



MAJOR ELECTRICITY  
USERS' GROUP

**NZ Wind Energy Association Workshop**  
**The Electricity Sector in 2013**  
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What will the electricity sector look like in 2020, 2025, 2030 and 2035?

**The future for energy intensive industries**

- An overview of the energy intensive industries
  - Factors important to the C&I sector

## An overview of energy intensive industries

| Member (GWh ranked) | Grid connected | Generator | Direct market participant | IR provider |
|---------------------|----------------|-----------|---------------------------|-------------|
| PacAl               | Yes            |           | Yes                       |             |
| NZ Steel            | Yes            | Yes       | Yes                       | Yes         |
| Fonterra            |                | Yes       |                           | Yes         |
| Oji FS              |                | Yes       |                           | Yes         |
| Pan Pac             | Yes            | Yes       | Yes                       | Yes         |
| NST                 | Yes            | Yes       |                           | Yes         |
| PEL                 |                |           |                           |             |
| Refining NZ         |                |           |                           |             |
| WPI                 | Yes            |           | Yes                       | Yes         |
| Oceana Gold         |                |           |                           |             |
| Whakatane Mill      |                | Yes       |                           |             |
| Ravensdown          |                | Yes       |                           |             |
| Lion                |                |           |                           |             |
| Business NZ         |                |           |                           |             |
| WPMA                |                |           |                           |             |

| MEUG estimates              |        | NZ   | MEUG   | Pct.  |
|-----------------------------|--------|------|--------|-------|
| Gross Demand                | GWh pa | 41.0 | 10.6   | 26%   |
| Energy costs (retail incl.) | \$b pa | 3.25 | > 0.5  | > 18% |
| TPNZ charges (excl. gen)    | \$b pa | 0.76 | 0.11   | 15%   |
| EDB charges                 | \$b pa | 1.56 | 0.02   | 1%    |
| Total costs                 | \$b pa | 5.91 | > 0.60 | > 10% |

|                    |        |    |   |     |
|--------------------|--------|----|---|-----|
| EECA levies        | \$m pa | 13 | 3 | 26% |
| EA levies (direct) | \$m pa | 78 | 8 | 10% |

Energy intensive industries use electricity, generate electricity (gas, wood waste, geothermal), supply IR, participate in the Dispatchable Demand regime, use demand side response for high spot prices and to manage interconnection costs.

Buy (and sell) ASX futures and options, CfD and FPVV products, are direct market participants and contract with retailers.

Are connected to the grid and all 29 distributors.

Have a mix of ownership arrangements: Listed, privately owned and co-operative.

Highly incentivized to use electricity efficiently as they are price takers. Both technically and business innovators.

In summary energy intensive industries are a representative sample of the Commercial & Industrial (C&I) sectors.

## Factors important to the C&I sector

|   | 1995<br>-20 years  | 2015-16<br>Today   | 2035<br>+20 years  |
|---|--|--|--|
| <b>Operating decisions</b><br>Near term focus on lowest cost production to meeting orders<br>Electricity: | Continuous improvement a necessity not a luxury  |  |  |
| <ul style="list-style-type: none"> <li>Energy costs and reliability</li> </ul>                            | Better than Cabinet setting prices but still weak competition. Many dry year risk events.  | More choice and competition and vastly improved dry year risk management. Into continuous improvement phase. | Market prices set by both S & D. Many more choices to manage energy portfolio. |
| <ul style="list-style-type: none"> <li>Line costs and reliability</li> </ul>                              | Light handed regulatory regime   | Part 4 experiment  | Consumer specific link between price and quality trade-off                     |
| <ul style="list-style-type: none"> <li>Management style</li> </ul>  | Procurement  | In transition  | Risk management  |
| <b>Investment/divestment decisions</b><br>Long term product demand and prices<br>Electricity:             | Global market demand trends key driver.<br>Some things remain the same: NZ's temperate climate (windy and rainy), remoteness from overseas markets and small domestic market in some cases a barrier to global scale manufacturing being established and retaining skilled staff.<br>Stable government with independent regulators and judiciary.<br>These factors also influence electricity suppliers. |  |  |
| <ul style="list-style-type: none"> <li>Forecast energy prices</li> </ul>                                  | Trend was upwards  | Trend now flat   | Wide range of scenarios  |
| <ul style="list-style-type: none"> <li>Forecast line charges</li> </ul>                                   | Trend was upwards  | 5 year steps down<br>Pricing about to be solved.   | Fewer monopoly lines services?   |