



The Business of
Marine Energy

Oceania Room | Te Papa Tongarewa | Wellington



Considerations for commercialising new forms of energy in NZ

Chris More - Meridian Energy Ltd

AWATEA conference 2011
Wellington

26 May 2011

Disclaimer



- The views expressed here are solely that of the presenter and not necessarily the views of Meridian Energy Limited.
- Neither the presenter nor Meridian Energy Limited warrants the accuracy, completeness or usefulness for any particular purpose the information within this presentation or expressed verbally.
- Neither the presenter nor Meridian Energy Limited accepts any liability for any loss or damage, however caused, from the reliance on or the use of that information or arising from the absence of information or any particular information in this presentation or expressed verbally.

Introduction



.....

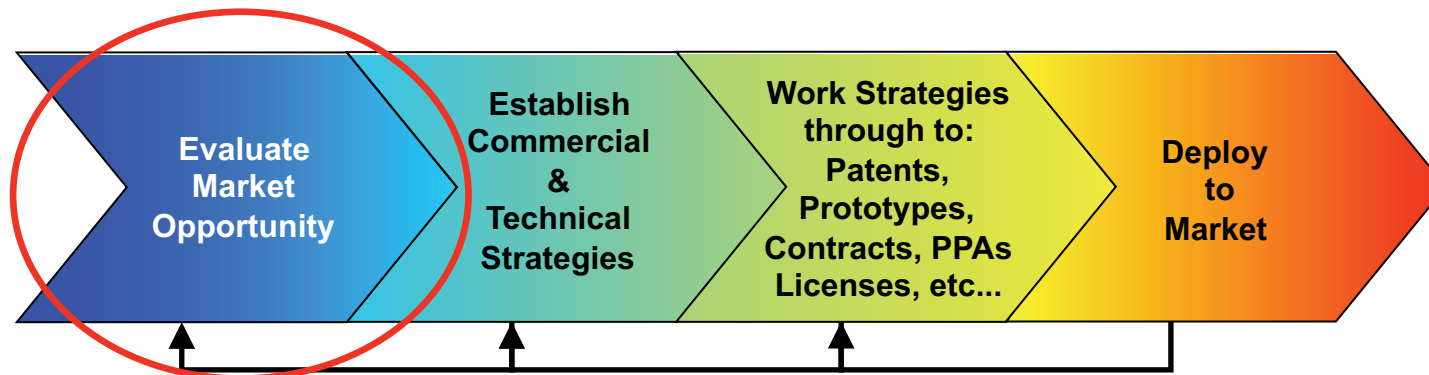
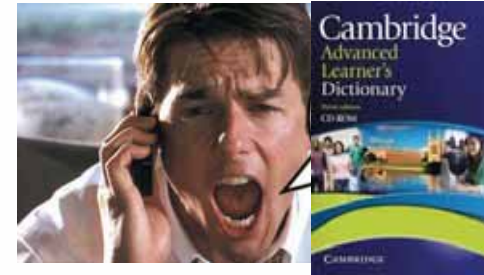
This presentation is structured in the following way:

- What do we mean by commercialise?
- What does the NZ demand opportunity look like?
- How do we compare the future cost of supply across technologies?
- What does the spot market look like on a daily basis?

What do we mean by commercialise?

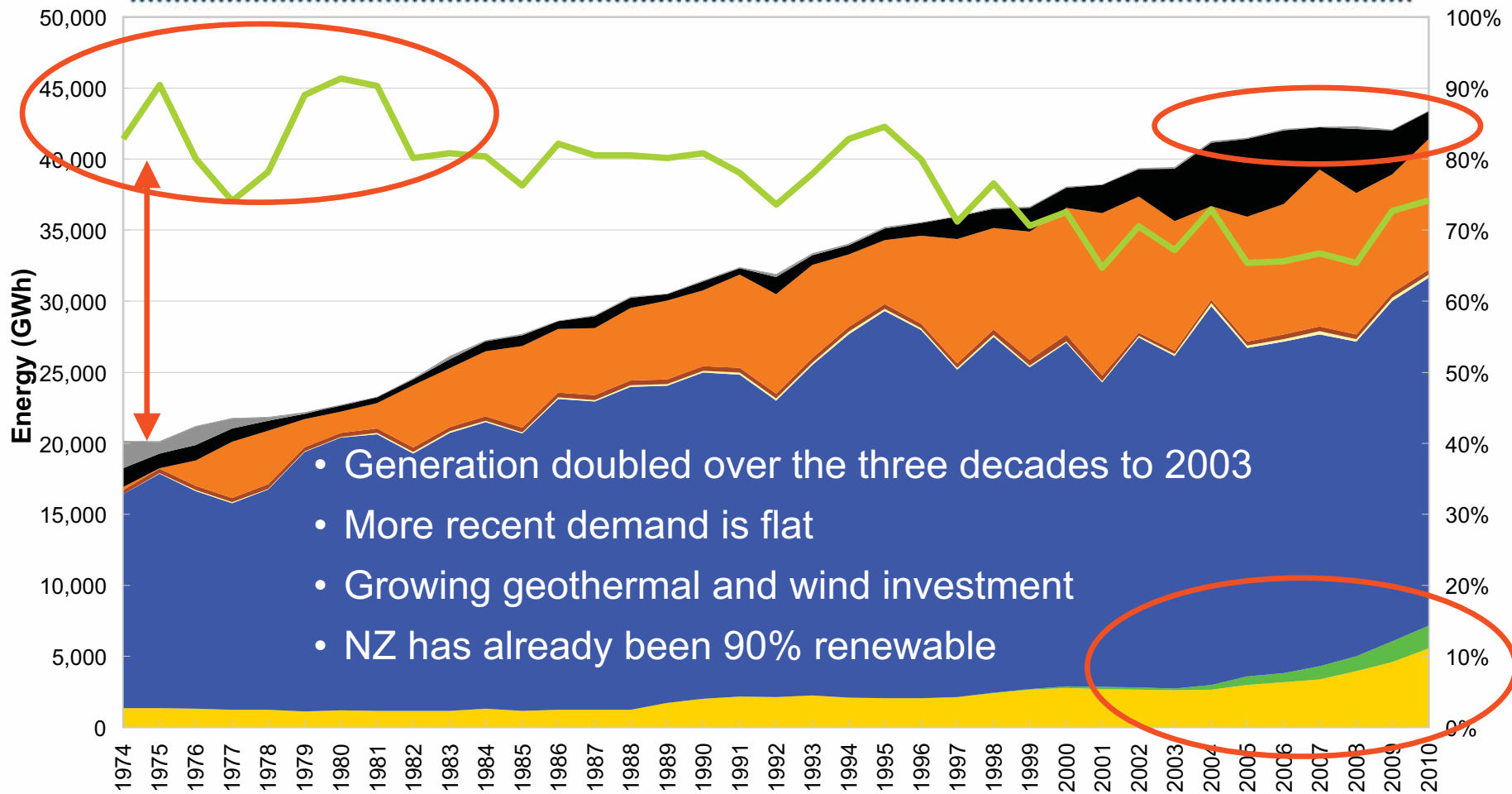
What do we mean by commercialise?

- To organise something to make a profit (Cambridge)
- A Jerry Maguire moment *'show me the money'*
- To systematically develop the entire 'entity' with parallel paths for technical and commercial streams

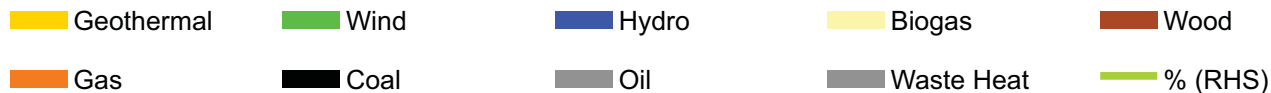


What does the NZ demand opportunity look like?

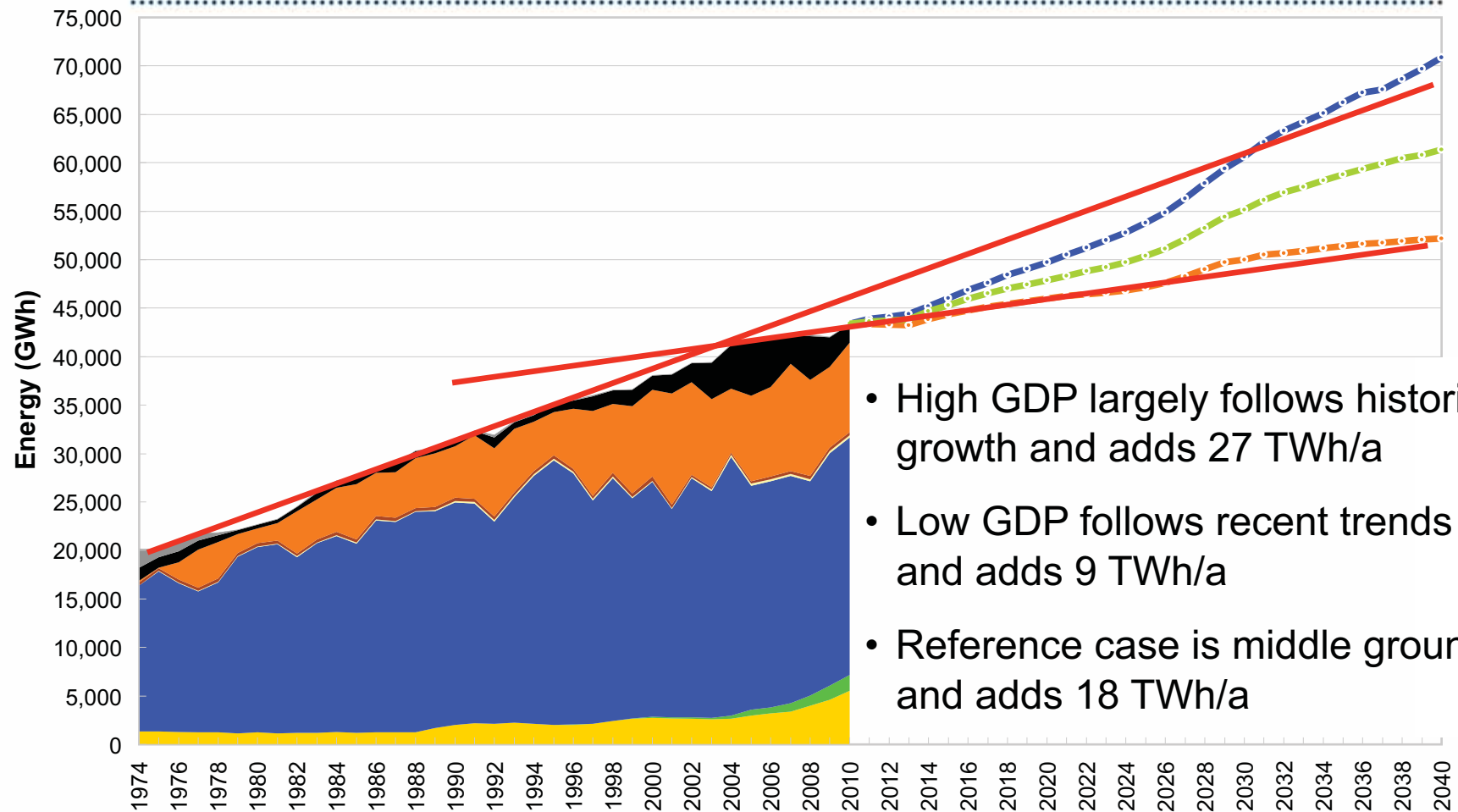
Historic annual generation to meet demand by fuel type



Source: MED Energy Data File 2010, ISSN 1177 - 6684



Forecast annual demand scenarios...



- High GDP largely follows historic growth and adds 27 TWh/a
- Low GDP follows recent trends and adds 9 TWh/a
- Reference case is middle ground and adds 18 TWh/a

Source: MED Energy Data File 2010, ISSN 1177 – 6684 | MED Energy Outlook 2010, ISSN 1179 – 4011

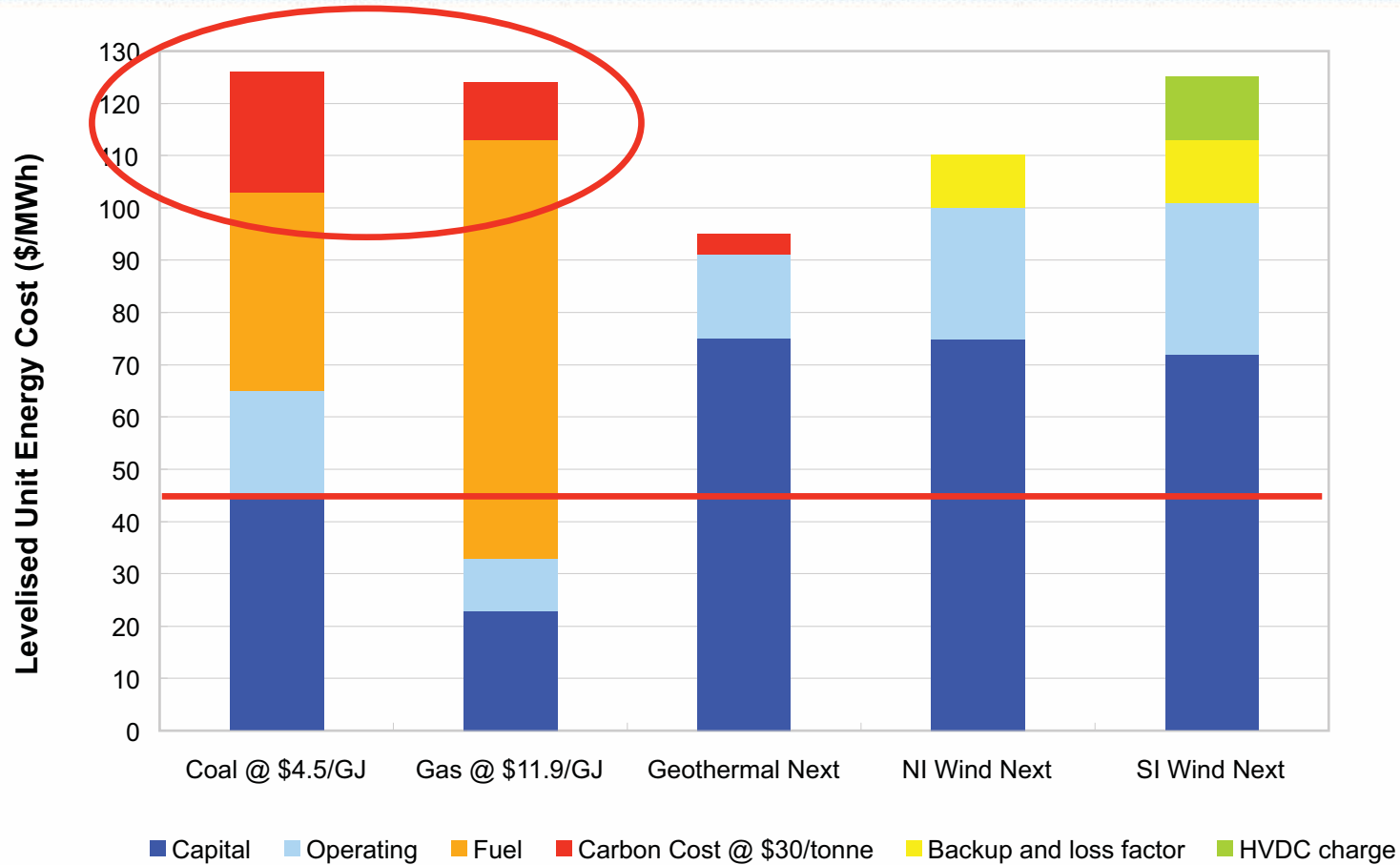
How do we compare the future
cost of supply across
technologies?

How do we compare the future cost of supply across technologies?



- One method commonly used is the Levelised Unit Energy Cost approach (LUEC)
- Direct comparison across a range of technologies, by allowing for:
 - Capacity factor
 - Fuel resource
 - Capital costs
 - WACC
 - O&M profile
 - Operating life
 - Tax, depreciation, etc.
- The above is ranked in almost the order of importance.

How does Infratil compare the future cost of supply across technologies?



Source: Infratil, March 2011, Issue No.33, page 13



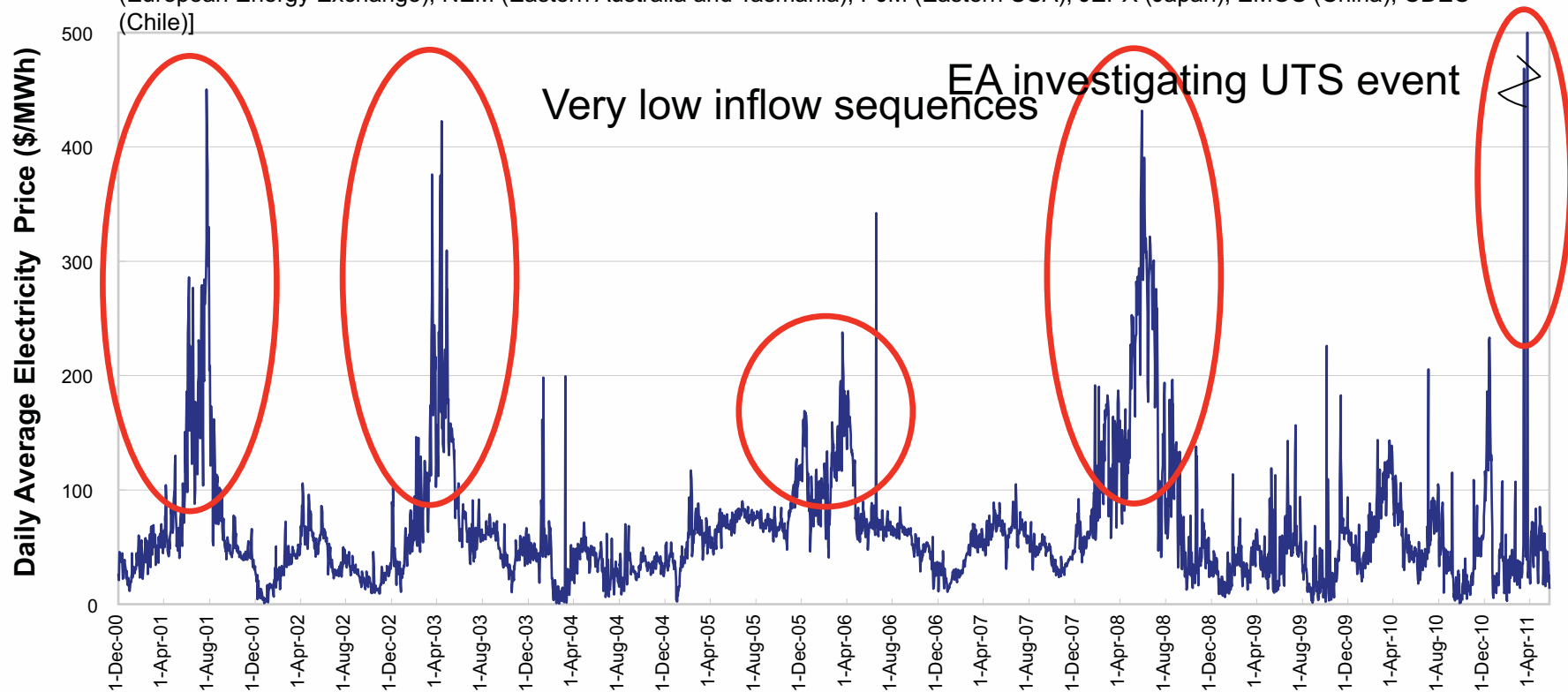
The Business of
Marine Energy

What does the spot market look like on a daily basis?

NZ spot market unique in the world

•‘New Zealand has one of the most volatile electricity spot market’s in the world’ – NZIER November 2007 compared eight markets

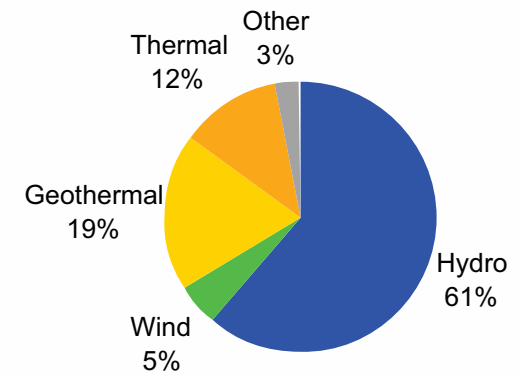
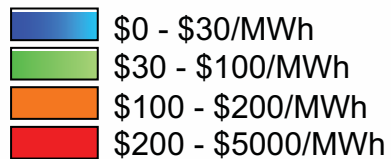
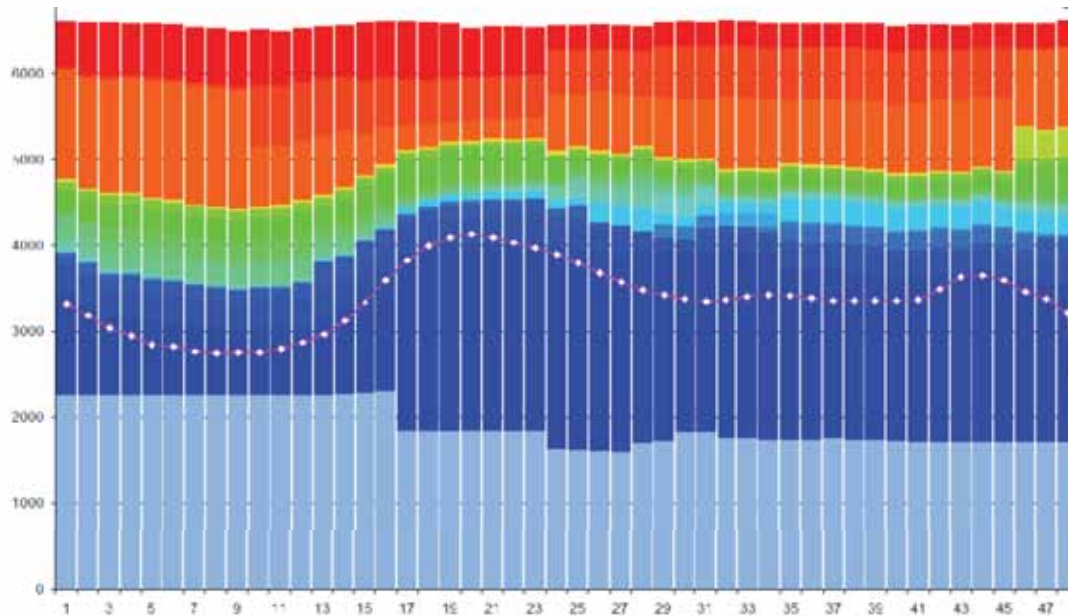
[BETTA (England, Wales and Scotland), Nord Pool (Norway, Denmark, Sweden, Finland and Germany), EEX (European Energy Exchange), NEM (Eastern Australia and Tasmania), PJM (Eastern USA), JEPX (Japan), EMOS (China), CDEC (Chile)]



Christmas Day – lowest demand day last year

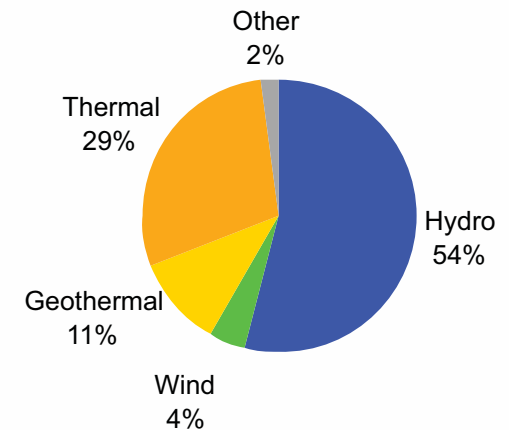
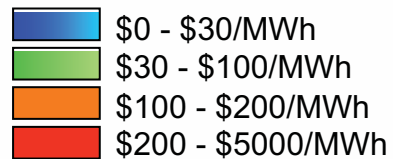
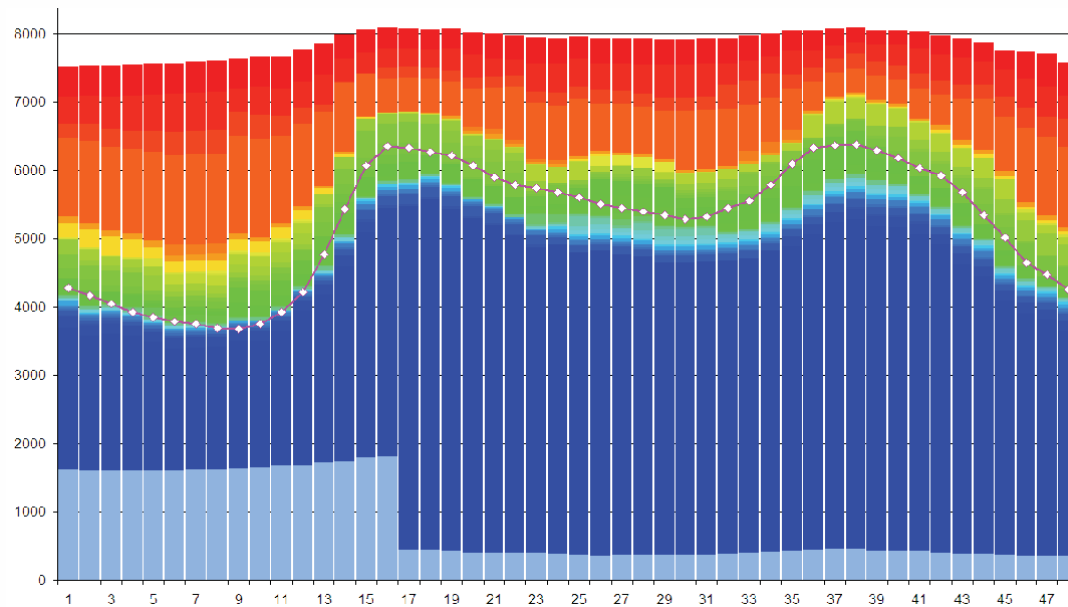


Lowest demand day last year - 25 December 2010, 82.50 GWh, \$5.25/MWh



Winter – highest demand day last year

Highest demand day last year – 12 August 2010, 124.08 GWh, \$89.49/MWh





meridian

Summary

26 May 2011

Summary



- NZ demand forecasts indicate growth across most scenarios and renewable generation is supported by Government through the National Energy Strategy and National Policy Statement frameworks.
- Organise your development to make a profit, by working towards a competitive LUEC position with respect to other technologies.
- Understanding the complex and volatile spot market will greatly help you with your commercial strategies and negotiations.
- Great information available online from the Electricity Authority and the Ministry for Economic Development.



The Business of
Marine Energy

Oceania Room | Te Papa Tongarewa | Wellington