

RENEWABLES INTERACTIVE MAP

COUNTRY PROFILE: Norway

1. SUMMARY

1.1 Country Overview

Country size	323 802 km ²
Population	4 660 539
GDP	485 803 000 000
Energy production	213 909 ktoe/year
Energy consumption	NA

1.3 Policies Overview Table

Financial Incentives			Public Financing		Regulatory Policies				
Capital subsidy, grant, or rebate	Tax incentives	Energy production payment	Public investment, loans, or	Public competitive bidding	Feed-in tariff	Utility quota obligation	Net metering	Obligation and mandate	Tradable renewable energy certificate
✓	✓		✓	✓		✓		✓	✓

1.4 RE Status Overview (non-technology specific)

	Primary Energy	Final Energy Consumption	Electricity Production	Heating/Cooling Production	Transportation	RE Installed Capacity
Share		64.5 % 2012	96.6 % 2011			28.795 GW 2009
		64.6 % 2011	95.9 % 2010			
		61.2 % 2010	96.7 % 2009			
		64.8 % 2009				

* = Conflicting data exists (see respective table below)

2. Renewable Energy Policies

2.1 Capital subsidy, grant, or rebate

Sector	Technology	Value	Description	Year	Reference
Non-Sector specific	Non-Technology specific		Capital subsidies exist.	2013	Global Status Report (GSR) 2014. "Country Profile Norway"
Non-Sector specific	Non-Technology specific		Capital subsidy, grant, or rebate exists.	2012	Global Status Report (GSR) 2013. "Country Profile Norway"

2.2 Obligation and mandate

Sector	Technology	Value	Description	Year	Reference
Non-Sector specific	Non-Technology specific		Biofuels mandates exist.	2013	Global Status Report (GSR) 2014. "Country Profile Norway"

Electricity	Non-Technology specific		Biofuel obligation exists.	2012	Global Status Report (GSR) 2013. "Country Profile Norway"
Transport	Biofuels	3.5 %	Obligation and mandate for biofuels.	2010	Biomass Hub. "Norway: Biofuels Blending Mandate Increased Despite Opposition"

2.3 Public competitive bidding

Sector	Technology	Value	Description	Year	Reference
Non-Sector specific	Non-Technology specific		Public competitive bidding exists.	2013	Global Status Report (GSR) 2014. "Country Profile Norway"

2.4 Public investment, loans, or financing

Sector	Technology	Value	Description	Year	Reference
Non-Sector specific	Non-Technology specific		Public investment exists.	2013	Global Status Report (GSR) 2014. "Country Profile Norway"
Non-Sector specific	Non-Technology specific		Public investment exists.	2012	Global Status Report (GSR) 2013. "Country Profile Norway"
Non-Sector specific	Non-Technology specific	25 Billion NOK	Public investment in renewable energy sector.	2009	Ministry of Petroleum and Energy. "Nye 5 milliarder kroner til Fornøybarfondet"

2.5 Tax incentives

Sector	Technology	Value	Description	Year	Reference
Non-Sector specific	Non-Technology specific		Tax reductions exist.	2013	Global Status Report (GSR) 2014. "Country Profile Norway"
Non-Sector specific	Non-Technology specific		Tax reductions exist.	2012	Global Status Report (GSR) 2013. "Country Profile Norway"

2.6 Tradable renewable energy certificate (REC)

Sector	Technology	Value	Description	Year	Reference
Non-Sector specific	Non-Technology specific		Tradable RECs exist.	2013	Global Status Report (GSR) 2014. "Country Profile Norway"
Electricity	Non-Technology specific		Market based instruments to encourage renewable energy production.	2012	Nordic Energy Solutions. "Nordic green power certificates"
Electricity	Non-Technology specific		Electricity Certificates Act: Introduction of a certificate market and a quota system which obliges electricity suppliers and certain electricity consumers to purchase certificates.	2012	ABB. "Norway Energy Efficiency Report 2011"
Electricity	Non-Technology specific		Norway and Sweden intend to expand their electricity production based on renewable energy sources by 26.4 TWh (until 2020), based on a common green certificate market.	2012	Norwegian Water Resources and Energy Directorate. "Energy Certificates"

2.7 Utility quota obligation

Sector	Technology	Value	Description	Year	Reference
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Non-Sector specific	Non-Technology specific		Renewable Portfolio Standards exist.	2013	Global Status Report (GSR) 2014. "Country Profile Norway"
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3. Renewable Energy Targets

3.1 Electricity

Sector	Technology	Value	Description	Year	Reference
Electricity	Wind	26.4 TWh	Renewable energy production due to the common electricity certificate market with Sweden.	2020	Global Status Report (GSR) 2012. "Country Profile Norway"
Electricity	Wind	2 GW	Targeted total installed onshore wind power capacity.	2020	Renewable Energy World. "Norway Approves \$3 Billion for Wind Power Plants to Triple Capacity," 26 August 2013
Electricity	Non-Technology specific	30 TWh	Targeted additional electricity generation from renewable energy.	2016	ABB. "Norway Energy Efficiency Report 2011"
Electricity	Wind	3 TWh	Targeted electricity generation from wind.	2010	Global Status Report (GSR) 2012. "Country Profile Norway"

3.2 Final energy

Sector	Technology	Value	Description	Year	Reference
Non-Sector specific	Non-Technology specific		Targeted carbon-neutrality.	2050	Norwegian Ministry of Petroleum and Energy. "Target of 67.5 percent for Norway's renewable energy share by 2020"
Non-Sector specific	Non-Technology specific	67.5 %	Targeted share of renewables in final energy.	2020	Norwegian Ministry of Petroleum and Energy. "Target of 67.5 percent for Norway's renewable energy share by 2020"
Non-Sector specific	Non-Technology specific	67.5 %	Targeted share of renewables in final energy consumption.	2020	Renewable Energy World. "Norway Approves \$3 Billion for Wind Power Plants to Triple Capacity," 26 August 2013

3.3 Not specified

Sector	Technology	Value	Description	Year	Reference
Non-Sector specific	Non-Technology specific		Renewable energy targets exist.	2013	Global Status Report (GSR) 2014. "Country Profile Norway"

4. Renewable Energy Shares

4.1 Electricity production

Sector	Technology	Value	Description	Year	Reference
Electricity	Hydropower	97 %	Share of hydropower in electricity generation.	2012	U.S. Energy Information Administration (EIA). "International Energy Statistics. Norway Country Profile"
Electricity	Non-Technology specific	96.6 %	Share of renewables in electricity generation.	2011	Observ'ER. "Worldwide electricity generation from renewable energy sources"

Electricity	Solar PV	0.0 %	Share of solar PV in electricity generation.	2011	Observ'ER. "Worldwide electricity generation from renewable energy sources"
Electricity	Solid Biomass	0.3 %	Share of biomass in electricity generation.	2011	Observ'ER. "Worldwide electricity generation from renewable energy sources"
Electricity	Wind	0.9 %	Share of wind power in electricity generation.	2011	Observ'ER. "Worldwide electricity generation from renewable energy sources"
Electricity	Hydropower	95.4 %	Share of hydropower in electricity generation.	2011	Observ'ER. "Worldwide electricity generation from renewable energy sources"
Electricity	Hydropower	95 %	Share of hydropower in electricity supply.	2010	European Commission. Joint Research Centre (JRC). "2011 Technology map of the European strategic energy technology plan (SET-Plan)"
Electricity	Non-Technology specific	95.9 %	Share of renewables in electricity generation.	2010	Observ'ER. "Worldwide electricity generation from renewable energy sources"
Electricity	Non-Technology specific	96.7 %	Share of renewables in electricity generation.	2009	Observ'ER. "Worldwide electricity generation from renewable energy sources"

4.2 Final energy

Sector	Technology	Value	Description	Year	Reference
Non-Sector specific	Non-Technology specific	64.5 %	Share of renewables in gross final energy consumption.	2012	Eurostat. "Share of renewable energy in gross final energy consumption"
Non-Sector specific	Non-Technology specific	65 GW	Share of renewable energy in gross final energy consumption.	2011	European Commission. "Share of renewable energy in gross final energy consumption," 13 September 2013.
Non-Sector specific	Non-Technology specific	64.6 %	Share of renewables in gross final energy consumption.	2011	Eurostat. "Share of renewable energy in gross final energy consumption"
Non-Sector specific	Non-Technology specific	61.2 %	Share of renewables in gross final energy consumption.	2010	Eurostat. "Share of renewable energy in gross final energy consumption"
Non-Sector specific	Non-Technology specific	64.8 %	Share of renewables in gross final energy consumption.	2009	Eurostat. "Share of renewable energy in gross final energy consumption"

4.3 Primary energy

Sector	Technology	Value	Description	Year	Reference
Non-Sector specific	Solid Biomass	11.9 %	Share of biomass & waste in total renewables.	2010	Eurostat. "Renewable energy statistics"
Non-Sector specific	Hydropower	87.5 %	Share of hydropower energy in total renewables.	2010	Eurostat. "Renewable energy statistics"
Non-Sector specific	Wind	0.7 %	Share of wind energy in total renewables.	2010	Eurostat. "Renewable energy statistics"
Non-Sector specific	Solid Biomass	9.71 %	Share of biomass & waste in total renewables.	2009	Eurostat. "Renewable energy statistics"
Non-Sector specific	Hydropower	89.59 %	Share of hydropower energy in total renewables.	2009	Eurostat. "Renewable energy statistics"

Non-Sector specific	Wind	0.69 %	Share of wind energy in total renewables.	2009	Eurostat. "Renewable energy statistics"
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5. Installed Capacity

5.1 Installed capacity					
Sector	Technology	Value	Description	Year	Reference
Electricity	Wind	768.0 MW	Total installed wind power capacity.	2013	World Wind Energy Association (WWEA). "World Wind Energy Report 2013 - List of Countries and Regions using Wind Power in 2013"
Electricity	Wind	110.0 MW	Added installed wind power capacity.	2013	World Wind Energy Association (WWEA). "World Wind Energy Report 2013 - List of Countries and Regions using Wind Power in 2013"
Electricity	Solar PV	11 MW	Total installed solar PV capacity.	2013	IEA Photovoltaic Power Systems Programme (IEA-PVPS). "PVPS Report Snapshot of Global PV 1992-2013"
Electricity	Solar PV	1 MW	Added installed solar PV capacity.	2013	IEA Photovoltaic Power Systems Programme (IEA-PVPS). "PVPS Report Snapshot of Global PV 1992-2013"
Electricity	Wind	2.3 MW	Total installed offshore wind power capacity.	2013	Global Wind Energy Council (GWEC). "Global Wind Report 2013 - Annual market update," 9 April 2014
Electricity	Hydropower	29.3 GW	Total installed hydropower capacity.	2013	Global Status Report (GSR) 2014. "Country Profile Norway" provided by Simon Smith, International Hydropower Association (IHA)
Electricity	Wind	2.3 MW	Total installed offshore wind power capacity.	2012	Global Wind Energy Council. "Global Wind Statistics 2012"
Electricity	Wind	2.3 MW	Total installed offshore wind power capacity.	2012	EWEA. "The European offshore wind industry - key trends and statistics 2012"
Electricity	Wind	2.3 MW	Total installed offshore wind power capacity.	2012	EWEA. "The European offshore wind industry - key trends and statistics 2012"
Electricity	Hydropower	30.3 GW	Total installed hydropower capacity.	2012	International Hydropower Association. "2013 IHA Hydropower Report"
Electricity	Wind	703 MW	Total installed wind power capacity.	2012	WWEA. "2012 Annual Report"
Electricity	Wind	183 MW	Added installed wind power capacity.	2012	WWEA. "2012 Annual Report"
Heating/Cooling	Solar heating/cooling	1.4 MWth	Total installed unglazed solar water collectors capacity.	2012	International Energy Agency, Solar Heating & Cooling Programme (IEA-SHC). "Solar Heat Worldwide. Markets and Contribution to the Energy Supply 2012," June 2014

Heating/Cooling	Solar heating/cooling	22 MWth	Total installed flat plate solar water collectors capacity.	2012	International Energy Agency, Solar Heating & Cooling Programme (IEA-SHC). "Solar Heat Worldwide. Markets and Contribution to the Energy Supply 2012," June 2014
Heating/Cooling	Solar heating/cooling	1.9 MWth	Total installed evacuated tube solar water collectors capacity.	2012	International Energy Agency, Solar Heating & Cooling Programme (IEA-SHC). "Solar Heat Worldwide. Markets and Contribution to the Energy Supply 2012," June 2014
Heating/Cooling	Solar heating/cooling	27.4 MWth	Total installed solar heat collectors capacity.	2012	International Energy Agency, Solar Heating & Cooling Programme (IEA-SHC). "Solar Heat Worldwide. Markets and Contribution to the Energy Supply 2012," June 2014
Heating/Cooling	Solar heating/cooling	2.1 MWth	Total installed air heating glazed collectors capacity.	2012	International Energy Agency, Solar Heating & Cooling Programme (IEA-SHC). "Solar Heat Worldwide. Markets and Contribution to the Energy Supply 2012," June 2014
Heating/Cooling	Solar heating/cooling	10.7 MWth	Added installed flat plate solar water collectors capacity.	2012	International Energy Agency, Solar Heating & Cooling Programme (IEA-SHC). "Solar Heat Worldwide. Markets and Contribution to the Energy Supply 2012," June 2014
Heating/Cooling	Solar heating/cooling	0.6 MWth	Added installed evacuated tube solar water collectors capacity.	2012	International Energy Agency, Solar Heating & Cooling Programme (IEA-SHC). "Solar Heat Worldwide. Markets and Contribution to the Energy Supply 2012," June 2014
Heating/Cooling	Solar heating/cooling	1.4 MWth	Total installed air heating glazed collectors capacity.	2012	International Energy Agency, Solar Heating & Cooling Programme (IEA-SHC). "Solar Heat Worldwide. Markets and Contribution to the Energy Supply 2012," June 2014

6. Energy Production

6.1 Energy production					
Sector	Technology	Value	Description	Year	Reference
Electricity	Hydropower	129,025 GWh	Total hydropower electricity generation.	2013	Statistics Norway. "Electricity, monthly figures, December 2013," 14 February 2014
Electricity	Wind	1,894 GWh	Total wind power electricity generation.	2013	Statistics Norway. "Electricity, monthly figures, December 2013," 14 February 2014
Electricity	Hydropower	140 TWh	Total hydropower electricity generation.	2012	U.S. Energy Information Administration (EIA). "International Energy Statistics. Norway Country Profile"
Electricity	Hydropower	142,898 GWh	Total hydropower electricity generation.	2012	Statistics Norway. "Electricity, monthly figures, December 2013," 14 February 2014

Electricity	Wind	1,556 GWh	Total wind power electricity generation.	2012	Statistics Norway. "Electricity, monthly figures, December 2013," 14 February 2014
Electricity	Hydropower	122.1 TWh	Total hydropower electricity generation.	2011	Global Status Report (GSR) 2012. "Country Profile Norway"
Non-Sector specific	Non-Technology specific	11,957 ktoe	Primary production of renewable energy.	2011	Eurostat. "Primary production of renewable energy"
Electricity	Non-Technology specific	123.6 TWh	Total renewable electricity generation.	2011	Observ'ER. "Worldwide electricity generation from renewable energy sources"
Electricity	Hydropower	122.1 TWh	Total hydropower electricity generation.	2011	Observ'ER. "Worldwide electricity generation from renewable energy sources"
Electricity	Solar PV	7 GWh	Total solar PV electricity generation.	2011	Observ'ER. "Worldwide electricity generation from renewable energy sources"
Electricity	Wind	1,143 GWh	Total wind power electricity generation.	2011	Observ'ER. "Worldwide electricity generation from renewable energy sources"
Electricity	Solid Biomass	255 GWh	Total biomass electricity generation.	2011	Observ'ER. "Worldwide electricity generation from renewable energy sources"
Electricity	Biogas	10 GWh	Total biogas electricity generation.	2011	Observ'ER. "Worldwide electricity generation from renewable energy sources"
Non-Sector specific	Non-Technology specific	128.1 TWh	Total renewable electricity generation.	2011	Global Status Report (GSR) 2013. "Country Profile Norway"
Electricity	Hydropower	116.36 TWh	Total hydropower electricity generation.	2010	Global Status Report (GSR) 2012. "Country Profile Norway"
Non-Sector specific	Non-Technology specific	11,520 ktoe	Primary production of renewable energy.	2010	Eurostat. "Primary production of renewable energy"
Electricity	Non-Technology specific	119.2 TWh	Total renewable electricity generation.	2010	Observ'ER. "Worldwide electricity generation from renewable energy sources"
Electricity	Hydropower	117.9 TWh	Total hydropower electricity generation.	2010	Observ'ER. "Worldwide electricity generation from renewable energy sources"
Electricity	Solar PV	7 GWh	Total solar PV electricity generation.	2010	Observ'ER. "Worldwide electricity generation from renewable energy sources"
Electricity	Wind	895 GWh	Total wind power electricity generation.	2010	Observ'ER. "Worldwide electricity generation from renewable energy sources"