Renewable Energy Data Collection in New Zealand

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Ministry of Business, Innovation and Employment
## Size of New Zealand’s Renewables Energy Supply

### Annual electricity generation and consumption

<table>
<thead>
<tr>
<th>Calendar year</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Generation (GWh)(^{1,2})</td>
<td>43,045</td>
</tr>
<tr>
<td>Hydro</td>
<td>24,965</td>
</tr>
<tr>
<td>Geothermal</td>
<td>7,453</td>
</tr>
<tr>
<td>Biogas</td>
<td>278</td>
</tr>
<tr>
<td>Wood</td>
<td>331</td>
</tr>
<tr>
<td>Wind</td>
<td>2,178</td>
</tr>
<tr>
<td>Solar(^3)</td>
<td>72</td>
</tr>
<tr>
<td>Oil</td>
<td>4</td>
</tr>
<tr>
<td>Coal</td>
<td>1,132</td>
</tr>
<tr>
<td>Gas</td>
<td>6,578</td>
</tr>
<tr>
<td>Waste Heat(^4)</td>
<td>55</td>
</tr>
<tr>
<td>Renewable Share (%)</td>
<td>82.0%</td>
</tr>
</tbody>
</table>


### 40% Renewable Energy Generation

### 82% Renewable Electricity Generation

Basic Structure of New Zealand’s Electricity Sector

Industry Oversight by Electricity Authority

Generators

- 5 Major Generator Companies

National Transmission

- 1 National Transmission Company

Local Distribution

- 29 Local Distribution Companies
- 2,017,761 Installation Control Points

Consumers
Identifying Renewable Energy Supply

Distributed Generation that can potentially flow *into* the Electricity Grid:

- Needs to be installed by a certified by a Registered Electrician
- Local Distributor Company Notified of Connection to their Network and potential electricity flow into it.
- Electricity Authority notified of connection having distributed power source on it.
- Ministry of Business, Innovation and Employment notified of connection having distributed power source on it.
  - *We send connection a survey about their installed generation capacity.*
Data Collections by Renewable Source Type

• Hydro Generation:
  • Distributed Generation: Annual Survey of Generation Capacity, Monthly Generation from Electricity Authority
  • Off-grid: Small residential? Very minor. If not feeding into the National Grid, not concerned about data collection

• Geothermal
  • Distributed Generation: Annual Survey of Generation Capacity, Monthly Generation from Electricity Authority
  • Direct Use: Some use for residential / commercial heating. Data collected annually from relevant local authorities.

• Wood
  • Co-generation: Annual Survey of Generation Capacity, Monthly Generation from Electricity Authority from a small number of large commercial producers.
  • Industrial Processes and Heat: Measures of woody biomass consumption by Scion - a Crown research institute that specialises in research, science and technology development for the forestry, wood product, wood-derived materials, and other biomaterial sectors.
  • Residential Direct Use: Estimated regionally from population estimates and Census wood fuel consumption.
Data Collections by Renewable Source Type

- Wind
  - Distributed Generation: Annual Survey of Generation Capacity, Monthly Generation from Electricity Authority
  - Off-grid: Small residential / maritime. Very minor. If not feeding into the National Grid, not concerned about data collection

- Solar
  - Solar Thermal: Not a metered data source. Rough estimates based on NZ Customs imports of thermal sells and 2013 retailer data

- Biogas

- Bioethanol / Diesel
  - Imports: Fuel volumes captured from NZ Customs data.
Questionnaires We Use

Annual Generation Survey

Microsoft Excel Worksheet

Renewables

Microsoft Excel Worksheet