



**MINISTRY OF BUSINESS,  
INNOVATION & EMPLOYMENT**  
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# Renewable Energy Data Collection in New Zealand

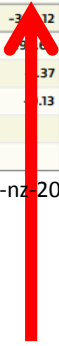
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# Size of New Zealand's Renewables Energy Supply

	COAL			OIL								NATURAL GAS	RENEWABLES								ELECTRICITY	WASTE HEAT	TOTAL			
	Bituminous & Sub-bitum.	Lignite	Total	Crudes/Feedstocks/NGL	LPG	Petrol	Diesel	Fuel Oil	Av. Fuel/Kero	Others	Total		Total	Hydro	Geothermal	Solar	Wind	Liquid Biofuels	Biogas	Wood				Total	Total	Total
<b>Indigenous Production</b>	68.13	4.78	72.91	74.16	8.33							196.79	93.26	201.84	0.55	8.32	0.13	2.71	58.27	365.08		1.41	718.68			
+ Imports	10.16	0.00	10.16	245.19	1.20	44.16	47.51	-	9.84	5.90	353.80												363.96			
- Exports	37.83	-	37.83	66.27	1.22	-	-	5.10	-	-	72.58												110.41			
- Stock Change	-6.94	0.10	-6.85	-1.56	0.00	2.03	2.23	4.60	-0.61	2.05	8.74	0.97											2.86			
- International Transport						0.00	1.88	11.26	48.56	-	61.70												61.70			
<b>TOTAL PRIMARY ENERGY</b>	47.40	4.69	52.09	254.64	8.30	42.13	43.40	-20.95	-38.10	3.85	293.27	195.82	93.26	201.84	0.55	8.32	0.13	2.71	58.27	365.08		1.41	907.68			
<b>ENERGY TRANSFORMATION</b>	-26.28	-0.29	-26.58	-252.55	-0.00	69.83	83.74	26.82	53.64	6.56	-11.96	-56.36	-93.26	-194.19	-0.19	-8.32	-0.13	-2.38	-4.66	-3.12		141.44	-1.41	-257.99		
• Electricity Generation	-4.84	-	-4.84				-0.02	-			-0.02	-37.76	-93.26	-192.49	-0.19	-8.32		-1.37				148.97		-189.28		
• Cogeneration	-7.24	-0.25	-7.49									-12.88		-1.70				-1.01	-4.66			7.77	-1.41	-21.38		
• Fuel Production				-252.47		69.79	83.87	26.81	53.59	13.80	-4.62													-4.75		
• Other Transformation	-11.70	-	-11.70														-0.13							-11.70		
• Losses and Own Use	-2.50	-0.04	-2.54	-0.08	-0.00	0.04	-0.11	0.01	0.05	-7.24	-7.33	-5.72										-15.30		-30.89		



Source: <http://www.mbie.govt.nz/info-services/sectors-industries/energy/energy-data-modelling/publications/energy-in-new-zealand/documents-images/energy-in-nz-2017.pdf>

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



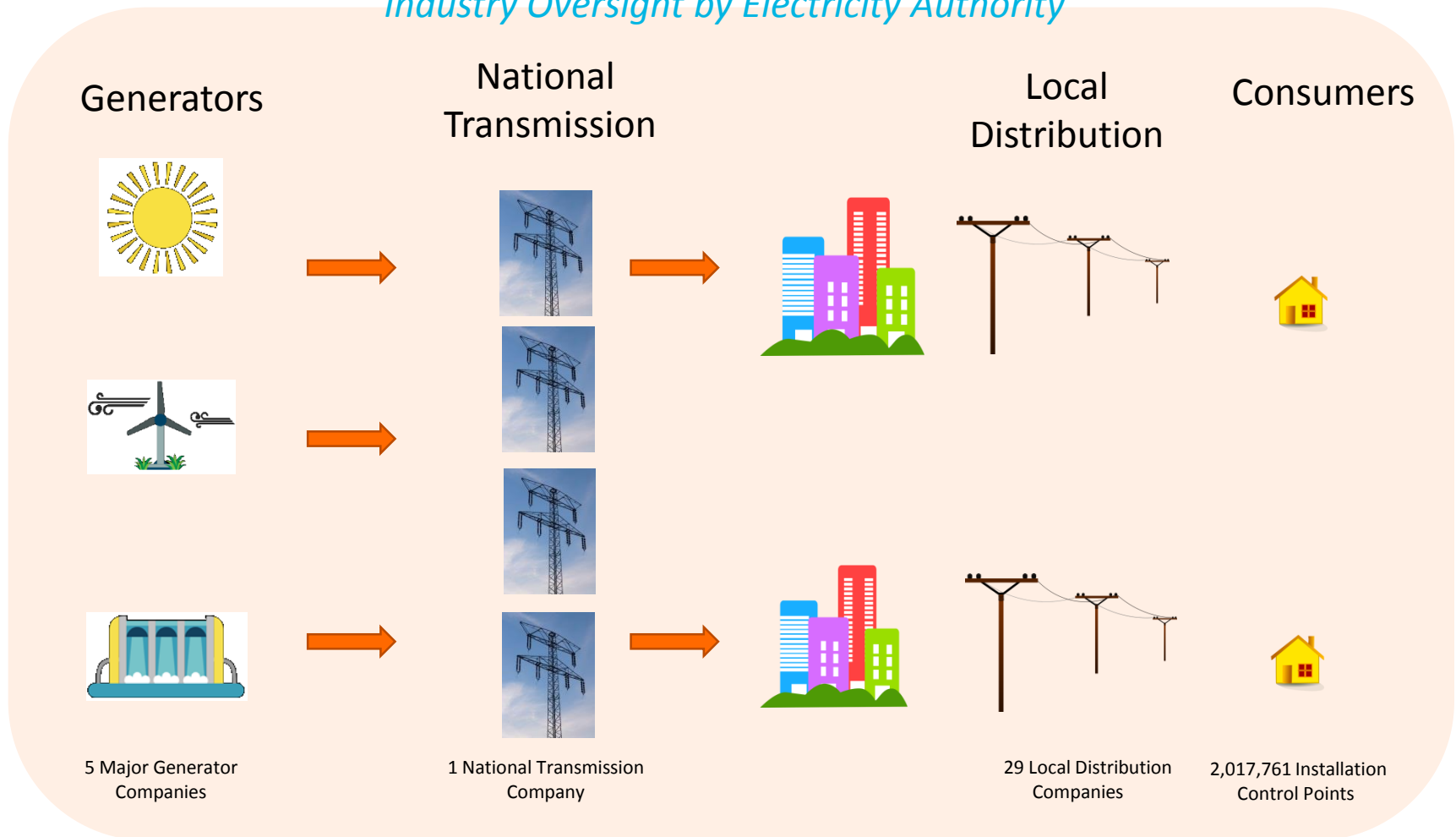
40% Renewable Energy Generation

82% Renewable Electricity Generation

Source: <http://www.mbie.govt.nz/info-services/sectors-industries/energy/energy-data-modelling/statistics/documents-image-library/electricity.xlsx>

# Basic Structure of New Zealand's Electricity Sector

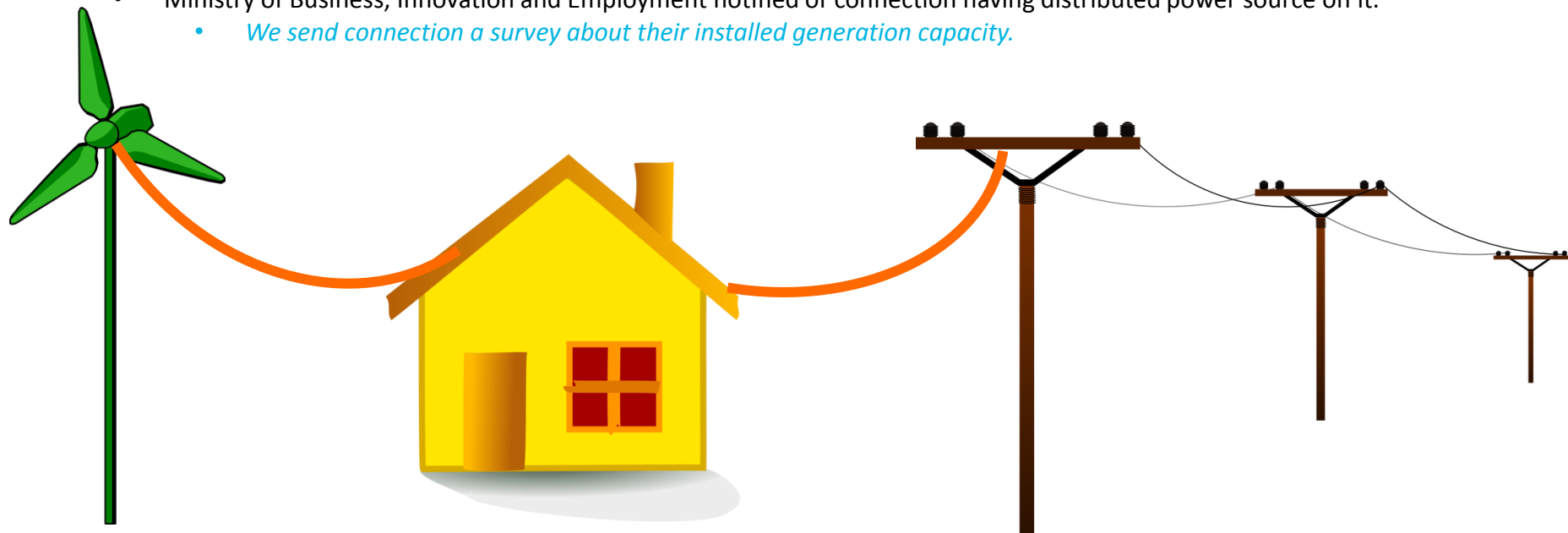
*Industry Oversight by Electricity Authority*



# 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 Photovoltaic: [Monthly Generation estimates from Electricity Authority](#). Not directly surveyed.
  - Solar Thermal: [Not a metered data source](#). *Rough* estimates based on NZ Customs imports of thermal sells and 2013 retailer data
- Biogas
  - Dairy Industry: [Dairy effluent for on-site electricity generation](#). [Annual Survey of Generation Capacity](#).
  - Land Fill: [Annual Survey of Major Landfill Sites](#).
- Bioethanol / Diesel
  - Imports: [Fuel volumes captured from NZ Customs data](#).
  - Domestic Production: [Taxed under Petroleum Engine Fuel Monitoring Levy](#). Data collected from NZ Customs.

# Questionnaires We Use

## Annual Generation Survey



Microsoft Excel  
Worksheet

## Renewables



Microsoft Excel  
Macro-Enabled Workbook

