



Utility Based Financial Incentives for Renewable Energy & Energy Efficiency in New Zealand

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Coverage

Renewable Energy in New Zealand

Utility based Financial Incentives

Government Incentives

Private Sector Initiatives

Market Solutions

Key Points

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Renewable Energy in New Zealand

Existing:

- Hydro, Geothermal, Wind, Biofuels,

Prospective:

- Wind, Biomass,

Potential:

- Solar, Marine

Lots of Options!

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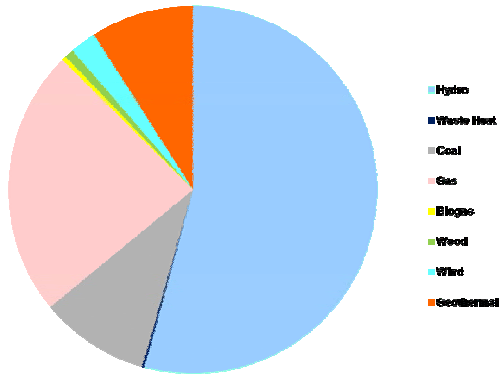


Installed Electricity Capacity, 2008 (MW)

Renewable Capacity	Hydro	5,023	55.0%
	Geothermal	731	8.0%
	Wind	321	3.5%
	Biomass	46	0.5%
	Total	6,120	67.0%
Non-Renewable Capacity	Gas	2,375	26.0%
	Coal	594	6.5%
	Other	46	0.5%
	Total	3,014	33.0%
Total Capacity		9,133	100.0%

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Electricity Generation Q3 2008



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Electricity Generation, 2008 (GWh)

Renewable Generation	Hydro	21,944	51.4%
	Geothermal	3,603	8.4%
	Wind	1,037	2.4%
	Wood	467	1.1%
	Biogas	197	0.5%
	Total	27,251	63.8%
Non-Renewable Generation	Gas	10,961	25.7%
	Coal	4,314	10.1%
	Oil	122.3	0.3%
	Waste Heat	57	0.1%
	Total	15,454	36.2%
Total Generation		42,705	100.0%

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Renewable Energy Introduction in APEC

Mechanisms in Current Use

- Quota schemes,
- Performance based incentives,
- Financial Mechanisms,
- Market based incentives.

Many Options for each Category.

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Ten Renewable Energy Incentive Types

- Feed-in tariffs,
- Renewable Portfolio Standards (RPS),
- Capital subsidies, grants or rebates,
- Investment or other tax credits,
- Tax rebates,
- Tradable RE certificates,
- RE production payments or tax credits,
- Net metering,
- Investment loans or financing,
- Competitive public bidding,

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Financial Incentives for NRE Technologies

Country	Feed-in tariff	Renewable port-folio standard	Capital subsidies, grants, or rebates	Investment or other tax credits	Sales tax, energy tax, or VAT reduction
Australia		*	*		
Canada	(*)	(*)	*	*	*
Chile			*		
China	*		*	*	*
Indonesia	*		*		
Japan	*	*	*		
Korea	*		*	*	*
Mexico				*	
New Zealand			*		
Philippines				*	*
Russia			*		
Thailand	*		*		
United States	(*)	(*)	*	*	(*)

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Financial Incentives for NRE Technologies

Country	Tradable renewable energy certificates	Energy production payments or tax credits	Net metering	Public investment, loans, or financing	Public competitive bidding
Australia	*			*	
Canada			(*)	*	(*)
Chile				*	
China				*	*
Indonesia				*	
Japan	*		*	*	
Korea				*	
Mexico			*		
New Zealand				*	
Philippines				*	
Russia	*				
Thailand			*	*	
United States	(*)	*	(*)	(*)	(*)

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Financial Incentives for NRE Technologies

Economy	Feed-in tariff	Renewable port-folio standard	Capital subsidies, grants, or rebates	Investment or other tax credits	Sales tax, energy tax, or VAT reduction
APEC (13)	53.8%	30.8%	84.6%	46.2%	38.5%
Europe (19)	68.4%	26.3%	84.2%	73.7%	52.6%
Economy	Tradable renewable energy certificates	Energy production payments or tax credits	Net metering	Public investment, loans, or financing	Public competitive bidding
APEC (13)	30.8%	7.7%	38.5%	69.2%	23.1%
Europe (19)	63.2%	15.8%	21.1%	31.6%	26.3%

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Financial Incentives for NRE Technologies

Renewable Energy Incentives, New Zealand

Government Incentives:

- Energy Efficiency and Conservation Authority (EECA),
- Electricity Commission,
- Commerce Commission,

Private Sector Initiatives:

- Electricity Utilities,

Electricity Market Incentives

All operate in New Zealand

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Government Incentives

Energy Efficiency and Conservation Authority (EECA):

- **Energy Wise Grants - Energy Efficient devices**
 - Building insulation,
 - Solar water heating.
- **Start-up Grants for selected NRE**
 - Micro-Hydro.
- **Energy Labelling**

Primarily promotes Energy Efficiency

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Government Incentives

The New Zealand Electricity Commission

Provides Energy Efficiency and DSM Subsidies:

- **Efficient Lighting Strategy,**
 - Energy Efficient Light Bulbs
- **Demand Side Management (DSM),**
 - Direct Drive Electric Motors.

Primarily promotes Energy Efficiency

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Government Incentives

The New Zealand Commerce Commission

Must promote Incentives for DSM In Energy Infrastructure

- **Carrot and Stick regulation**
 - Electricity Lines Companies
 - Promotion of Electric Car infrastructure.

Haven't done much yet – Recent Legislation

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Government Incentives

The New Zealand Biofuels Obligation:

Not Sustainable!

Cheaper to Import both Ethanol and Biodiesel:

- **Potential Impacts on:**
 - Food supply,
 - land use,
- **Detracts from Energy Security,**
- **Minimal fuel substitution.**

This Mandate has been Repealed!

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The Electricity Market

There are three official markets

- The Wholesale Electricity Market,
- The Reserve Market, 50 MW,
- The Frequency Keeping Market, 50 MW,
- 30 min supply bids 24 hrs ahead at 244 nodes.

About 15% of electricity traded, rest on PPAs.

Most Renewable energy is cost competitive

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Private Sector Initiatives

Electricity Utilities

Power Purchase Agreements (PPA's)

- For Wind, Solar, Hydro – “Weather Energies”,
- Electricity generator signs long term PPA,
- PPA used to secure Capital Finance,
- Provides long-term income guarantee

Very effective in promoting RE

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Key Points

- Both Public and Private sector promotion,
- Most aimed at DSM – Energy Efficiency,
- Solar PV not promoted effectively,
- Private sector PPAs, for Wind, Hydro,
- Most Renewable energy is cost competitive.

Financial Incentives limited in New Zealand

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Thank You!

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