New Zealand's EnergyScape

Scope verification with MED

Andrew Campbell – CRL Energy
Rilke de Vos – NIWA

21st June 2007

Outline

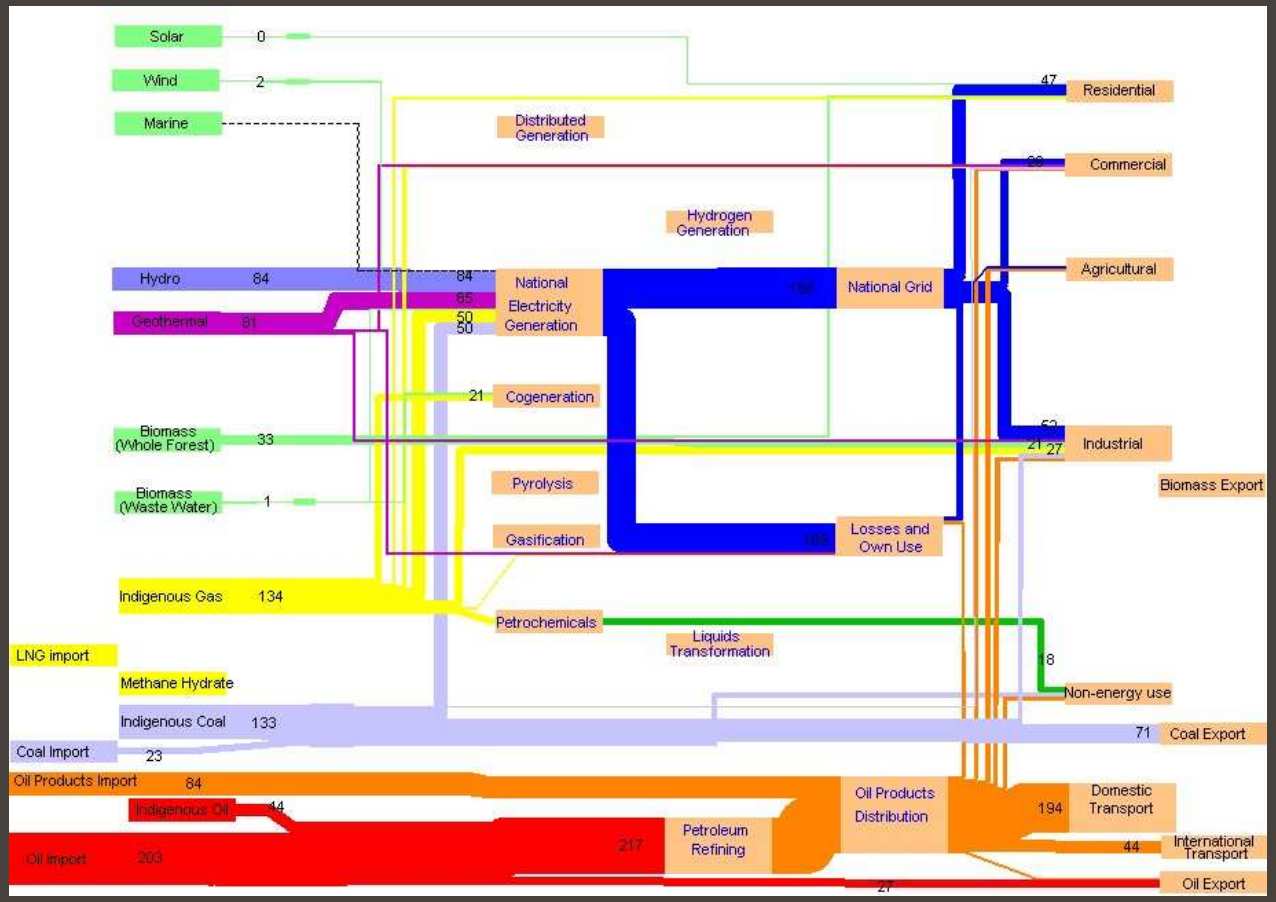
2000 2005 2030 2050

- EnergyScape intentions
- EnergyScape data framework
- MED outcomes
- Help from MED
- Questions

EnergyScape intentions

2000 2005 2030 2050

1. Improve our understanding of NZs energy system
   - Data framework for resources, transport, infrastructure and demand
   - Update of available technologies



- Visual display of energy flows, infrastructure cost, risk profile and GHG footprint (2005, 2030,2050)
- Evaluation of various future ‘themed’ scenarios

EnergyScape intentions

2000 2005 2030 2050

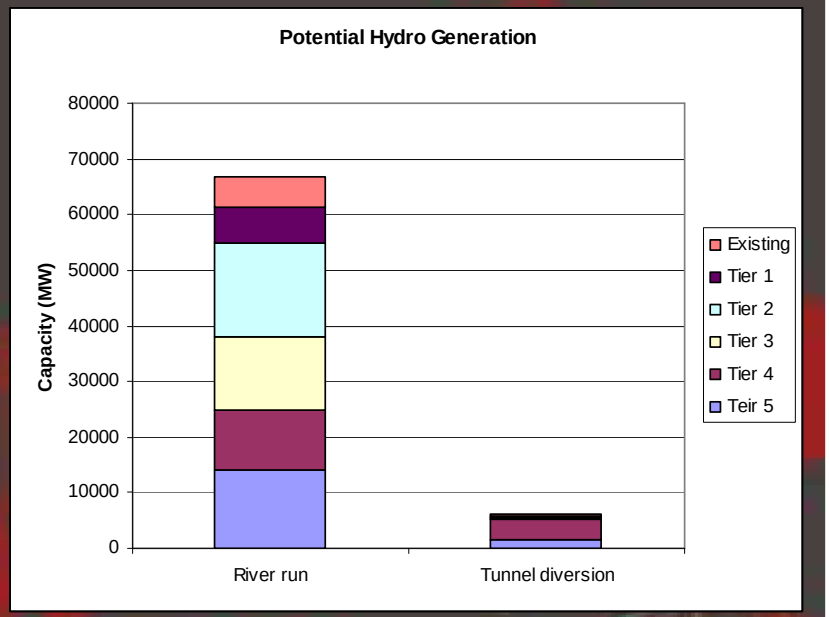
2. Identify energy related research requirements
   - Identify requirements to achieve ‘themed’ scenarios
   - Risk profile and ‘research gap analysis’

And along the way, provide “myth busting” …
   - Abundance
   - Variability impacts
   - Greenhouse gas
   - Land-use competition

EnergyScape data framework

2000 2005 2030 2050

- Simple database
  - All items treated as discrete assets
  - Phased behavior
    - Capacity (rated & firm capacity)
    - Capital / operating cost
    - GHG and risk profiles

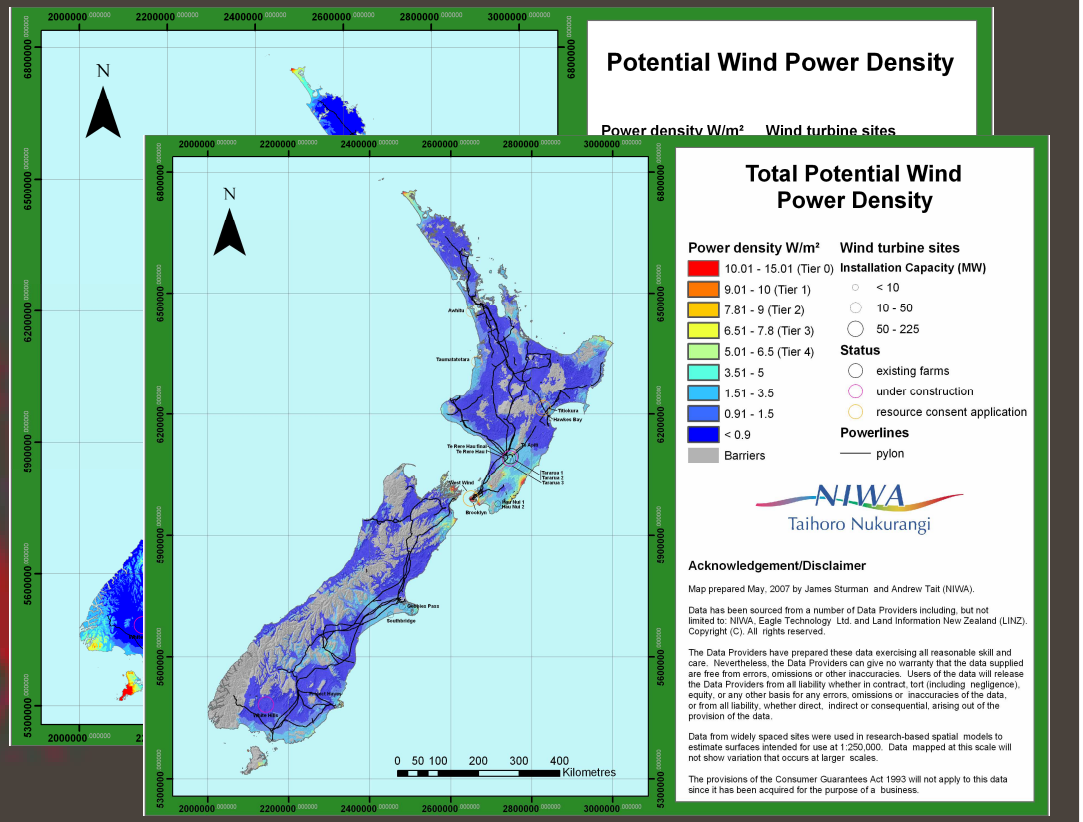


- Complete energy pathways
  - Robust mechanism for identification of key pathways
  - Key pathways must be sufficiently detailed
  - Pull back for NZ overview
  - Substitution and conversion costs

EnergyScape data framework

2000 2005 2030 2050

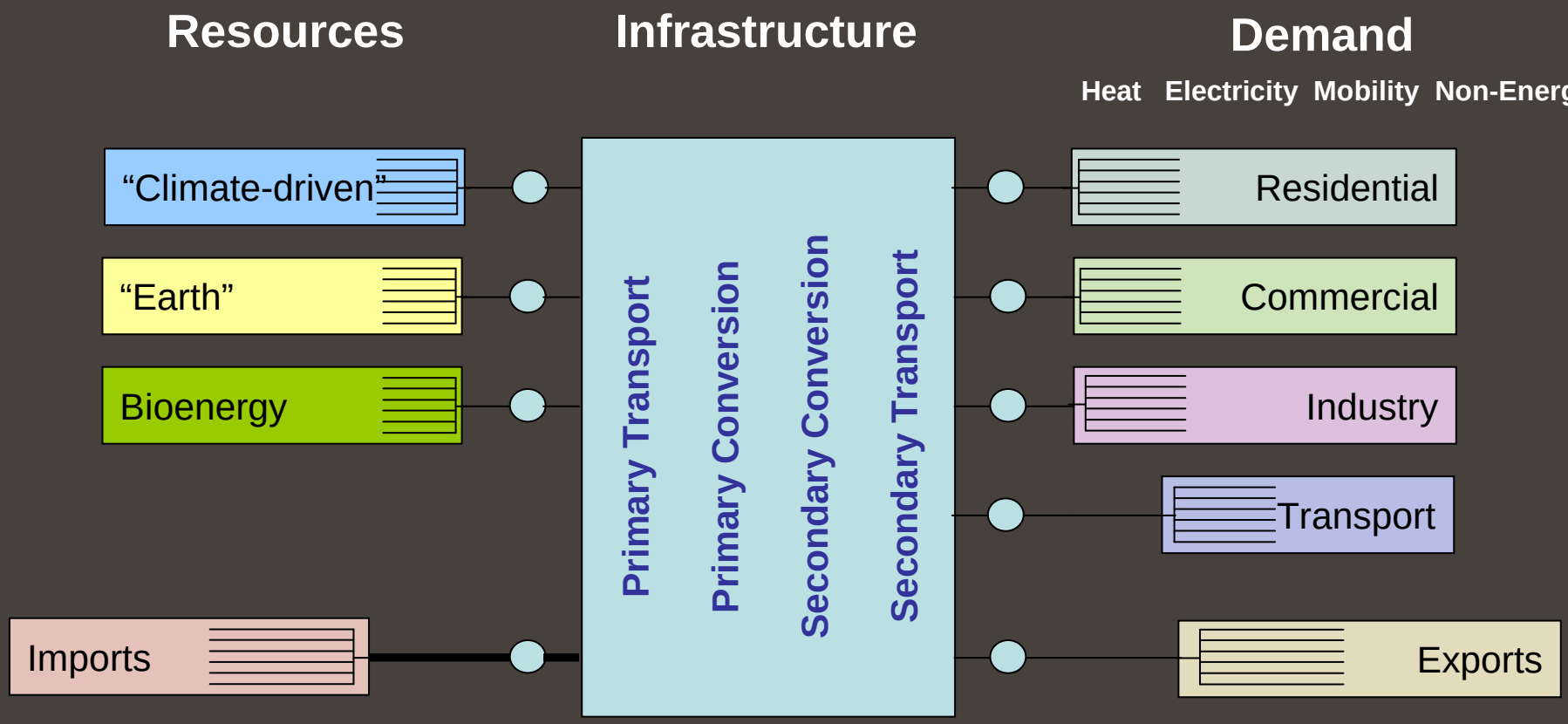
- Update of resources
  - Realisable
  - Variability
  - Conversion efficiencies
- Infrastructure
  - Installation date
  - Cost / GHG / Risk
  - Conversion efficiency
  - New and upgrades
- Demand
  - Regionalise and forecast by proxy
  - Key pathways must be sufficiently detailed
  - Re-regionalise and divide (heat, electrical, mobility)



‘Simple’ data framework

2000 2005 2030 2050

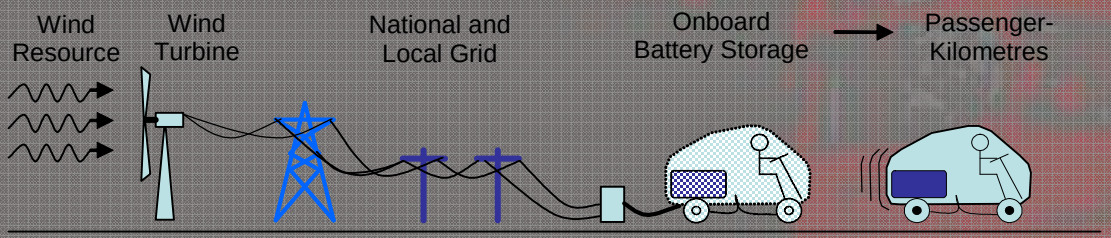
- “Tap manipulation” concept
  - Strictly energy and non-optimising



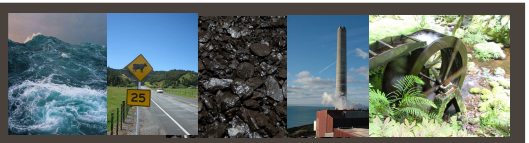
MED outcomes

2000 2005 2030 2050

- Broader exposure of MED role & data
- Alternative presentation concepts
- Influence on research direction
- Generate a framework that can support roadmap decisions

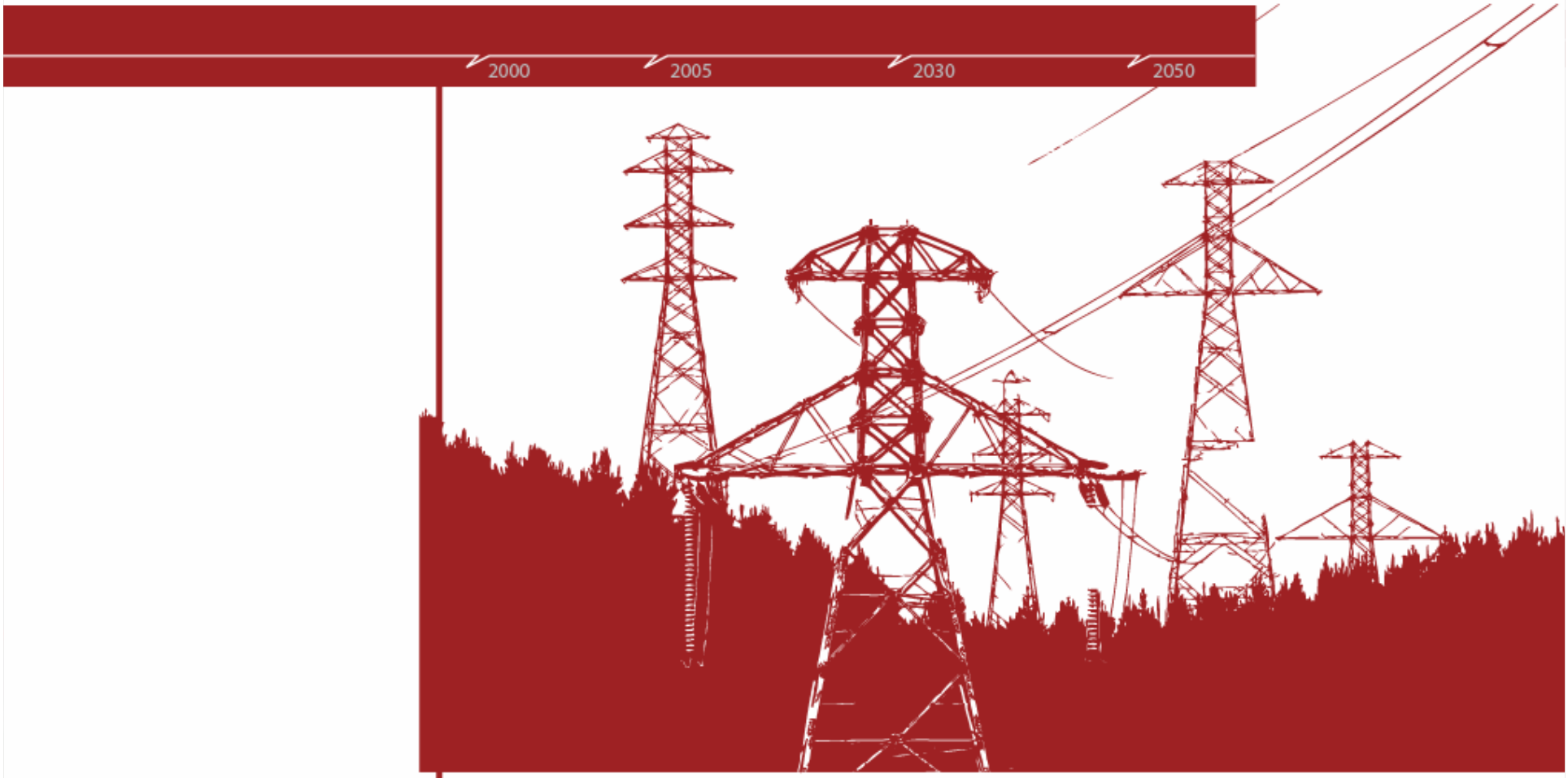


Help from MED



2000 2005 2030 2050

- Regional breakdown of energy demand?
- Consumption from key end-users & generation from generators?
- Net Vs Gross basis?
- Availability of forest planning?
- Availability of transport (VFM) data?
- Chairing of stakeholder meetings?



Further Questions?