

# RENEWABLES INTERACTIVE MAP

## COUNTRY PROFILE: Romania

### 1. SUMMARY

#### 1.1 Country Overview

Country size	238 391 km <sup>2</sup>
Population	22 215 421
GDP	189 776 000 000
Energy production	28 782 ktoe/year
Energy consumption	26 495 ktoe/year

#### 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	15.5 % 2011	22.9 % 2012	24 % 2012			6.4 GW 2010
	16.3 % 2010	21.2 % 2011	26 % 2011			6.4 GW 2009
		15.1 % 2010	33.5 % 2010			
		14.3 % 2009	27.3 % 2009			

\* = Conflicting data exists (see respective table below)

## 2. Renewable Energy Policies

#### 2.1 Obligation and mandate

Sector	Technology	Value	Description	Year	Reference
Electricity	Non-Technology specific	11.1 %	Industrial consumers quota obligation for renewable energy gross power consumption.	2014	Reuters. "Romania caps green energy quota to help large industrial firms," 26 March 2014
Non-Sector specific	Non-Technology specific		Biofuels mandates exist.	2013	Global Status Report (GSR) 2014. "Country Profile Romania"
Non-Sector specific	Non-Technology specific		Biofuels obligation/mandate exists.	2012	Global Status Report (GSR) 2013. "Country Profile Romania"

#### 2.2 Public investment, loans, or financing

Sector	Technology	Value	Description	Year	Reference
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Non-Sector specific	Non-Technology specific		Public investment exists.	2013	Global Status Report (GSR) 2014. "Country Profile Romania"
Non-Sector specific	Non-Technology specific		Public investment, loans or grants exist.	2012	Global Status Report (GSR) 2013. "Country Profile Romania"

## 2.3 Tax incentives

Sector	Technology	Value	Description	Year	Reference
Non-Sector specific	Non-Technology specific		Reductions in sales, energy, CO2, VAT or other taxes exist.	2012	Global Status Report (GSR) 2013. "Country Profile Romania"

## 2.4 Tradable renewable energy certificate (REC)

Sector	Technology	Value	Description	Year	Reference
Electricity	Wind	0.75 certificates/MWh	Renewable Energy Certificate for wind power.	2018	Euractiv. "Romania slashes renewable energy subsidies," 18 December 2013
Electricity	Wind	1.5 certificates/MWh	Renewable Energy Certificate for wind power.	2014-2017	Euractiv. "Romania slashes renewable energy subsidies," 18 December 2013
Non-Sector specific	Non-Technology specific		Tradable RECs exist.	2013	Global Status Report (GSR) 2014. "Country Profile Romania"
Electricity	Solar PV	3 certificates/MWh	Renewable Energy Certificate for solar power.	2013	Euractiv. "Romania slashes renewable energy subsidies," 18 December 2013
Electricity	Hydropower	2.7 certificates/MWh	Renewable Energy Certificate for hydropower.	2013	Euractiv. "Romania slashes renewable energy subsidies," 18 December 2013
Electricity	Hydropower	2 certificates/MWh	Renewable Energy Certificate for hydropower.	2013	Res Legal. "Quota System," updated 5 November 2013
Electricity	Hydropower	0.5 certificates/MWh	Renewable Energy Certificate for hydropower.	2013	Res Legal. "Quota System," updated 5 November 2013
Electricity	Geothermal	2 certificates/MWh	Renewable Energy Certificate for geothermal.	2013	Res Legal. "Quota System," updated 5 November 2013
Electricity	Biogas	2 certificates/MWh	Renewable Energy Certificate for biogas.	2013	Res Legal. "Quota System," updated 5 November 2013
Electricity	Solid Biomass	2 certificates/MWh	Renewable Energy Certificate for biomass.	2013	Res Legal. "Quota System," updated 5 November 2013
Electricity	Biofuels	2 certificates/MWh	Renewable Energy Certificate for biofuels.	2013	Res Legal. "Quota System," updated 5 November 2013
Electricity	Biogas	1 certificates/MWh	Renewable Energy Certificate for anaerobic digestion.	2013	Res Legal. "Quota System," updated 5 November 2013
Electricity	Biogas	1 certificates/MWh	Renewable Energy Certificate for sewage gas.	2013	Res Legal. "Quota System," updated 5 November 2013
Electricity	Non-Technology specific	8.3 %	Tradable green certificates purchase quota.	2010	European Renewable Energy Council (EREC). "Renewable energy policy review"
Electricity	Non-Technology specific	27-55 EUR	Price range for tradable green certificates.	2009	European Renewable Energy Council (EREC). "Renewable energy policy review"

2.5 Utility quota obligation					
Sector	Technology	Value	Description	Year	Reference
Electricity	Non-Technology specific	20 %	Utility quota obligation.	2020	Res Legal. "Quota System," updated 5 November 2013
Electricity	Non-Technology specific	19.5 %	Utility quota obligation.	2019	Res Legal. "Quota System," updated 5 November 2013
Electricity	Non-Technology specific	19 %	Utility quota obligation.	2018	Res Legal. "Quota System," updated 5 November 2013
Electricity	Non-Technology specific	18 %	Utility quota obligation.	2017	Res Legal. "Quota System," updated 5 November 2013
Electricity	Non-Technology specific	17 %	Utility quota obligation.	2016	Res Legal. "Quota System," updated 5 November 2013
Electricity	Non-Technology specific	16 %	Utility quota obligation.	2015	Res Legal. "Quota System," updated 5 November 2013
Electricity	Non-Technology specific	15 %	Utility quota obligation.	2014	Res Legal. "Quota System," updated 5 November 2013
Non-Sector specific	Non-Technology specific		Renewable Portfolio Standards exist.	2013	Global Status Report (GSR) 2014. "Country Profile Romania"
Electricity	Non-Technology specific	14 %	Utility quota obligation.	2013	Res Legal. "Quota System," updated 5 November 2013
Non-Sector specific	Non-Technology specific		Renewable Portfolio Standards exist.	2012	Global Status Report (GSR) 2013. "Country Profile Romania"
Electricity	Non-Technology specific	12 %	Utility quota obligation.	2012	Res Legal. "Quota System," updated 5 November 2013
Electricity	Non-Technology specific	10 %	Utility quota obligation.	2011	Res Legal. "Quota System," updated 5 November 2013

## 3. Renewable Energy Targets

3.1 Electricity					
Sector	Technology	Value	Description	Year	Reference
Electricity	Wind	4,000.00 MW	Targeted total wind installed capacity.	2020	EurObserv'ER. "The state of renewable energies in Europe - 10th EurObserv'ER Report"
Electricity	Non-Technology specific	43 %	Targeted share of renewable in electricity generation.	2020	Austrian Energy Agency. "Renewable Energy Action Plan. Romania Country Profile"
Electricity	Non-Technology specific	35 %	Targeted share of renewables in electricity generation.	2015	Global Wind Energy Council (GWEC). "Global Wind Report - Annual market update 2010"
Electricity	Non-Technology specific	33 %	Targeted share of renewable energies in gross electricity consumption.	2010	Europe - Summaries of EU legislation. "Promotion of the use of energy from renewable sources"

3.2 Final energy					
Sector	Technology	Value	Description	Year	Reference

Non-Sector specific	Non-Technology specific	24 %	Targeted share of renewable energies in gross final energy consumption.	2020	Europe - Summaries of EU legislation. "Promotion of the use of energy from renewable sources"
Heating/Cooling	Non-Technology specific	22 %	Targeted share of renewable energies in gross final heating/cooling consumption.	2020	Romania Ministry of Economy, Commerce and Business Environment. "National Renewable Energy Action Plan (NREAP)"
Electricity	Non-Technology specific	43 %	Targeted share of renewable energies in gross final electricity consumption.	2020	Romania Ministry of Economy, Commerce and Business Environment. "National Renewable Energy Action Plan (NREAP)"

### 3.3 Heating/cooling consumption

Sector	Technology	Value	Description	Year	Reference
Heating/Cooling	Non-Technology specific	22 %	Targeted share of renewable in final heating/cooling consumption	2020	Austrian Energy Agency. "Renewable Energy Action Plan. Romania Country Profile"

### 3.4 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 Romania"

### 3.5 Transport

Sector	Technology	Value	Description	Year	Reference
Transport	Biofuels	10.0 %	Targeted share of renewables in transport.	2020	Bloomberg New Energy Finance. "Week in Review Vol. VI, Issue 201," 17 September 2013.
Transport	Non-Technology specific	10 %	Targeted share of renewable in final transport energy consumption.	2020	Austrian Energy Agency. "Renewable Energy Action Plan. Romania Country Profile"

## 4. Renewable Energy Shares

### 4.1 Electricity production

Sector	Technology	Value	Description	Year	Reference
Electricity	Non-Technology specific	24 %	Share of renewables in electricity generation.	2012	Global Status Report (GSR) 2014. "Country Profile Romania" provided by Ulrike Radosch, ENERCEE
Electricity	Non-Technology specific	26.8 %	Share of renewables in electricity generation	2011	Observ'ER. "Worldwide electricity production from renewable energy sources"
Electricity	Solar PV	0.0 %	Share of solar PV in electricity generation	2011	Observ'ER. "Worldwide electricity production from renewable energy sources"
Electricity	Solid Biomass	0.0 %	Share of biomass in electricity generation	2011	Observ'ER. "Worldwide electricity production from renewable energy sources"

Electricity	Wind	2.3 %	Share of wind power in electricity generation	2011	Observ'ER. "Worldwide electricity production from renewable energy sources"
Electricity	Hydropower	24.5 %	Share of hydropower in electricity generation	2011	Observ'ER. "Worldwide electricity production from renewable energy sources"
Electricity	Non-Technology specific	28.1 %	Share of renewables in electricity generation.	2011	Global Status Report (GSR) 2013. "Country Profile Romania"
Electricity	Non-Technology specific	26 %	Share of renewables in electricity generation.	2011	Global Status Report (GSR) 2014. "Country Profile Romania" provided by Ulrike Radosch, ENERCEE
Electricity	Non-Technology specific	34.0 %	Share of renewables in electricity generation	2010	Observ'ER. "Worldwide electricity production from renewable energy sources"
Electricity	Non-Technology specific	33.5 %	Share of renewables in electricity generation.	2010	Global Status Report (GSR) 2013. "Country Profile Romania"
Electricity	Non-Technology specific	27.3 %	Share of renewables in electricity generation	2009	Observ'ER. "Worldwide electricity production from renewable energy sources"

## 4.2 Final energy

Sector	Technology	Value	Description	Year	Reference
Non-Sector specific	Non-Technology specific	22.9 %	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	21.2 %	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	23.2 %	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	15.1 %	Share of renewable energies in total gross inland energy consumption.	2010	EurObserv'ER. "The state of renewable energies in Europe - 11th EurObserv'ER Report"
Non-Sector specific	Non-Technology specific	21.4 %	Share of renewables in gross final energy consumption.	2010	EurObserv'ER. "The state of renewable energies in Europe - 11th EurObserv'ER Report"
Non-Sector specific	Non-Technology specific	22.6 %	Share of renewables in gross final energy consumption.	2009	Eurostat. "Share of renewable energy in gross final energy consumption"
Non-Sector specific	Non-Technology specific	14.3 %	Share of renewable energies in total gross inland energy consumption.	2009	EurObserv'ER. "The state of renewable energies in Europe - 11th EurObserv'ER Report"
Non-Sector specific	Non-Technology specific	21.6 %	Share of renewables in gross final energy consumption.	2009	EurObserv'ER. "The state of renewable energies in Europe - 10th EurObserv'ER Report"

## 4.3 Primary energy

Sector	Technology	Value	Description	Year	Reference
Non-Sector specific	Non-Technology specific	15.5 %	Share of renewables in total primary energy supply.	2011	Global Status Report (GSR) 2013. "Country Profile Romania"
Non-Sector specific	Solid Biomass	69.6 %	Share of biomass & waste in total renewables.	2010	Eurostat. "Renewable energy statistics"

Non-Sector specific	Geothermal	0.4 %	Share of geothermal energy in total renewables.	2010	Eurostat. "Renewable energy statistics"
Non-Sector specific	Hydropower	29.5 %	Share of hydropower energy in total renewables.	2010	Eurostat. "Renewable energy statistics"
Non-Sector specific	Wind	0.5 %	Share of wind energy in total renewables.	2010	Eurostat. "Renewable energy statistics"
Non-Sector specific	Non-Technology specific	16.3 %	Share of renewables in total primary energy supply.	2010	Global Status Report (GSR) 2013. "Country Profile Romania"
Non-Sector specific	Solid Biomass	74.22 %	Share of biomass & waste in total renewables.	2009	Eurostat. "Renewable energy statistics"
Non-Sector specific	Geothermal	0.5 %	Share of geothermal energy in total renewables.	2009	Eurostat. "Renewable energy statistics"
Non-Sector specific	Hydropower	25.33 %	Share of hydropower energy in total renewables.	2009	Eurostat. "Renewable energy statistics"
Non-Sector specific	Wind	0.02 %	Share of wind energy in total renewables.	2009	Eurostat. "Renewable energy statistics"

#### 4.4 Transport

Sector	Technology	Value	Description	Year	Reference
Transport	Non-Technology specific	3.1 %	Share of renewables in transport fuels.	2011	Global Status Report (GSR) 2013. "Country Profile Romania"
Transport	Non-Technology specific	2.6 %	Share of renewables in transport fuels.	2010	Global Status Report (GSR) 2013. "Country Profile Romania"

## 5. Installed Capacity

### 5.1 Installed capacity

Sector	Technology	Value	Description	Year	Reference
Electricity	Wind	2,599.0 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	695.0 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	1,100 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	1,150 MW	Added installed solar PV capacity.	2013	IEA Photovoltaic Power Systems Programme (IEA-PVPS). "PVPS Report Snapshot of Global PV 1992-2013"
Electricity	Wind	695.0 MW	Added installed wind power capacity.	2013	Global Wind Energy Council (GWEC). "Global Wind Report 2013 - Annual market update," 9 April 2014



Electricity	Wind	2,600.0 MW	Total installed wind power capacity.	2013	Global Wind Energy Council (GWEC). "Global Wind Report 2013 - Annual market update," 9 April 2014
Heating/Cooling	Solar heating/cooling	89.99 MWth	Total installed glazed solar thermal capacity.	2013	European Solar Thermal Industry Federation (ESTIF). "Solar Thermal Markets in Europe. Trends and Market Statistics 2013," June 2014
Heating/Cooling	Solar heating/cooling	128,550 m <sup>2</sup>	Total installed glazed solar thermal collector area.	2013	European Solar Thermal Industry Federation (ESTIF). "Solar Thermal Markets in Europe. Trends and Market Statistics 2013," June 2014
Heating/Cooling	Solar heating/cooling	16,695 m <sup>2</sup>	Added installed glazed solar thermal collector area.	2013	European Solar Thermal Industry Federation (ESTIF). "Solar Thermal Markets in Europe. Trends and Market Statistics 2013," June 2014
Electricity	Solar PV	972.7 MWp	Added installed solar PV capacity.	2013	EurObserv'ER. "Photovoltaic Barometer," April 2014
Electricity	Solar PV	1,022 MWp	Total installed solar PV capacity.	2013	EurObserv'ER. "Photovoltaic Barometer," April 2014
Electricity	Wind	2,459 MW	Total installed wind power capacity.	2013	EurObserv'ER. "Wind Energy Barometer," February 2014
Electricity	Wind	637 MW	Added installed wind power capacity.	2013	EurObserv'ER. "Wind Energy Barometer," February 2014
Heating/Cooling	Solar heating/cooling	9,000 m <sup>2</sup>	Added installed flat plate-glazed solar thermal collectors area.	2013	EurObserv'ER. "Solar Thermal and Concentrated Solar Power Barometer," May 2014
Heating/Cooling	Solar heating/cooling	14,850 m <sup>2</sup>	Added installed vacuum-glazed solar thermal collectors area.	2013	EurObserv'ER. "Solar Thermal and Concentrated Solar Power Barometer," May 2014
Heating/Cooling	Solar heating/cooling	180.0 m <sup>2</sup>	Added installed unglazed solar thermal collectors area.	2013	EurObserv'ER. "Solar Thermal and Concentrated Solar Power Barometer," May 2014
Heating/Cooling	Solar heating/cooling	24,030 m <sup>2</sup>	Added installed solar thermal collectors area.	2013	EurObserv'ER. "Solar Thermal and Concentrated Solar Power Barometer," May 2014
Heating/Cooling	Solar heating/cooling	16.8 MWth	Added installed solar thermal collectors capacity.	2013	EurObserv'ER. "Solar Thermal and Concentrated Solar Power Barometer," May 2014
Heating/Cooling	Solar heating/cooling	133,355 m <sup>2</sup>	Total installed solar thermal collectors area.	2013	EurObserv'ER. "Solar Thermal and Concentrated Solar Power Barometer," May 2014
Heating/Cooling	Solar heating/cooling	93.3 MWth	Total installed solar thermal collectors capacity.	2013	EurObserv'ER. "Solar Thermal and Concentrated Solar Power Barometer," May 2014

## 6. Energy Production

### 6.1 Energy production

Sector	Technology	Value	Description	Year	Reference
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Electricity	Solar PV	397.8 GWh	Total solar PV electricity generation.	2013	EurObserv'ER. "Photovoltaic Barometer," April 2014
Electricity	Wind	4,047 GWh	Total wind power electricity generation.	2013	EurObserv'ER. "Wind Energy Barometer," February 2014
Electricity	Wind	2.9 TWh	Wind power electricity generation.	2012	EurObserv'ER. "Wind Power Barometer"
Electricity	Solar PV	2.0 GWh	Solar PV electricity generation.	2012	Euroobserver. "Photovoltaic Barometer"
Transport	Biofuels	47.7 ktoe	Amount of bioethanol consumption for transport.	2012	EurObserv'ER. "Biofuels Barometer," July 2013
Transport	Biofuels	138.7 ktoe	Amount of biodiesel consumption for transport.	2012	EurObserv'ER. "Biofuels Barometer," July 2013
Transport	Biofuels	9.721 ktoe	Amount of others biofuel consumption for transport.	2012	EurObserv'ER. "Biofuels Barometer," July 2013
Transport	Biofuels	196.2 ktoe	Total amount of biofuel consumption for transport.	2012	EurObserv'ER. "Biofuels Barometer," July 2013
Transport	Biofuels	20 million liters	Bioethanol fuel output.	2012	EurObserv'ER. "Biofuels Barometer," July 2013
Non-Sector specific	Solid Biomass	3,470 ktoe	Primary energy production of solid biomass.	2012	EurObserv'ER. "Solid Biomass Barometer," December 2013
Non-Sector specific	Solid Biomass	43 ktoe	Heat production from solid biomass heat plants.	2012	EurObserv'ER. "Solid Biomass Barometer," December 2013
Non-Sector specific	Solid Biomass	5 ktoe	Heat production from solid biomass CHP plants.	2012	EurObserv'ER. "Solid Biomass Barometer," December 2013
Electricity	Solid Biomass	95 GWh	Electricity production from solid biomass power plants.	2012	EurObserv'ER. "Solid Biomass Barometer," December 2013
Electricity	Solid Biomass	116 GWh	Electricity production from solid biomass CHP plants.	2012	EurObserv'ER. "Solid Biomass Barometer," December 2013
Electricity	Solid Biomass	180 GWh	Total solid biomass electricity generation.	2012	EurObserv'ER. "Solid Biomass Barometer," December 2013
Transport	Biofuels	71.6 ktoe	Amount of bioethanol consumption for transport.	2011	EurObserv'ER. "Biofuels barometer"
Transport	Biofuels	125.8 ktoe	Amount of biodiesel consumption for transport.	2011	EurObserv'ER. "Biofuels barometer"
Transport	Biofuels	197.4 ktoe	Total amount of biofuel consumption for transport.	2011	EurObserv'ER. "Biofuels barometer"
Non-Sector specific	Non-Technology specific	5,028.0 ktoe	Primary production of renewable energy.	2011	Eurostat. "Primary production of renewable energy"
Electricity	Wind	1.4 TWh	Wind power electricity generation.	2011	EurObserv'ER. "Wind Power Barometer"