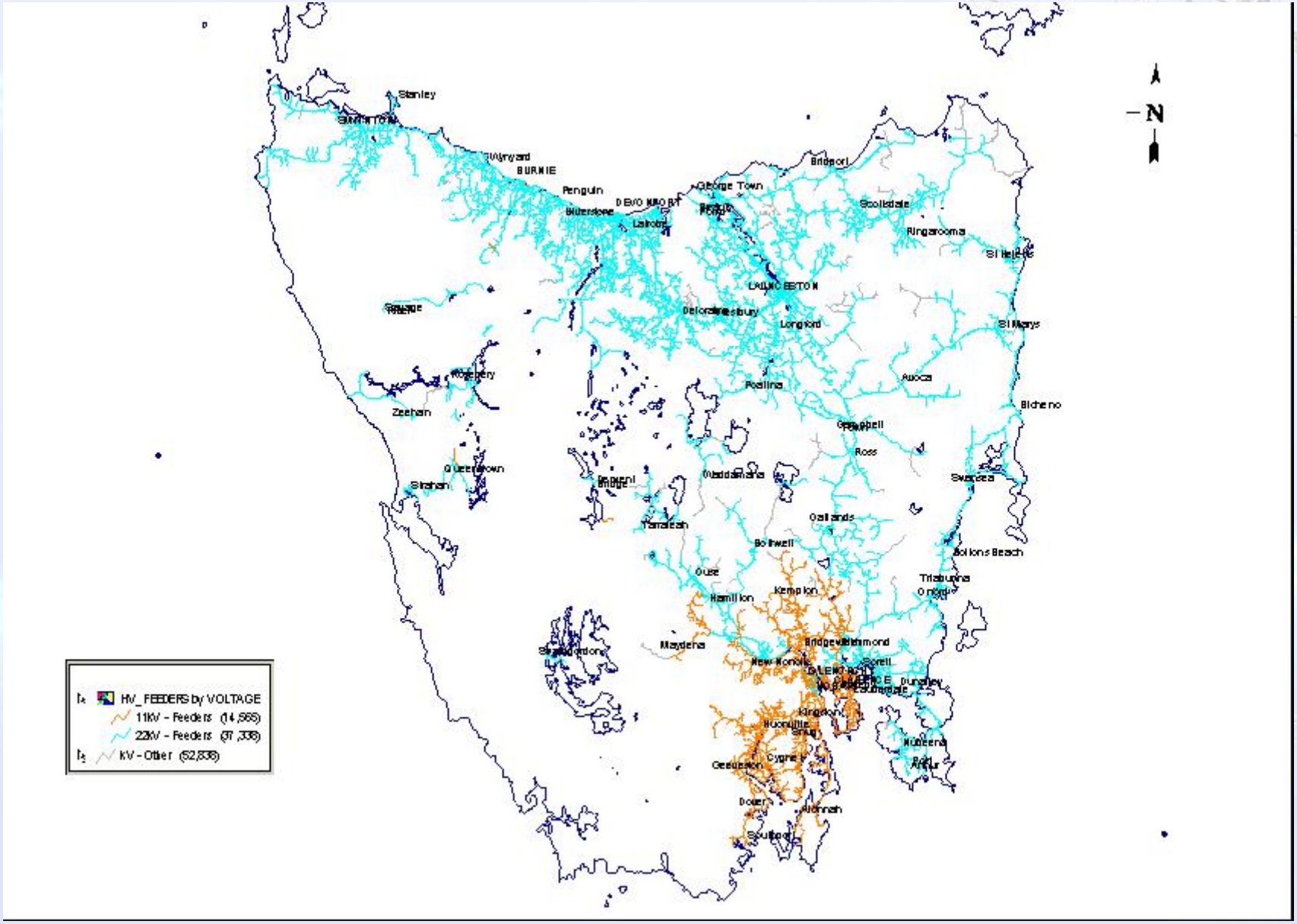
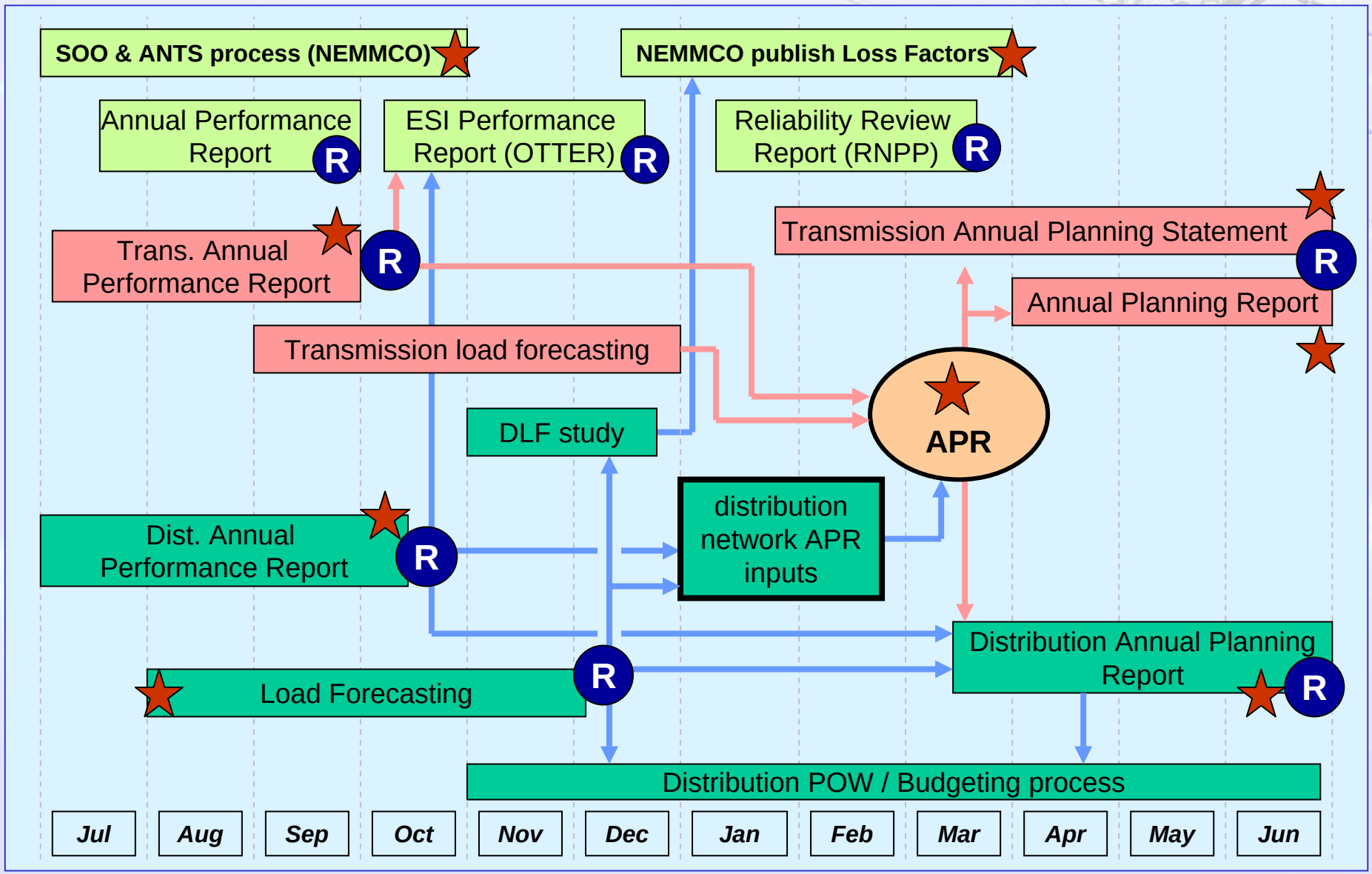
Tasmanian distribution network



11kV & 22kV distribution network



key elements of integrated planning



distribution network constraints & issues

- previously identified joint solutions / projects - in progress
- program of work (projects) recognised in Aurora's recent Pricing Submission & integral in the delivery of outcomes
- specific distribution network areas of concern
  - reliability issues (new performance standards)
  - capacity constraints (load growth, security & operational)
  - distribution feeder (PQ metering, protection, access & control)
  - project management (asset boundary joint requirements)

all of which affect the transmission connection points

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new distribution reliability standards

- area (discrete communities), rather than feeder based
- better represent customer reliability expectations
- the work required to bring the new areas into compliance was developed in conjunction with OTTER and fully funded

new reliability categories

	No. of communities
Critical Infrastructure • Inner Hobart CBD	1
High Density Commercial • Hobart CBD, Launceston, Devonport, Burnie, Glenorchy CBDs, Rosny, Kingston, Kings Meadows	8
Urban and Regional Centres • expanded from Greater Hobart, Greater Launceston, Burnie and Devonport areas to include larger rural towns, eg Deloraine, Bridport, Strahan	32
Higher Density Rural • Rural Residential, Agribusiness	33
Lower Density Rural • The Rest	27
	101

new reliability communities

NEW RELIABILITY AREAS

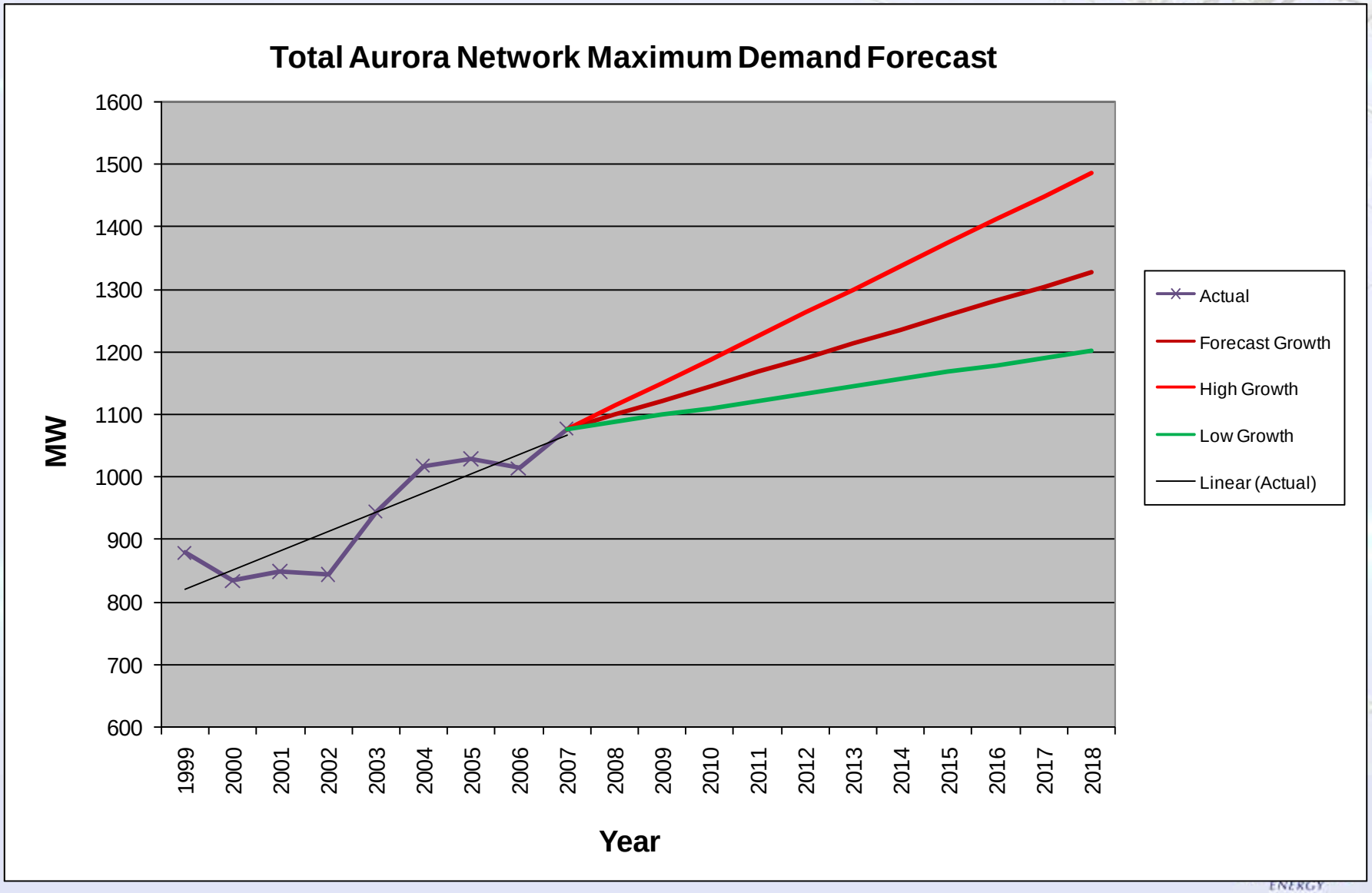
- **Critical Infrastructure** (heart of Hobart CBD)
- **High Density Commercial** (eg Eastlands)
- **Urban**
- **High Density Rural** (higher value farming)
- **Low Density Rural** (lower value farming)

network focus & impacts

- distribution network focus
  - Targeted Reliability Improvement Programs (TRIP)
    - targeting the worst performing areas
    - some rural communities will require further concentrated effort
  - drive towards a 'Smarter Network' – (self healing, faster response)
    - Distribution Loop Automation
    - realtime SCADA to Reclosers
  - create greater inter-connectability with adjacent feeders
  - shorter feeders = better reliability

- what that will mean to connection points
  - additional and shorter distribution feeders
  - influence decisions on new connection sites (location & no. of feeders)
  - greater requirement to get protection right
  - closer & greater monitoring of reliability and supply quality

statewide results – Maximum Demand



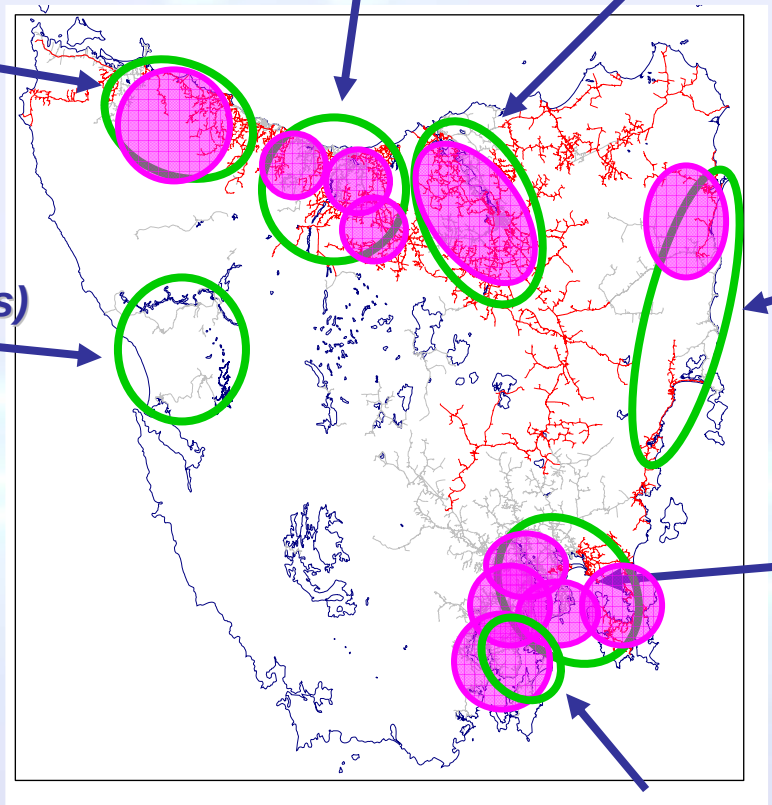
distribution network capacity constraint issues

+ growth hot spots

Devonport
Port Sorell
Deloraine
Westbury

George Town
Launceston (south)

Wynyard
Burnie
Penguin



West Coast
(mining developments)

East coast area
Midlands area

Hobart West (+ city)
Hobart eastern shore
Hobart Northern suburbs
Brighton area

Kingston - Electrona

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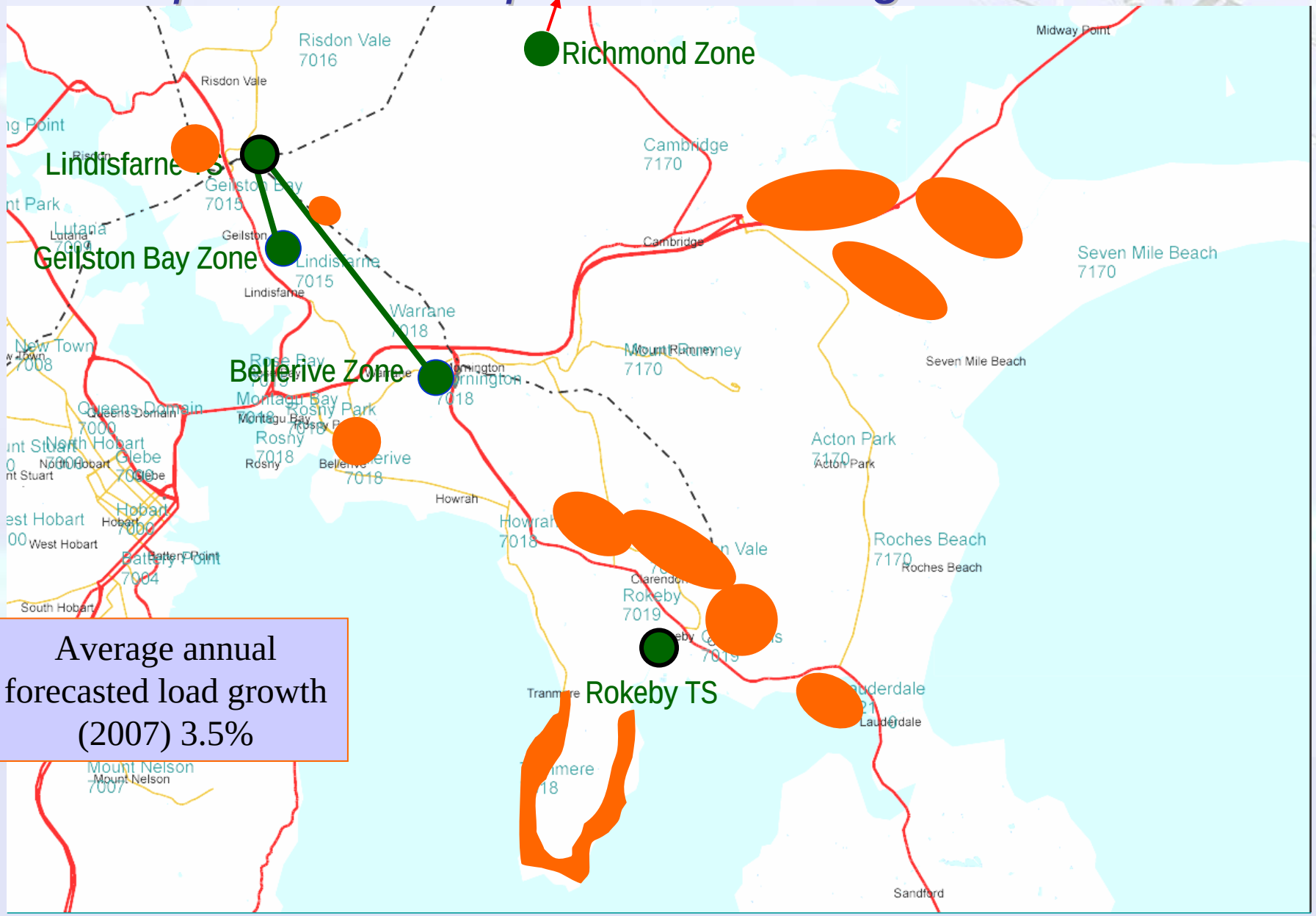
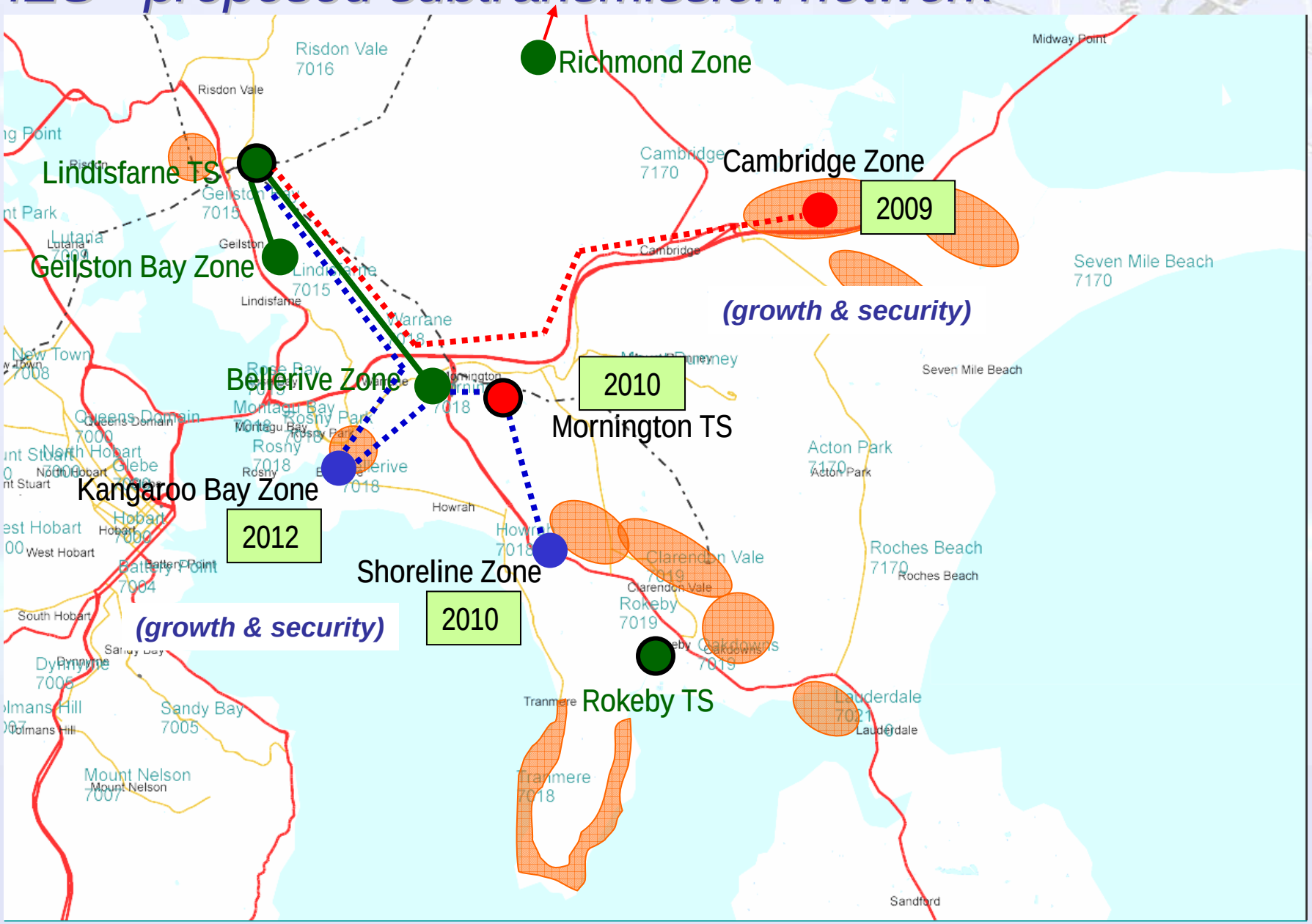
area issues & proposed network solutions options

- Hobart Eastern Shore (HES)
- Hobart Western Shore (HWS)
- Kingston
- Greater Launceston Area Development (GLAD)
- Devonport / Wesley Vale
- Burnie / Wynyard
- West Coast

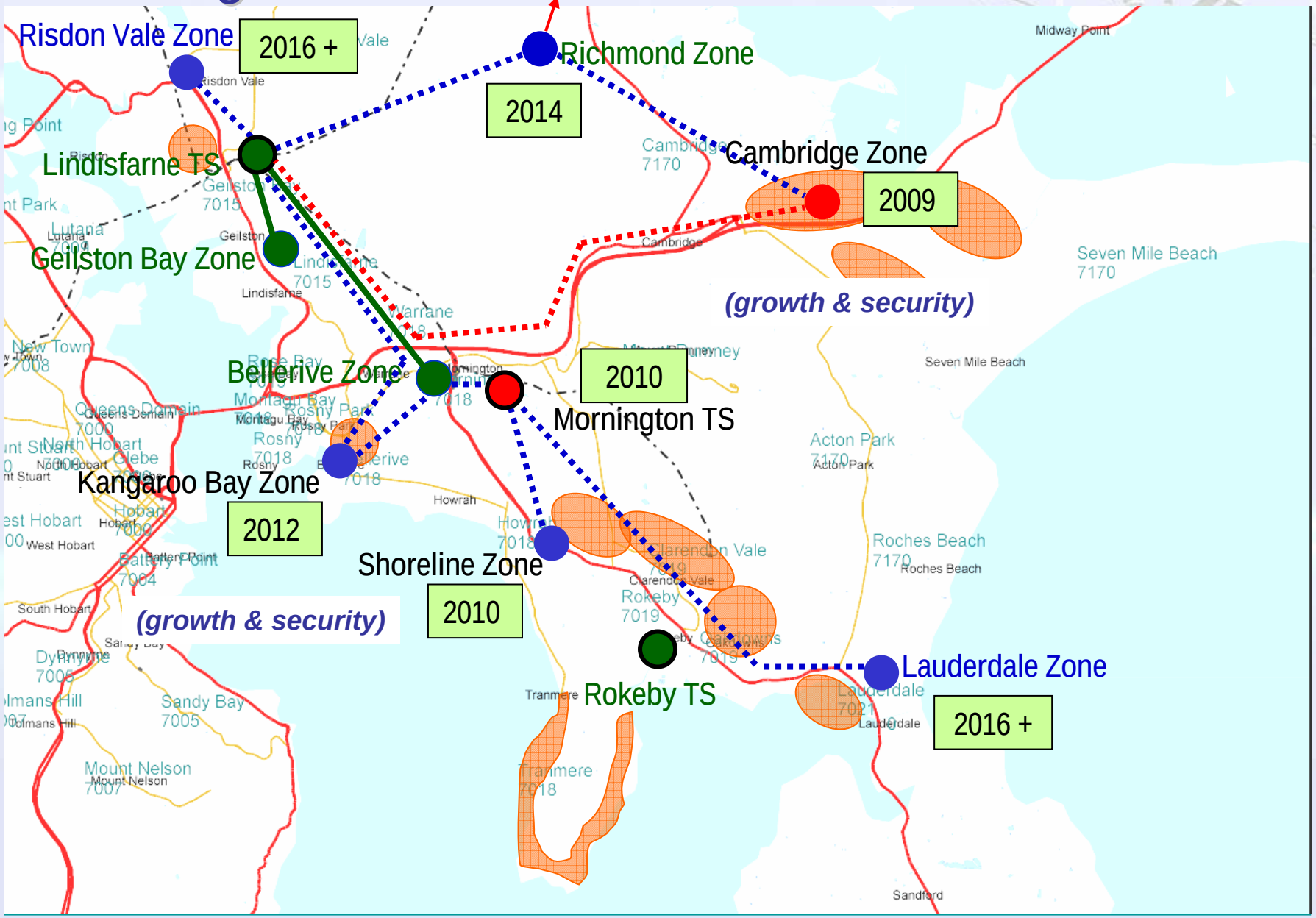
HES - specific developments & load growth areas



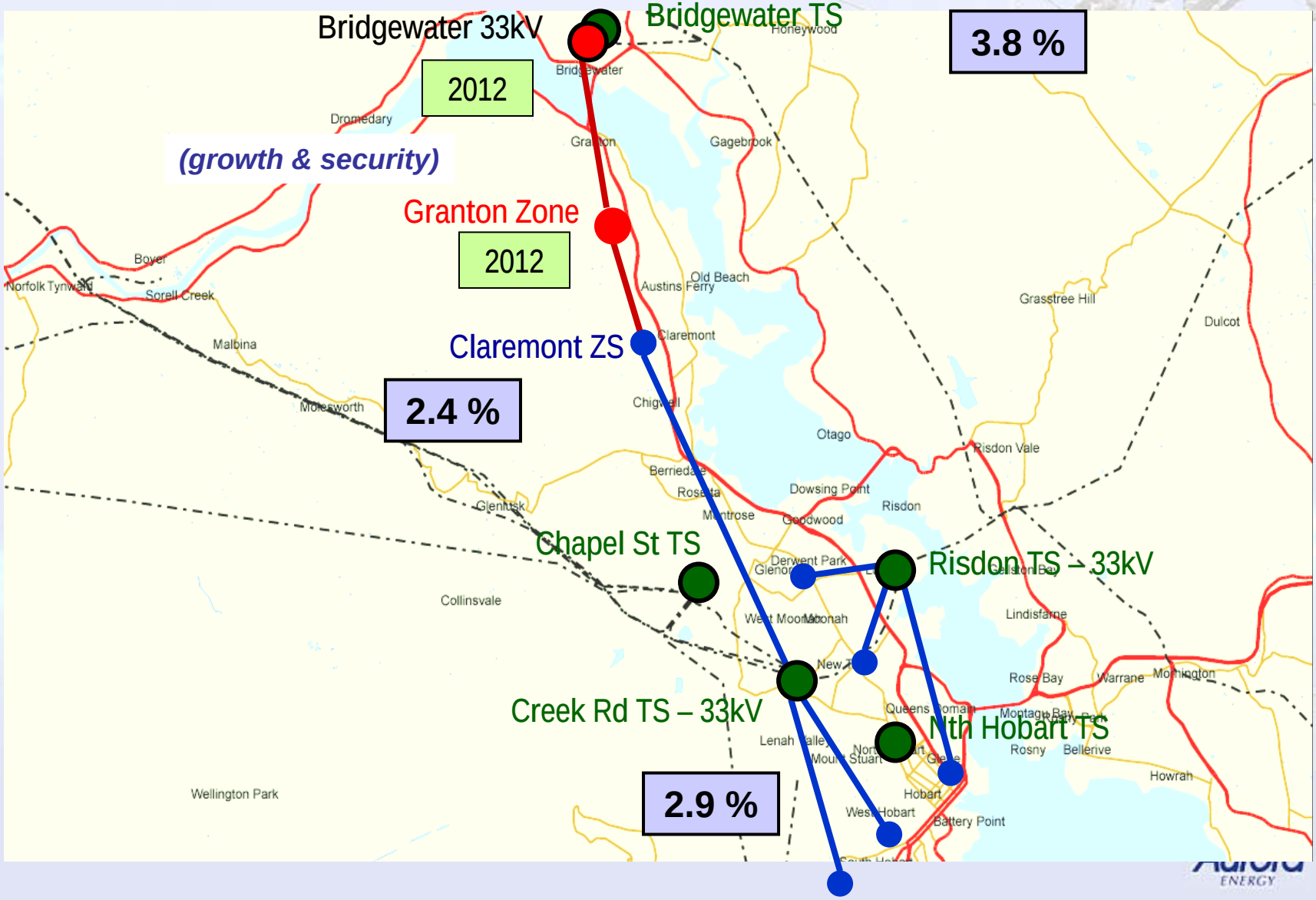
HES - proposed subtransmission network



HES - long term subtransmission network

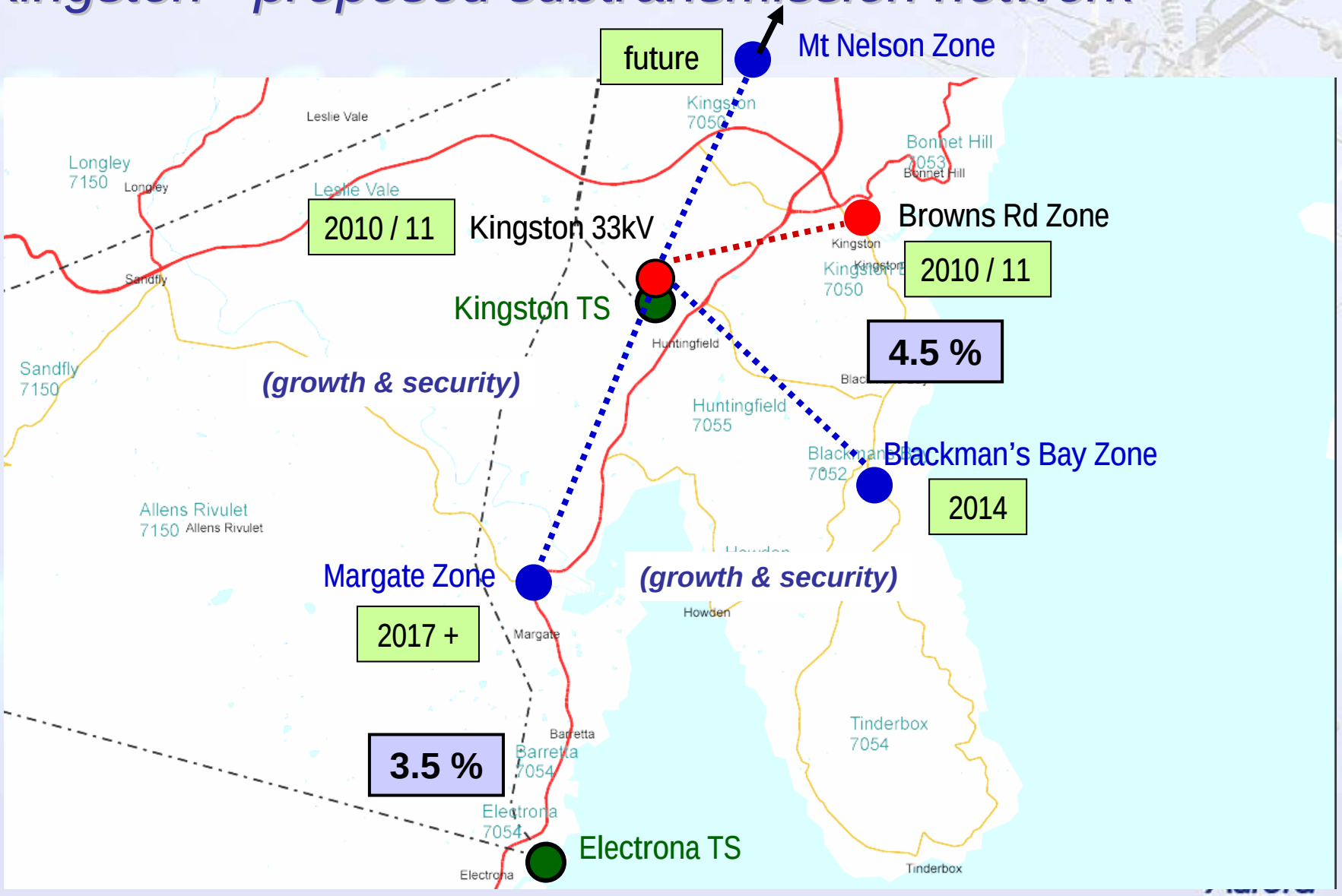


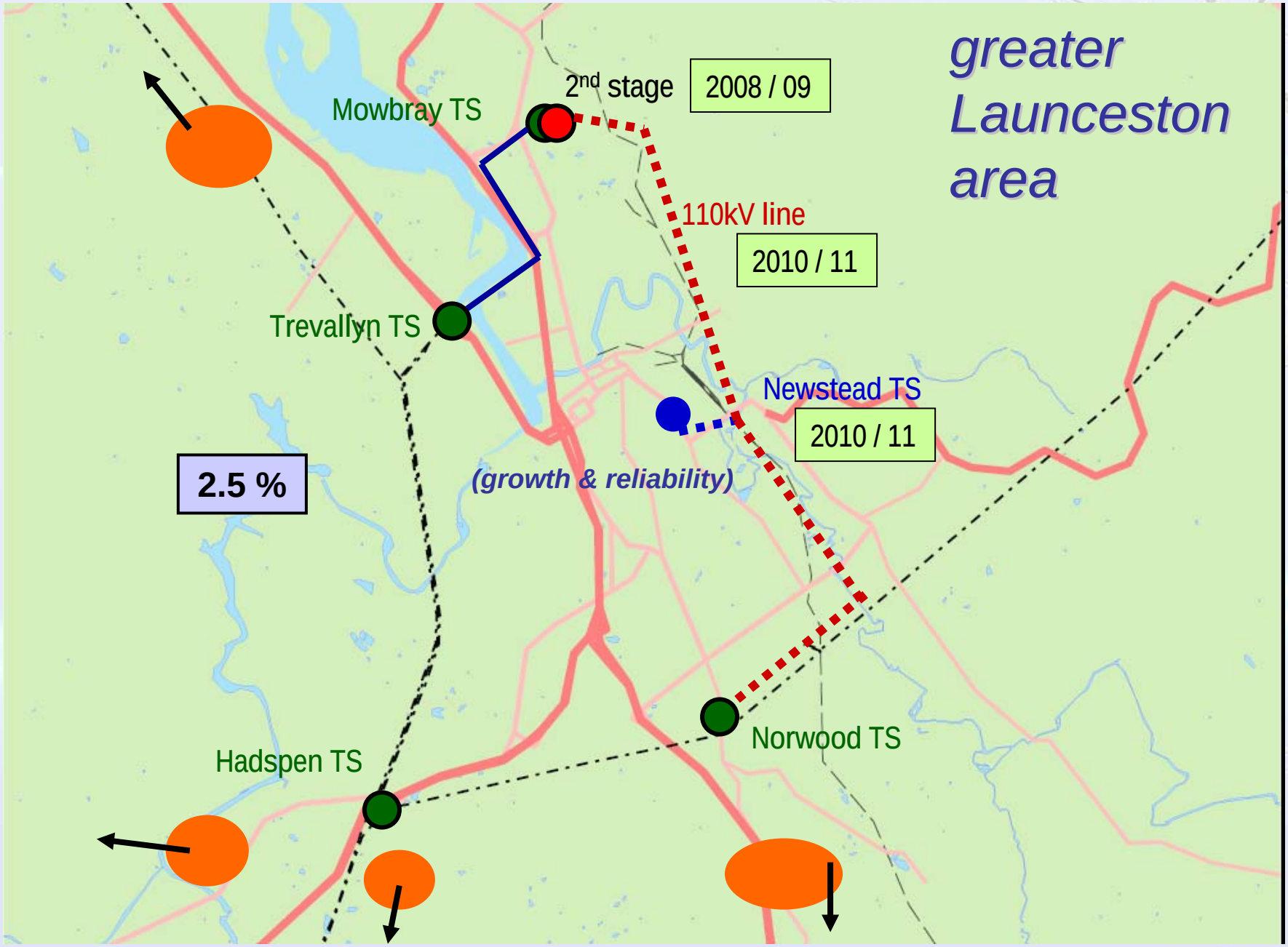
HWS - proposed subtransmission network



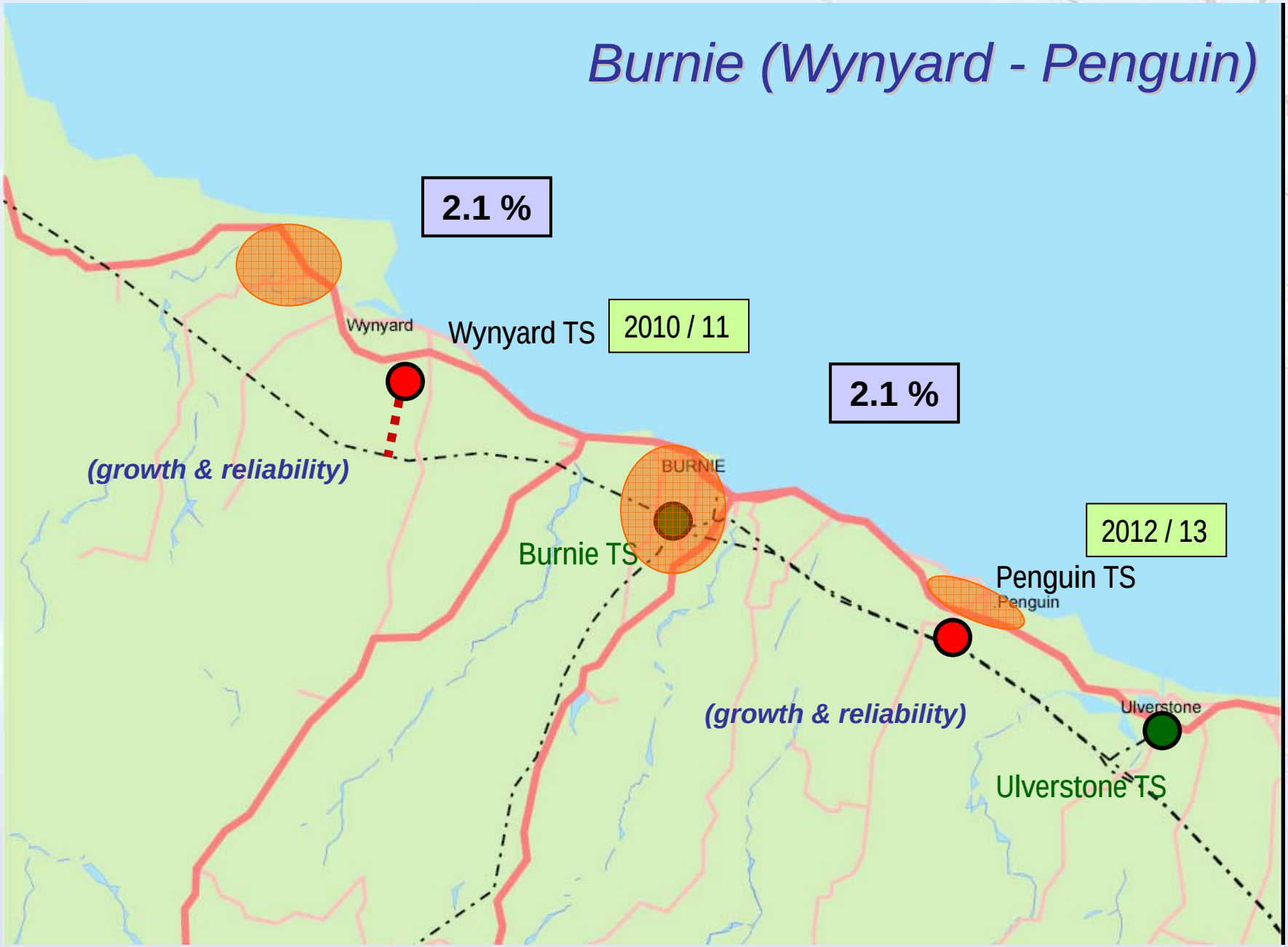
HWS – long term subtransmission network

Kingston - proposed subtransmission network

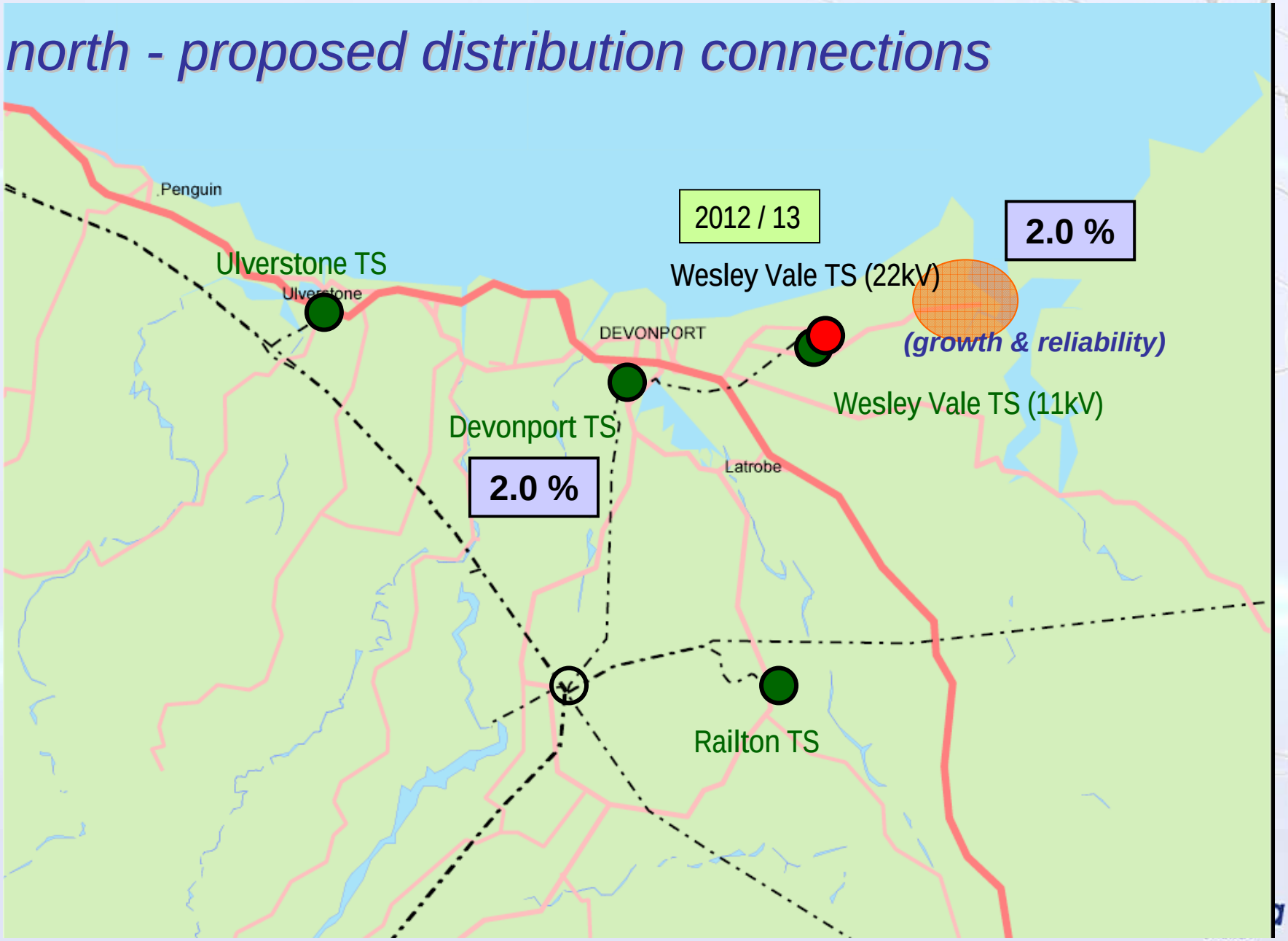



greater Launceston area
2nd stage
2008 / 09
Mowbray TS
110kV line
2010 / 11
Trevallyn TS
Newstead TS
2010 / 11
2.5 %
(growth & reliability)
Norwood TS
Hadspen TS

Burnie (Wynyard - Penguin)



north - proposed distribution connections



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