

RENEWABLE ENERGY COUNTRY PROFILES

EUROPEAN UNION



June 2013 edition

www.irena.org

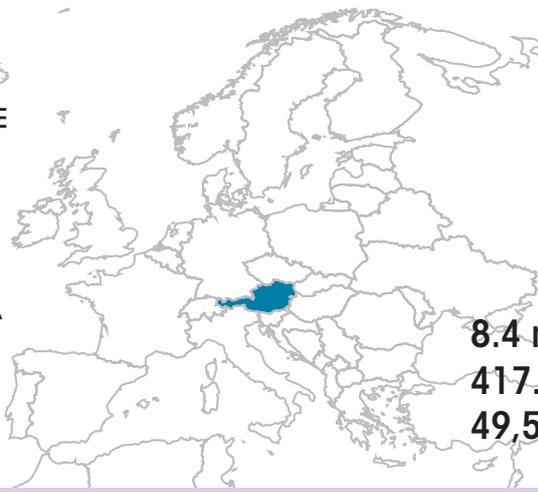


IRENA [Renewable Energy Country Profiles](#) take stock of the latest developments in the field of renewables at country level around the world. Each profile combines analysis by IRENA's specialists with the latest available country data and additional information from a wide array of sources. The resulting reports provide a brief yet comprehensive picture of the situation with regard to renewable energy, including energy supply, electrical generation and grid capacity, and access. Energy policies, targets and projects are also considered, along with each country's investment climate and endowment with renewable energy resources.

The energy statistics presented here span the period from 2010 until 2013, reflecting varying timelines in the source material. Since data availability differs from country to country, wider regional comparisons are possible only for the latest year with figures available for every country included. Despite the time lag in some cases, the evident differences and disparities between countries and regions around the world remain striking.

The current package of country profiles is just a starting point. The geographic scope will continue to expand, and existing profiles will be enhanced with new indicators, with the whole series maintained as a live product on the IRENA website (www.irena.org). Your feedback on both the format and the content of these country profiles would be greatly appreciated. Please address any comments to statistics@irena.org.

AUSTRIA



8.4 million Population (2011)
417.7 billion USD GDP (2011)
49,581 USD GDP per capita (2011)

FIGURE 1: GDP PER CAPITA FOR 2011

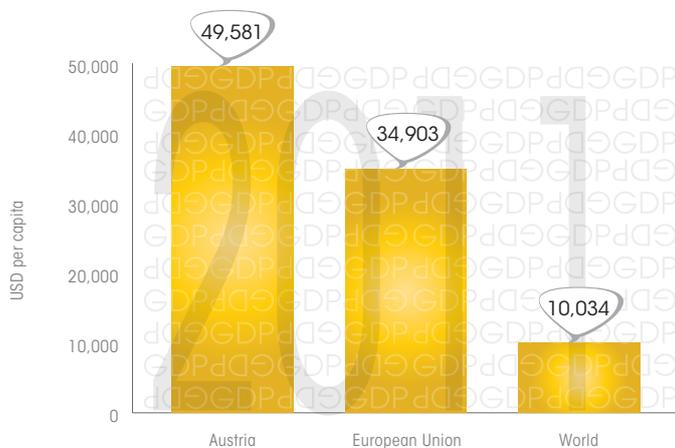
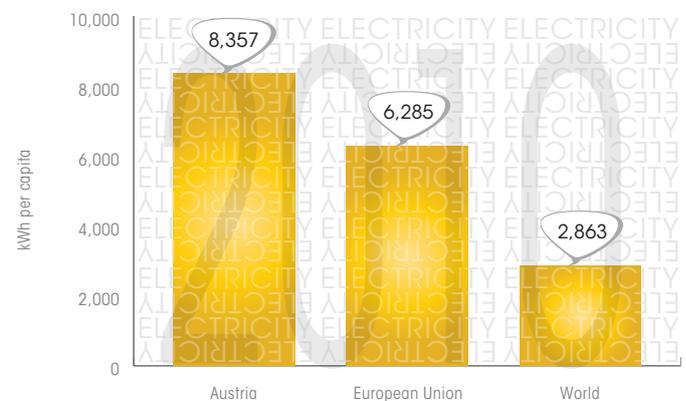


FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2010



The European Union includes Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the United Kingdom.

ENERGY NATIONAL PROFILE 2011

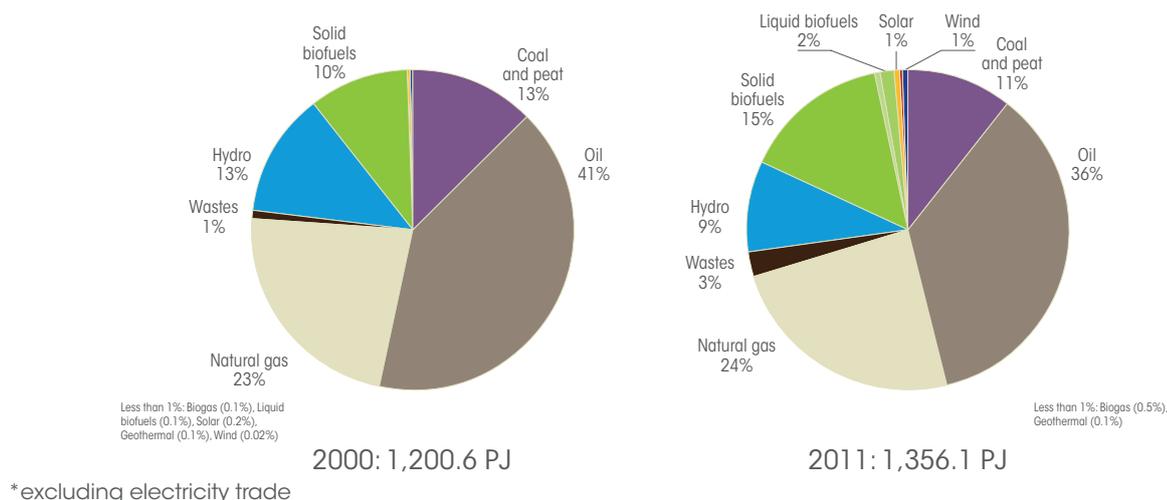
- Total Primary Energy Supply: 1,385.5 PJ - Of which renewables: 367.3 PJ (26.5%)
- Energy self-sufficiency: 35.0%
- Fuel imports: 21.7 billion USD (11.4% of total imports)
- Electricity generation: 62.2 TWh - Of which renewables: 40.8 TWh (65.7%)
- Electricity use per capita: 8,344 kWh
- Electrical capacity: 22.8 GW - Of which renewables: 15.0 GW (65.8%)
- Electricity access rate: 99.9%
- Share of population using solid fuels*: 20%

* 2010

TARGETS:

- 45% of final energy from renewables by 2020
- At least 10% of transport energy from renewables by 2020
- Adding 2 GW of wind, 1.2 GW of solar photovoltaic, 1 GW of hydro and 0.2 GW of bioenergy (solid and gaseous biomass) capacity by 2020

FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2011



POLICIES IN PLACE TO PROMOTE RENEWABLE ENERGY SINCE THE RIO CONFERENCE OF 1992



Note: All Member States of the European Union published National Renewable Energy Action Plans in 2010, which detail how they expect to reach their legally binding 2020 target for the share of renewable energy in their total energy consumption, as required by the renewable energy Directive (2009/28/EC)

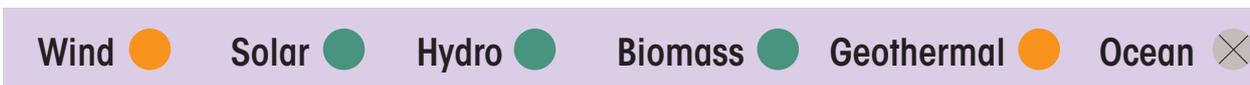
WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2013: Ranked 29 out of 185

RENEWABLE ENERGY PROJECTS REPORTED IN THE BNEF DATABASE:

- 188 MW of wind capacity addition announced (2 projects)

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: Not applicable

RENEWABLE ENERGY RESOURCES: ● High ● Medium ● Low ● Unknown ✕ Not applicable



Note: The information on resources should be taken as an indication only. It refers to a general trend of available resources, and does not pre-judge the feasibility of individual projects. The thresholds are indicative, and do not refer to any technological choice. The analysis is based on the literature.

Sources: Population and GDP: World Bank; Energy data: IEA, IRENA analysis based on Eurostat data; Share of fuel imports in total imports: World Trade Organisation; Electrical capacity: IEA, Eurostat; Electricity access rate: World Energy Outlook 2012 database (IEA); Share of population using solid fuels: World Health Organisation; Targets: REN21, IRENA; Policy/legislation: IEA, IRENA research; Ease of doing business index: World Bank; Renewable energy projects: Bloomberg New Energy Finance, IRENA research; Clean Development Mechanism projects: UNFCCC; Renewable energy resources: IRENA analysis.

Units: USD: United States dollar; kWh: kilowatt-hour; GWh: gigawatt-hour (1 GWh=10⁶ kWh); TWh: terawatt-hour (1 TWh=10³ GWh); PJ: petajoule; MW: megawatt; GW: gigawatt (1 GW=10³ MW). Please also refer to the glossary for explanations on the terms used in the country profile.

BELGIUM

11.0 million Population (2011)
513.7 billion USD GDP (2011)
46,608 USD GDP per capita (2011)

FIGURE 1: GDP PER CAPITA FOR 2011

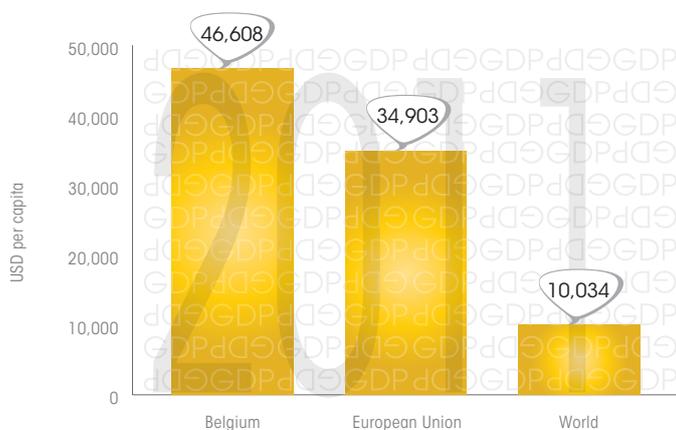
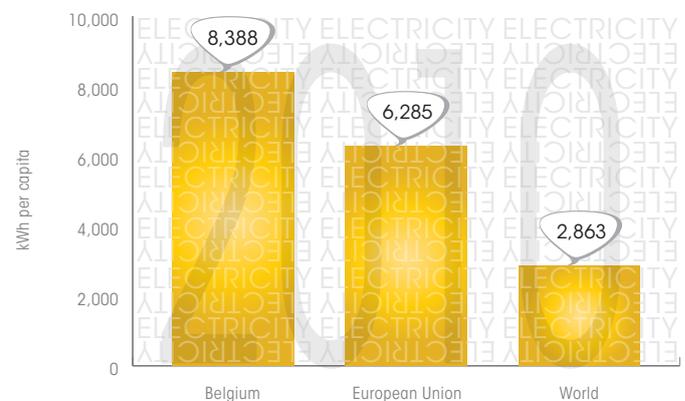


FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2010



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ENERGY NATIONAL PROFILE 2011

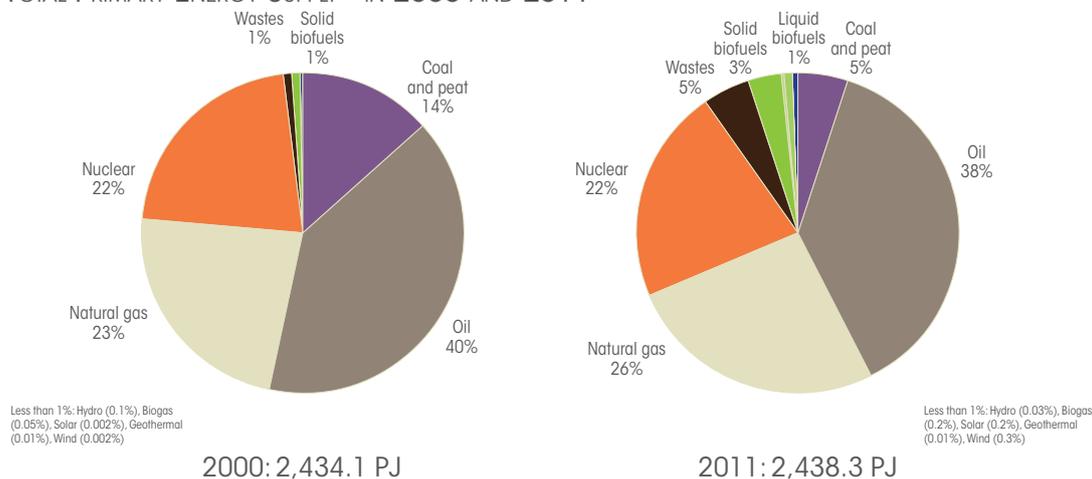
- Total Primary Energy Supply: 2,444.8 PJ - Of which renewables: 119.7 PJ (4.9%)
- Energy self-sufficiency: 31.6%
- Fuel imports: 76.2 billion USD (16.5% of total imports)
- Electricity generation: 88.9 TWh - Of which renewables: 8.4 TWh (9.4%)
- Electricity use per capita: 8,034 kWh
- Electrical capacity: 20.1 GW - Of which renewables: 3,841 MW (19.1%)
- Electricity access rate: 99.9%
- Share of population using solid fuels*: < 5%

* 2010

TARGETS:

- 13% of final energy from renewables by 2020
- 10.15% of transport energy from renewables by 2020
- 11.9% of gross final consumption in heating and cooling from renewables by 2020
- Wallonia: 30% of electricity generation from renewables by 2016, 8 TWh of renewable electricity generated in 2020

FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2011



*excluding electricity trade

POLICIES IN PLACE TO PROMOTE RENEWABLE ENERGY SINCE THE RIO CONFERENCE OF 1992



Notes: 1) All Member States of the European Union published National Renewable Energy Action Plans in 2010, which detail how they expect to reach their legally binding 2020 target for the share of renewable energy in their total energy consumption, as required by the renewable energy Directive (2009/28/EC)
 2) Many support schemes and policies have been put in place at the regional level in the Brussels-Capital Region, Flanders and Wallonia.

WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2013: Ranked 33 out of 185

RENEWABLE ENERGY PROJECTS REPORTED IN THE BNEF DATABASE:

- 780 to 930 MW and 24 MWth of biomass-fired capacity addition (3 projects)
- 20 MWe and 20 MWth of waste-to-energy capacity addition (1 project)
- 1.2 MW of solar photovoltaic capacity addition announced (1 project)
- 16 MW of hydro capacity addition (25 projects)
- More than 1,600 MW of offshore wind and 470 MW of onshore wind capacity addition planned

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: Not applicable

RENEWABLE ENERGY RESOURCES: ● High ● Medium ● Low ● Unknown ✕ Not applicable

Wind ● Solar ● Hydro ● Biomass ● Geothermal ● Ocean ●

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Units: USD: United States dollar; kWh: kilowatt-hour; GWh: gigawatt-hour (1 GWh=10⁶ kWh); TWh: terawatt-hour (1 TWh=10³ GWh); PJ: petajoule; MW: megawatt; GW: gigawatt (1 GW=10³ MW). Please also refer to the glossary for explanations on the terms used in the country profile.

BULGARIA

7.3 million Population (2011)
53.5 billion USD GDP (2011)
7,283 USD GDP per capita (2011)

FIGURE 1: GDP PER CAPITA FOR 2011

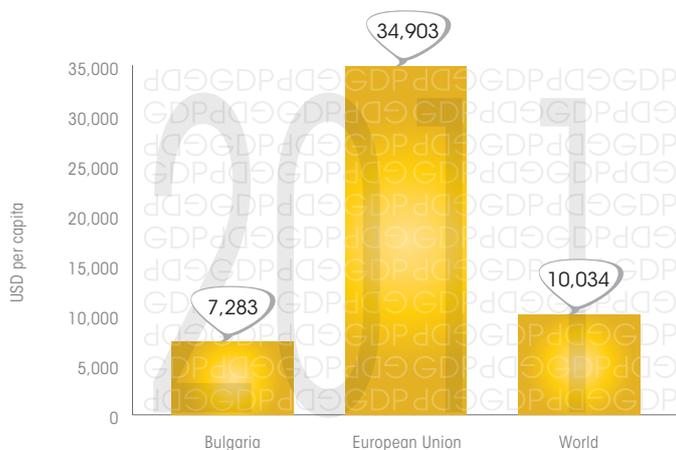
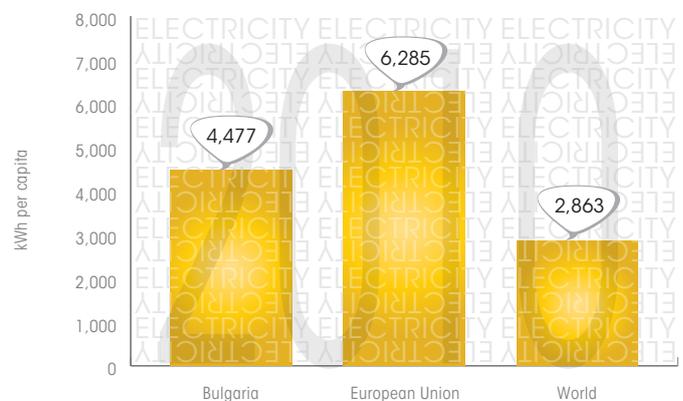


FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2010



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ENERGY NATIONAL PROFILE 2011

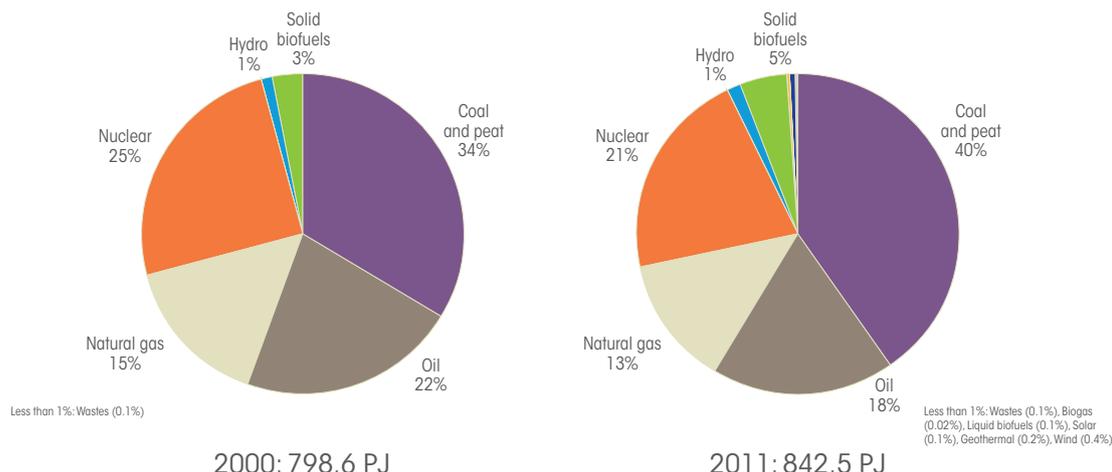
- Total Primary Energy Supply: 801.8 PJ - Of which renewables: 56.6 PJ (7.1%)
- Energy self-sufficiency: 64.4%
- Fuel imports: 7.5 billion USD (23.0% of total imports)
- Electricity generation: 50.0 TWh - Of which renewables: 3,935 GWh (7.9%)
- Electricity use per capita: 4,863 kWh
- Electrical capacity: 10.2 GW - Of which renewables: 2,944 MW (28.8%)
- Electricity access rate: 99.9%
- Share of population using solid fuels*: 14%

* 2010

TARGETS:

- 16% of final energy from renewables by 2020
- At least 10% of transport energy from renewables by 2020
- 80 MW of solar photovoltaic capacity operational by 2014

FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2011



2000: 798.6 PJ

2011: 842.5 PJ

*excluding electricity trade

POLICIES IN PLACE TO PROMOTE RENEWABLE ENERGY SINCE THE RIO CONFERENCE OF 1992



Note: All Member States of the European Union published National Renewable Energy Action Plans in 2010, which detail how they expect to reach their legally binding 2020 target for the share of renewable energy in their total energy consumption, as required by the renewable energy Directive (2009/28/EC)

WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2013: Ranked 66 out of 185

RENEWABLE ENERGY PROJECTS REPORTED IN THE BNEF DATABASE:

- 80 MW of small hydro capacity addition announced (1 project)
- 185 MW of solar photovoltaic capacity addition announced (12 projects)
- Around 2,300 MW of wind capacity addition announced (23 projects)

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: Not applicable

RENEWABLE ENERGY RESOURCES:

● High ● Medium ● Low ● Unknown ✕ Not applicable

Wind ● Solar ● Hydro ● Biomass ● Geothermal ● Ocean ●

Note: The information on resources should be taken as an indication only. It refers to a general trend of available resources, and does not pre-judge the feasibility of individual projects. The thresholds are indicative, and do not refer to any technological choice. The analysis is based on the literature.

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Units: USD: United States dollar; kWh: kilowatt-hour; GWh: gigawatt-hour (1 GWh=10⁶ kWh); TWh: terawatt-hour (1 TWh=10³ GWh); PJ: petajoule; MW: megawatt; GW: gigawatt (1 GW=10³ MW). Please also refer to the glossary for explanations on the terms used in the country profile.

CYPRUS



1.1 million Population (2011)
24.7 billion USD GDP (2011)
22,112 USD GDP per capita (2011)

FIGURE 1: GDP PER CAPITA FOR 2011

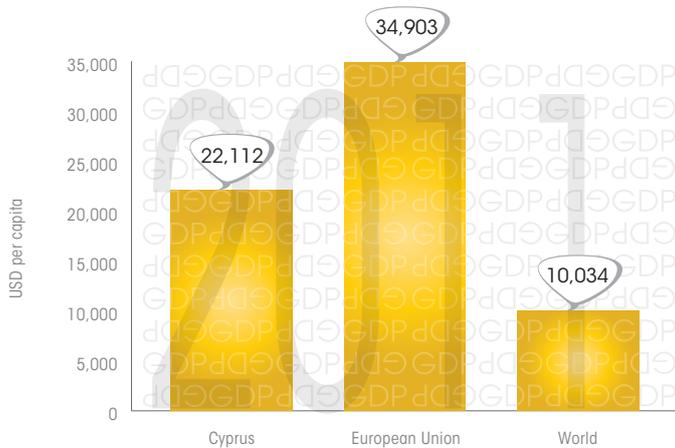
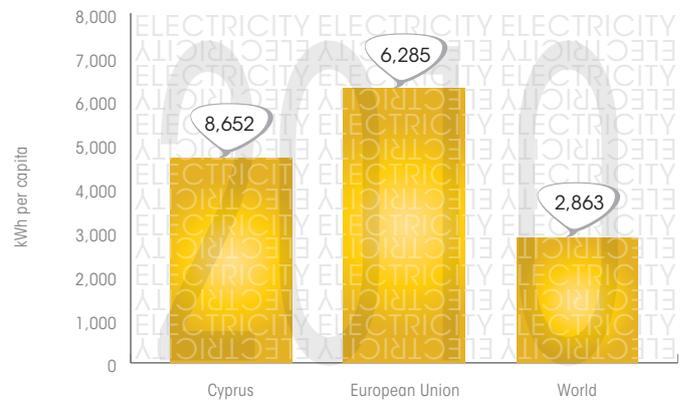


FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2010



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ENERGY NATIONAL PROFILE 2011

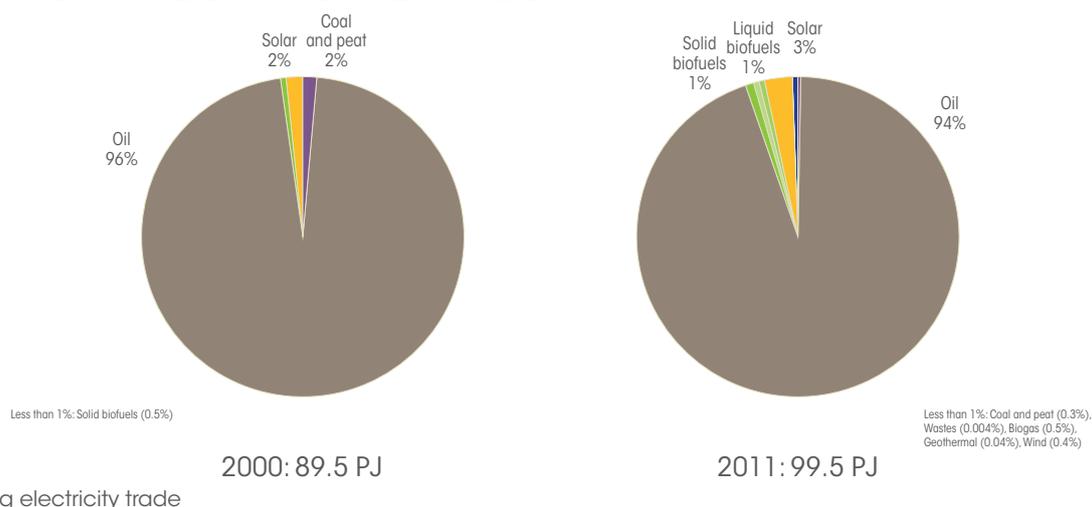
- Total Primary Energy Supply: 99.3 PJ - Of which renewables: 5.1 PJ (5.1%)
- Energy self-sufficiency: 4.1%
- Fuel imports: 2.2 billion USD (25.6% of total imports)
- Electricity generation: 4,929 GWh - Of which renewables: 178.0 GWh (3.6%)
- Electricity use per capita: 4,271 kWh
- Electrical capacity: 1,742 MW - Of which renewables: 160 MW (9.2%)
- Electricity access rate: 99.9%
- Share of population using solid fuels*: < 5%

* 2010

TARGETS:

- 13% of final energy from renewables by 2020
- At least 10% of transport energy from renewables by 2020

FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2011



POLICIES IN PLACE TO PROMOTE RENEWABLE ENERGY SINCE THE RIO CONFERENCE OF 1992



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WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2013: Ranked 36 out of 185

RENEWABLE ENERGY PROJECTS REPORTED IN THE BNEF DATABASE:

- 3.4 MW of biomass-fired capacity addition announced (4 projects)
- 1.3 MW of solar photovoltaic capacity addition announced (1 project)
- 110 MW of wind capacity addition announced (3 projects)

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: 5

RENEWABLE ENERGY RESOURCES: ● High ● Medium ● Low ● Unknown ✕ Not applicable

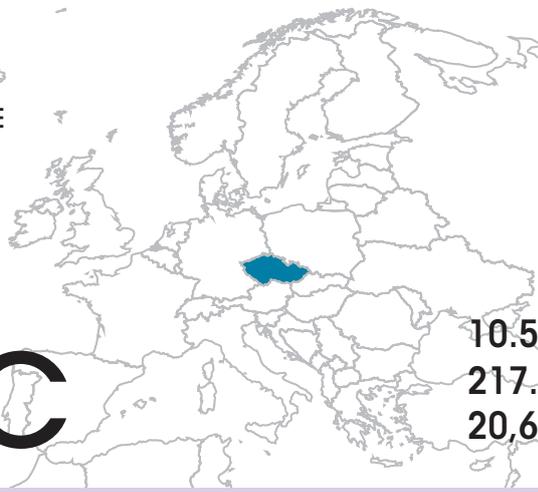


Note: The information on resources should be taken as an indication only. It refers to a general trend of available resources, and does not pre-judge the feasibility of individual projects. The thresholds are indicative, and do not refer to any technological choice. The analysis is based on the literature.

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Units: USD: United States dollar; kWh: kilowatt-hour; GWh: gigawatt-hour (1 GWh=10⁶ kWh); TWh: terawatt-hour (1 TWh=10³ GWh); PJ: petajoule; MW: megawatt; GW: gigawatt (1 GW=10³ MW). Please also refer to the glossary for explanations on the terms used in the country profile.

CZECH REPUBLIC



10.5 million Population (2011)
217.0 billion USD GDP (2011)
20,677 USD GDP per capita (2011)

FIGURE 1: GDP PER CAPITA FOR 2011

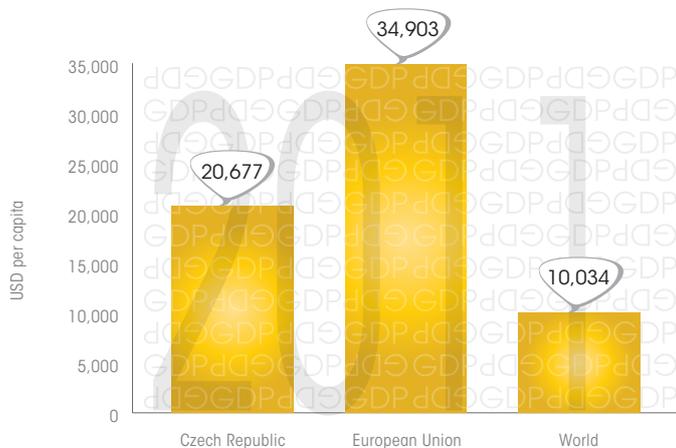
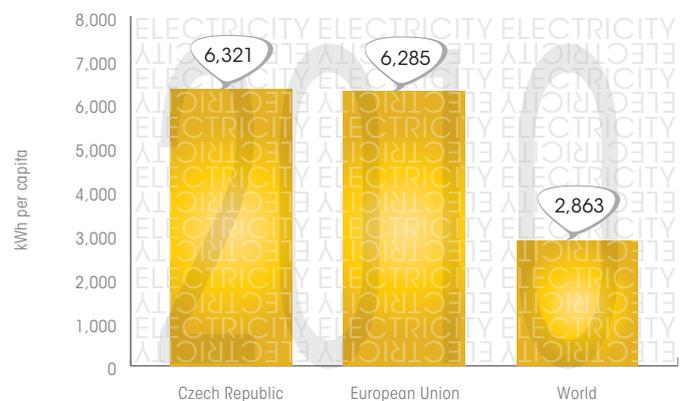


FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2010



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ENERGY NATIONAL PROFILE 2011

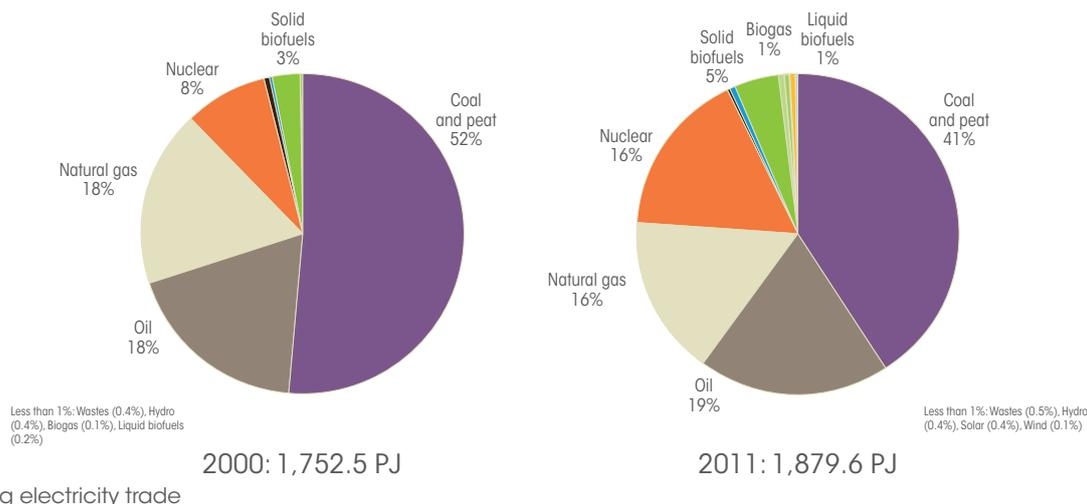
- Total Primary Energy Supply: 1,818.3 PJ - Of which renewables: 125.2 PJ (6.9%)
- Energy self-sufficiency: 73.8%
- Fuel imports: 16.0 billion USD (10.6% of total imports)
- Electricity generation: 86.8 TWh - Of which renewables: 7.2 TWh (8.4%)
- Electricity use per capita: 6,289 kWh
- Electrical capacity: 20.2 GW - Of which renewables: 3,703 MW (18.3%)
- Electricity access rate: 99.9%
- Share of population using solid fuels*: < 15%

* 2010

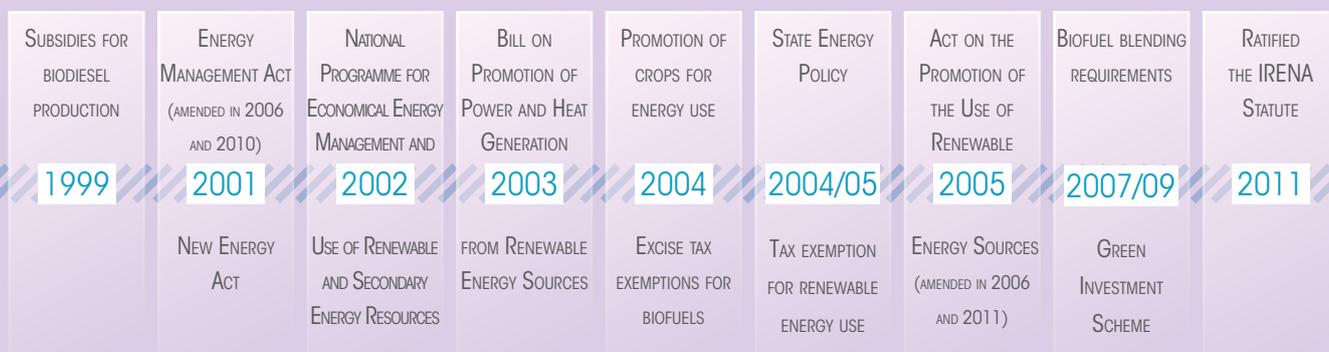
TARGETS:

- 13.5% of final energy from renewables by 2020
- 10.8% of transport energy from renewables by 2020

FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2011



POLICIES IN PLACE TO PROMOTE RENEWABLE ENERGY SINCE THE RIO CONFERENCE OF 1992



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WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2013: Ranked 65 out of 185

RENEWABLE ENERGY PROJECTS REPORTED IN THE BNEF DATABASE:

- 30 MW of biomass-fired capacity addition announced (6 projects)
- 115 MW of solar photovoltaic capacity addition announced (12 projects)
- 190 MW of wind capacity addition announced (10 projects)

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: Not applicable

RENEWABLE ENERGY RESOURCES: ● High ● Medium ● Low ● Unknown ✕ Not applicable



Note: The information on resources should be taken as an indication only. It refers to a general trend of available resources, and does not pre-judge the feasibility of individual projects. The thresholds are indicative, and do not refer to any technological choice. The analysis is based on the literature.

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Units: USD: United States dollar; kWh: kilowatt-hour; GWh: gigawatt-hour (1 GWh=10⁶ kWh); TWh: terawatt-hour (1 TWh=10³ GWh); PJ: petajoule; MW: megawatt; GW: gigawatt (1 GW=10³ MW). Please also refer to the glossary for explanations on the terms used in the country profile.

DENMARK

5.6 million Population (2011)
333.6 billion USD GDP (2011)
59,889 USD GDP per capita (2011)

FIGURE 1: GDP PER CAPITA FOR 2011

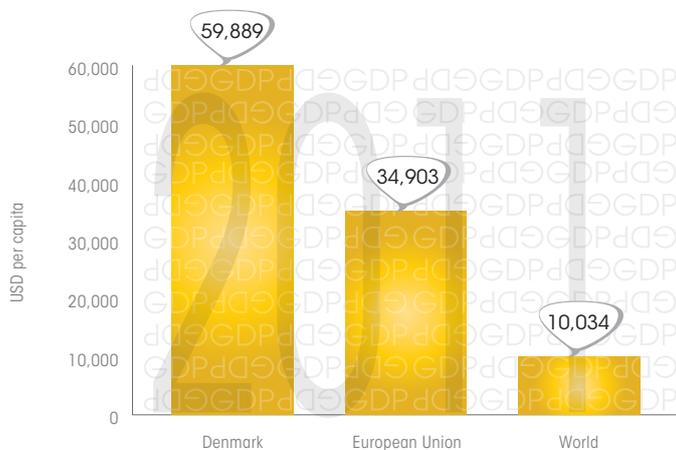
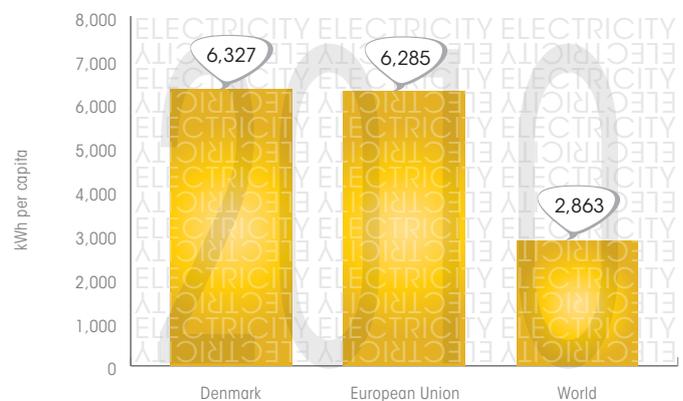


FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2010



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ENERGY NATIONAL PROFILE 2011

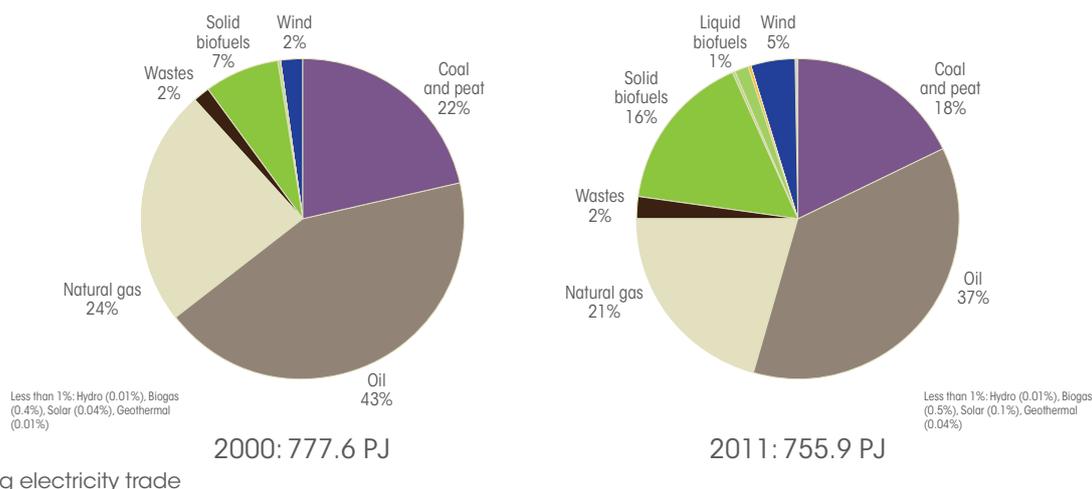
- Total Primary Energy Supply: 760.8 PJ - Of which renewables: 170.7 PJ (22.4%)
- Energy self-sufficiency: 116.7%
- Fuel imports: 9.0 billion USD (9.2% of total imports)
- Electricity generation: 35.2 TWh - Of which renewables: 14.2 TWh (40.3%)
- Electricity use per capita: 6,122 kWh
- Electrical capacity: 13.6 GW - Of which renewables: 5.3 GW (38.8%)
- Electricity access rate: 99.9%
- Share of population using solid fuels*: < 5%

* 2010

TARGETS:

- 10% of transport energy from renewables by 2020 (100% by 2050)
- 50% of electricity consumption from wind by 2020
- Individual oil boilers and coal use in Danish power plants to be phased out by 2030
- Heat and electricity supply to be based on renewables energy by 2035
- 100% of total energy consumption covered by renewables by 2050

FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2011



POLICIES IN PLACE TO PROMOTE RENEWABLE ENERGY SINCE THE RIO CONFERENCE OF 1992



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WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2013: Ranked 5 out of 185

RENEWABLE ENERGY PROJECTS REPORTED IN THE BNEF DATABASE:

- More than 1,050 MW and 500 MWth of biomass-fired capacity addition announced (4 projects)
- 73 million litres of biodiesel per year capacity addition announced (1 project)
- 836 MW of wind capacity addition announced (6 projects)

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: Not applicable

RENEWABLE ENERGY RESOURCES: ● High ● Medium ● Low ● Unknown ✕ Not applicable

Wind ● Solar ● Hydro ● Biomass ● Geothermal ● Ocean ●

Note: The information on resources should be taken as an indication only. It refers to a general trend of available resources, and does not pre-judge the feasibility of individual projects. The thresholds are indicative, and do not refer to any technological choice. The analysis is based on the literature.

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ESTONIA



1.3 million Population (2011)
22.2 billion USD GDP (2011)
16,534 USD GDP per capita (2011)

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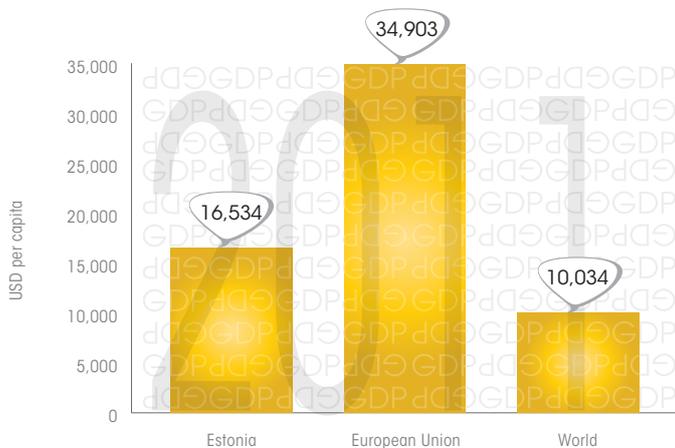
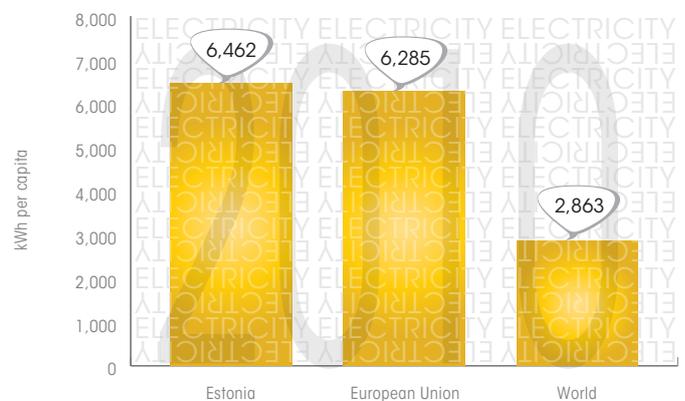


FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2010



The European Union includes Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the United Kingdom.

ENERGY NATIONAL PROFILE 2011

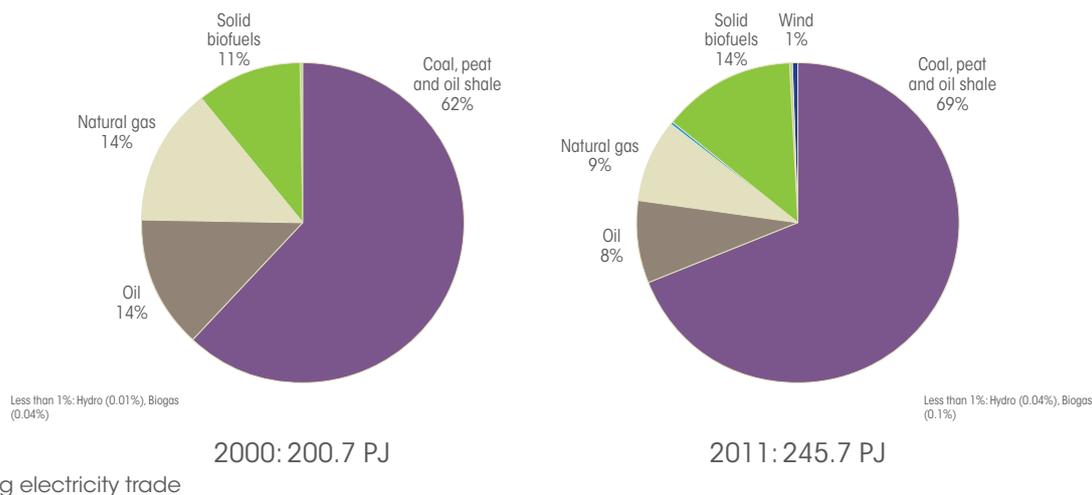
- Total Primary Energy Supply: 232.9 PJ - Of which renewables: 34.8 PJ (15.0%)
- Energy self-sufficiency: 90.6%
- Fuel imports: 3.1 billion USD (17.7% of total imports)
- Electricity generation: 12.9 TWh - Of which renewables: 1.179 GWh (9.1%)
- Electricity use per capita: 6,256 kWh
- Electrical capacity: 2,825 MW - Of which renewables: 252 MW (8.9%)
- Electricity access rate: 99.9%
- Share of population using solid fuels*: 11%

* 2010

TARGETS:

- 18% of electricity generation from renewables by 2015
- 25% of final energy from renewables by 2020
- At least 10% of transport energy from renewables by 2020

FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2011



POLICIES IN PLACE TO PROMOTE RENEWABLE ENERGY SINCE THE RIO CONFERENCE OF 1992



Note: All Member States of the European Union published National Renewable Energy Action Plans in 2010, which detail how they expect to reach their legally binding 2020 target for the share of renewable energy in their total energy consumption, as required by the renewable energy Directive (2009/28/EC)

WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2013: Ranked 21 out of 185

RENEWABLE ENERGY PROJECTS:

- 1.36 MWe/1.4 MWth biogas capacity addition under development (1 project)
- 89 MW of wind capacity addition under development (2 projects)

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: Not applicable

RENEWABLE ENERGY RESOURCES:

● High ● Medium ● Low ● Unknown ✕ Not applicable



Note: The information on resources should be taken as an indication only. It refers to a general trend of available resources, and does not pre-judge the feasibility of individual projects. The thresholds are indicative, and do not refer to any technological choice. The analysis is based on the literature.

Sources: Population and GDP: World Bank; Energy data: IEA, IRENA analysis based on Eurostat data; Share of fuel imports in total imports: World Trade Organisation; Electrical capacity: IEA, Eurostat; Electricity access rate: World Energy Outlook 2012 database (IEA); Share of population using solid fuels: World Health Organisation; Targets: REN21, IRENA; Policy/legislation: IEA, IRENA research; Ease of doing business index: World Bank; Renewable energy projects: Bloomberg New Energy Finance, IRENA research; Clean Development Mechanism projects: UNFCCC; Renewable energy resources: IRENA analysis.

Units: USD: United States dollar; kWh: kilowatt-hour; GWh: gigawatt-hour (1 GWh=10⁶ kWh); TWh: terawatt-hour (1 TWh=10³ GWh); PJ: petajoule; MW: megawatt; GW: gigawatt (1 GW=10³ MW). Please also refer to the glossary for explanations on the terms used in the country profile.

FINLAND

5.4 million Population (2011)
263.0 billion USD GDP (2011)
48,812 USD GDP per capita (2011)

FIGURE 1: GDP PER CAPITA FOR 2011

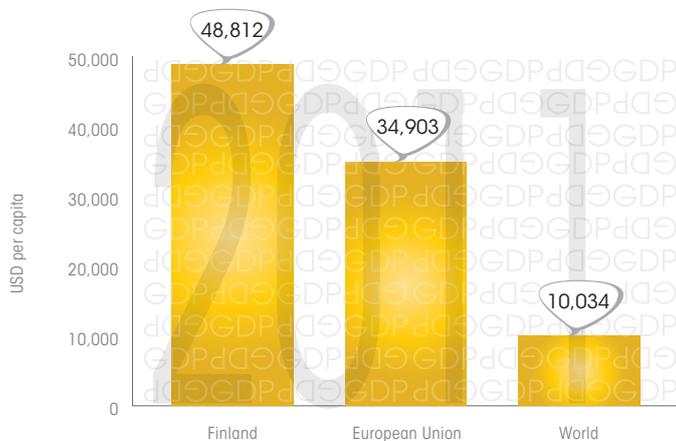
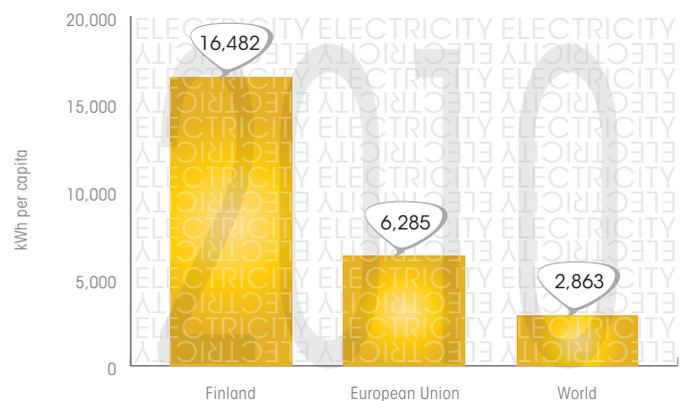


FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2010



The European Union includes Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the United Kingdom.

ENERGY NATIONAL PROFILE 2011

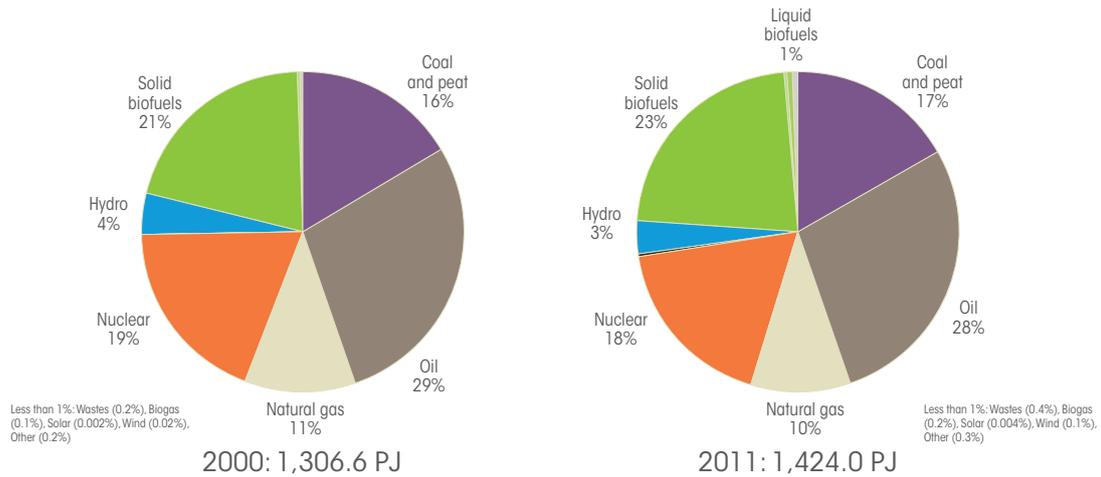
- Total Primary Energy Supply: 1,469.8 PJ - Of which renewables: 379.9 PJ (25.8%)
- Energy self-sufficiency: 49.2%
- Fuel imports: 18.3 billion USD (21.8% of total imports)
- Electricity generation: 73.5 TWh - Of which renewables: 24.2 TWh (32.9%)
- Electricity use per capita: 15,738 kWh
- Electrical capacity: 16.7 GW - Of which renewables: 5.3 GW (31.6%)
- Electricity access rate: 99.9%
- Share of population using solid fuels*: < 5%

* 2010

TARGETS:

- 38% of final energy from renewables by 2020
- At least 10% of transport energy from renewables by 2020
- Increase the use of renewable energy by at least 25% by 2015 and 40% by 2025
- 884 MW of wind capacity, 14,598 MW of hydro capacity and 13,152 MW of bioenergy capacity by 2020

FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2011



*excluding electricity trade

POLICIES IN PLACE TO PROMOTE RENEWABLE ENERGY SINCE THE RIO CONFERENCE OF 1992



Note: All Member States of the European Union published National Renewable Energy Action Plans in 2010, which detail how they expect to reach their legally binding 2020 target for the share of renewable energy in their total energy consumption, as required by the renewable energy Directive (2009/28/EC)

WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2013: Ranked 11 out of 185

RENEWABLE ENERGY PROJECTS REPORTED IN THE BNEF DATABASE:

- 90 MW and 158 MWth of biomass-fired capacity addition announced (2 projects)
- 108 million litres of biodiesel per year capacity addition announced (1 project)
- 9.8 million litres of bioethanol per year capacity addition announced (1 project)
- More than 4,550 MW of wind capacity addition announced (28 projects)

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: Not applicable

RENEWABLE ENERGY RESOURCES: ● High ● Medium ● Low ● Unknown ✕ Not applicable

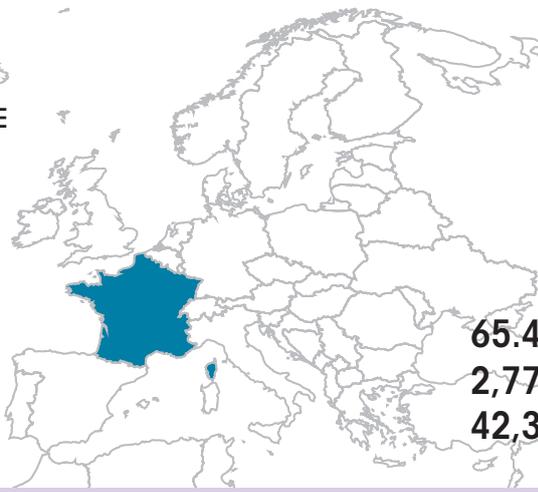
Wind ● Solar ● Hydro ● Biomass ● Geothermal ● Ocean ●

Note: The information on resources should be taken as an indication only. It refers to a general trend of available resources, and does not pre-judge the feasibility of individual projects. The thresholds are indicative, and do not refer to any technological choice. The analysis is based on the literature.

Sources: Population and GDP: World Bank; Energy data: IEA, IRENA analysis based on Eurostat data; Share of fuel imports in total imports: World Trade Organisation; Electrical capacity: IEA, Eurostat; Electricity access rate: World Energy Outlook 2012 database (IEA); Share of population using solid fuels: World Health Organisation; Targets: REN21, IRENA; Policy/legislation: IEA, IRENA research; Ease of doing business index: World Bank; Renewable energy projects: Bloomberg New Energy Finance, IRENA research; Clean Development Mechanism projects: UNFCCC; Renewable energy resources: IRENA analysis.

Units: USD: United States dollar; kWh: kilowatt-hour; GWh: gigawatt-hour (1 GWh=10⁶ kWh); TWh: terawatt-hour (1 TWh=10³ GWh); PJ: petajoule; MW: megawatt; GW: gigawatt (1 GW=10³ MW). Please also refer to the glossary for explanations on the terms used in the country profile.

FRANCE



65.4 million Population (2011)
2,773.0 billion USD GDP (2011)
42,379 USD GDP per capita (2011)

FIGURE 1: GDP PER CAPITA FOR 2011



FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2010



The European Union includes Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the United Kingdom.

ENERGY NATIONAL PROFILE 2011

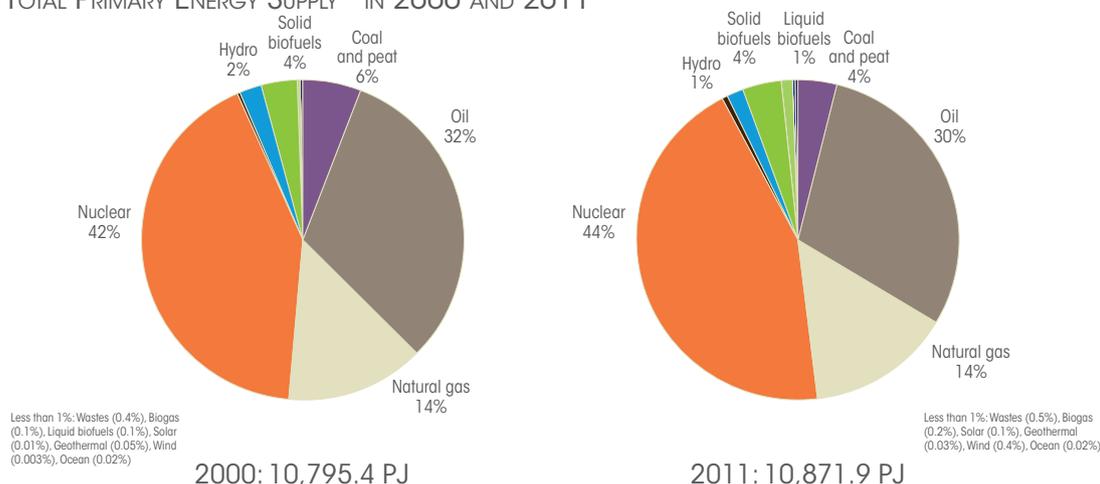
- Total Primary Energy Supply: 10,668.8 PJ - Of which renewables: 765.0 PJ (7.2%)
- Energy self-sufficiency: 53.6%
- Fuel imports: 114.4 billion USD (16.0% of total imports)
- Electricity generation: 556.9 TWh - Of which renewables: 64.8 TWh (11.6%)
- Electricity use per capita: 7,283 kWh
- Electrical capacity: 131.4 GW - Of which renewables: 29.5 GW (22.5%)
- Electricity access rate: 99.9%
- Share of population using solid fuels*: < 5%

* 2010

TARGETS:

- 23% of final energy from renewables by 2020
- 27% of electricity generation from renewables by 2020
- 10.5% of transport energy from renewables by 2020
- 25 GW of wind capacity, including 6 GW of offshore wind, by 2020
- 32% of energy consumption for heating and cooling from renewables by 2020

FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2011



*excluding electricity trade

POLICIES IN PLACE TO PROMOTE RENEWABLE ENERGY SINCE THE RIO CONFERENCE OF 1992



Note: All Member States of the European Union published National Renewable Energy Action Plans in 2010, which detail how they expect to reach their legally binding 2020 target for the share of renewable energy in their total energy consumption, as required by the renewable energy Directive (2009/28/EC)

WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2013: Ranked 34 out of 185

RENEWABLE ENERGY PROJECTS REPORTED IN THE BNEF DATABASE:

- 522 MW and 159 MWth of biomass-fired capacity addition announced (51 projects)
- 24 MWth of geothermal capacity addition announced (1 project)
- 240 million litres of biodiesel per year capacity addition announced (4 projects)
- 759 MW of solar photovoltaic capacity addition announced (33 projects)
- More than 8,100 MW of wind capacity addition announced (34 projects)
- 2 MW of marine capacity addition announced (1 project)

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: Not applicable

RENEWABLE ENERGY RESOURCES: ● High ● Medium ● Low ● Unknown ✕ Not applicable



Note: The information on resources should be taken as an indication only. It refers to a general trend of available resources, and does not pre-judge the feasibility of individual projects. The thresholds are indicative, and do not refer to any technological choice. The analysis is based on the literature.

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Units: USD: United States dollar; kWh: kilowatt-hour; GWh: gigawatt-hour (1 GWh=10⁶ kWh); TWh: terawatt-hour (1 TWh=10⁹ GWh); PJ: petajoule; MW: megawatt; GW: gigawatt (1 GW=10³ MW). Please also refer to the glossary for explanations on the terms used in the country profile.

GERMANY

81.8 million Population (2011)
3,600.8 billion USD GDP (2011)
44,021 USD GDP per capita (2011)

FIGURE 1: GDP PER CAPITA FOR 2011

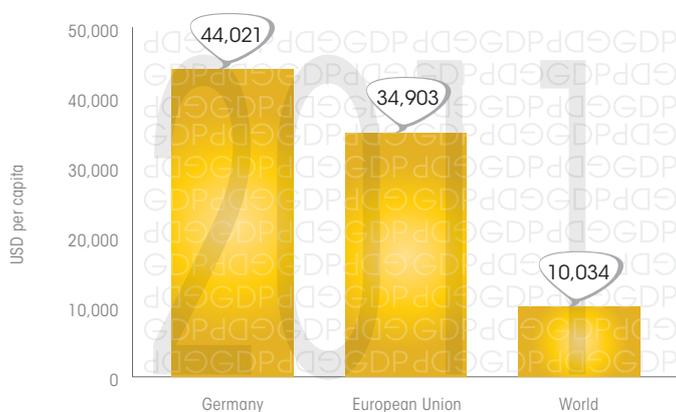
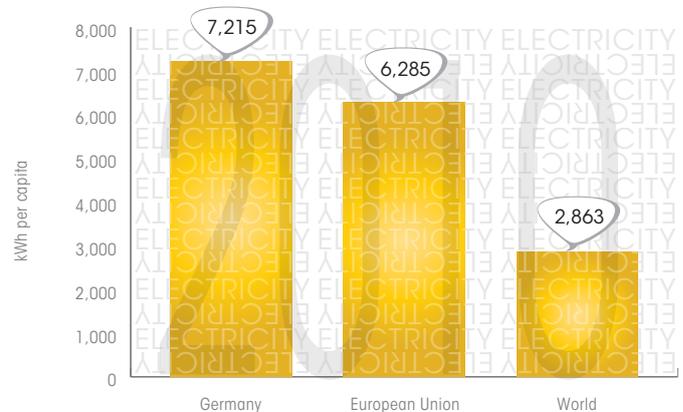


FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2010



The European Union includes Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the United Kingdom.

ENERGY NATIONAL PROFILE 2011

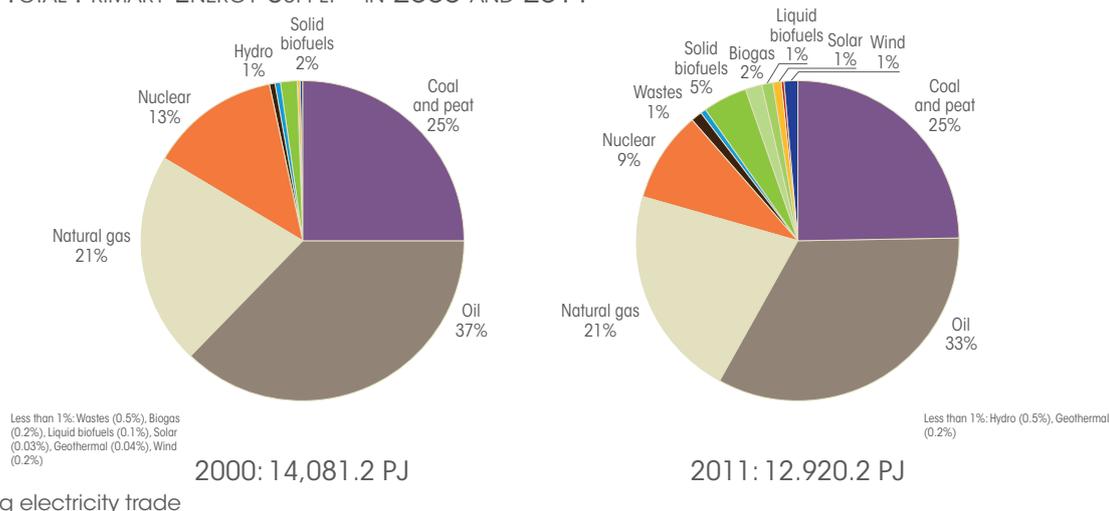
- Total Primary Energy Supply: 12,906.4 PJ - Of which renewables: 1,307.1 PJ (10.1%)
- Energy self-sufficiency: 40.6%
- Fuel imports: 169.0 billion USD (13.5% of total imports)
- Electricity generation: 602.6 TWh - Of which renewables: 123.1 TWh (20.4%)
- Electricity use per capita: 7,094 kWh
- Electrical capacity: 171.7 GW - Of which renewables: 66.1 GW (38.5%)
- Electricity access rate: 99.9%
- Share of population using solid fuels*: < 5%

* 2010

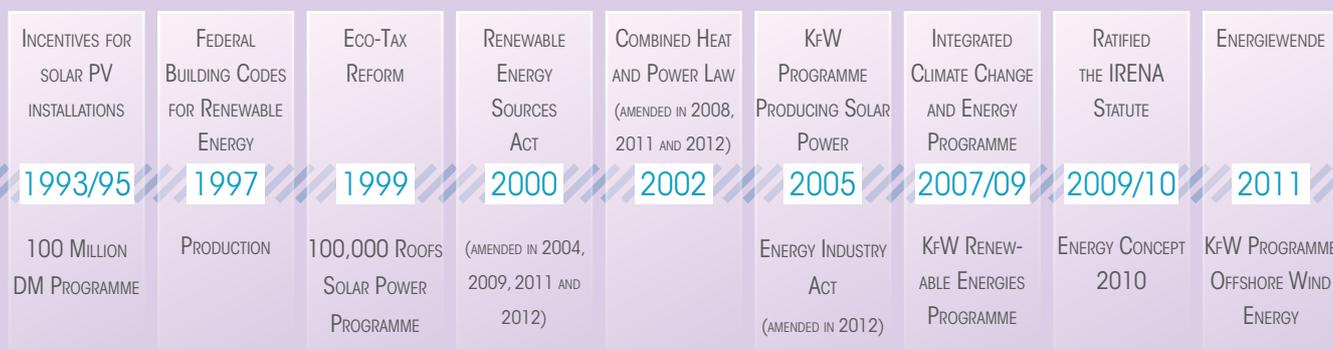
TARGETS:

- 18% of final energy from renewables by 2020 (30% by 2030, 45% by 2040, 60% by 2050)
- 35% of electricity generation from renewables by 2020 (50% by 2030, 65% by 2040, 80% by 2050)
- At least 10% of transport energy from renewables by 2020
- 14% of total heat supply from renewables by 2020

FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2011



POLICIES IN PLACE TO PROMOTE RENEWABLE ENERGY SINCE THE RIO CONFERENCE OF 1992



Note: All Member States of the European Union published National Renewable Energy Action Plans in 2010, which detail how they expect to reach their legally binding 2020 target for the share of renewable energy in their total energy consumption, as required by the renewable energy Directive (2009/28/EC)

WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2013: Ranked 20 out of 185

RENEWABLE ENERGY PROJECTS REPORTED IN THE BNEF DATABASE:

- 18 MW and 57 MWth of biomass-fired capacity addition announced (4 projects)
- More than 33 MW and 105 MWth of geothermal capacity addition announced (6 projects)
- 61.2 million litres of biodiesel per year capacity addition announced (1 project)
- 182 MW of solar photovoltaic capacity addition announced (10 projects)
- More than 12,500 MW of wind capacity addition announced (44 projects)

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: Not applicable

RENEWABLE ENERGY RESOURCES: ● High ● Medium ● Low ● Unknown ✕ Not applicable

Wind ● Solar ● Hydro ● Biomass ● Geothermal ● Ocean ●

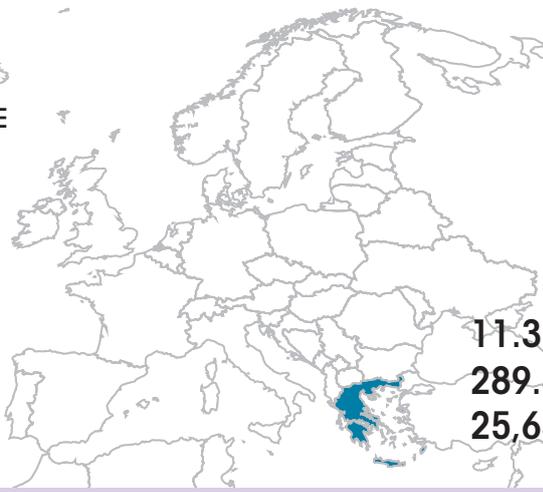
Note: The information on resources should be taken as an indication only. It refers to a general trend of available resources, and does not pre-judge the feasibility of individual projects. The thresholds are indicative, and do not refer to any technological choice. The analysis is based on the literature.

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Units: USD: United States dollar; kWh: kilowatt-hour; GWh: gigawatt-hour (1 GWh=10⁶ kWh); TWh: terawatt-hour (1 TWh=10³ GWh); PJ: petajoule; MW: megawatt; GW: gigawatt (1 GW=10³ MW). Please also refer to the glossary for explanations on the terms used in the country profile.

IRENA welcomes your comments and feedback at statistics@irena.org

GREECE



11.3 million Population (2011)
289.6 billion USD GDP (2011)
25,630 USD GDP per capita (2011)

FIGURE 1: GDP PER CAPITA FOR 2011

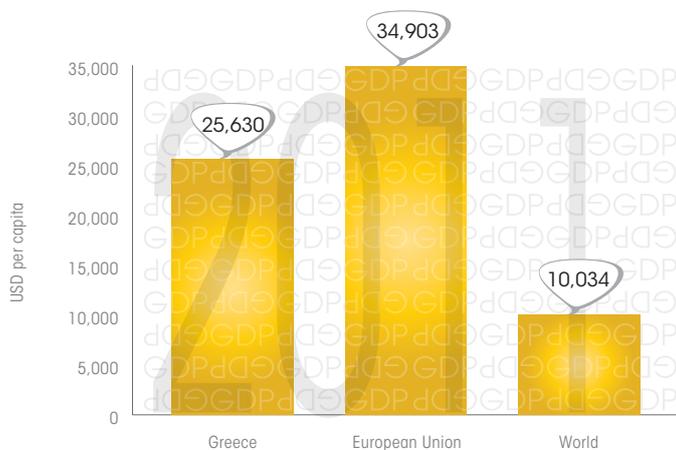
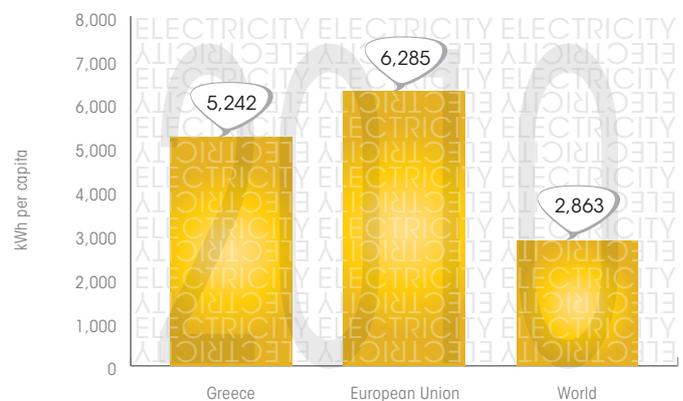


FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2010



The European Union includes Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the United Kingdom.

ENERGY NATIONAL PROFILE 2011

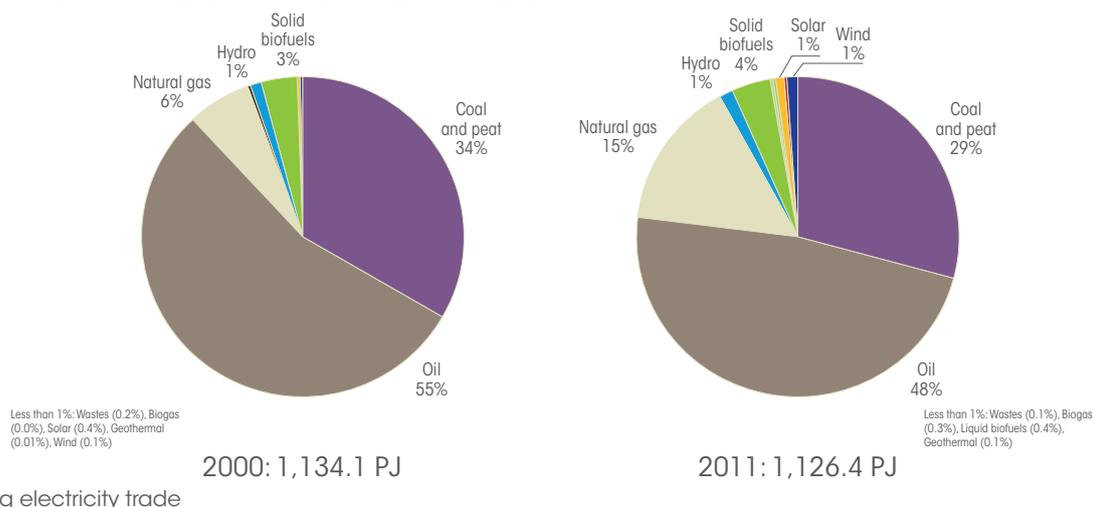
- Total Primary Energy Supply: 1,138.0 PJ - Of which renewables: 89.3 PJ (7.8%)
- Energy self-sufficiency: 35.4%
- Fuel imports: 16.5 billion USD (27.2% of total imports)
- Electricity generation: 52.9 TWh - Of which renewables: 8.1 TWh (13.8%)
- Electricity use per capita: 5,296 kWh
- Electrical capacity: 16.5 GW - Of which renewables: 4,822 MW (29.2%)
- Electricity access rate: 99.9%
- Share of population using solid fuels*: < 5%

* 2010

TARGETS:

- 20% of final energy from renewables by 2020
- 40% of electricity generation from renewables by 2020
- At least 10% of transport energy from renewables by 2020
- 2.2 GW of solar photovoltaic capacity by 2030
- 20% of renewable energy in heating and cooling by 2020

FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2011



POLICIES IN PLACE TO PROMOTE RENEWABLE ENERGY SINCE THE RIO CONFERENCE OF 1992



Note: All Member States of the European Union published National Renewable Energy Action Plans in 2010, which detail how they expect to reach their legally binding 2020 target for the share of renewable energy in their total energy consumption, as required by the renewable energy Directive (2009/28/EC)

WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2013: Ranked 78 out of 185

RENEWABLE ENERGY PROJECTS REPORTED IN THE BNEF DATABASE:

- More than 2,050 MW of solar photovoltaic capacity addition announced (12 projects)
- 1,800 MW of wind capacity addition announced (5 projects)

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: Not applicable

RENEWABLE ENERGY RESOURCES: ● High ● Medium ● Low ● Unknown ✕ Not applicable

Wind ● Solar ● Hydro ● Biomass ● Geothermal ● Ocean ●

Note: The information on resources should be taken as an indication only. It refers to a general trend of available resources, and does not pre-judge the feasibility of individual projects. The thresholds are indicative, and do not refer to any technological choice. The analysis is based on the literature.

Sources: Population and GDP: World Bank; Energy data: IEA, IRENA analysis based on Eurostat data; Share of fuel imports in total imports: World Trade Organisation; Electrical capacity: IEA, Eurostat; Electricity access rate: World Energy Outlook 2012 database (IEA); Share of population using solid fuels: World Health Organisation; Targets: REN21, IRENA; Policy/legislation: IEA, IRENA research; Ease of doing business index: World Bank; Renewable energy projects: Bloomberg New Energy Finance, IRENA research; Clean Development Mechanism projects: UNFCCC; Renewable energy resources: IRENA analysis.

Units: USD: United States dollar; kWh: kilowatt-hour; GWh: gigawatt-hour (1 GWh=10⁶ kWh); TWh: terawatt-hour (1 TWh=10³ GWh); PJ: petajoule; MW: megawatt; GW: gigawatt (1 GW=10³ MW). Please also refer to the glossary for explanations on the terms used in the country profile.

HUNGARY



10.0 million Population (2011)
140.0 billion USD GDP (2011)
14,043 USD GDP per capita (2011)

FIGURE 1: GDP PER CAPITA FOR 2011

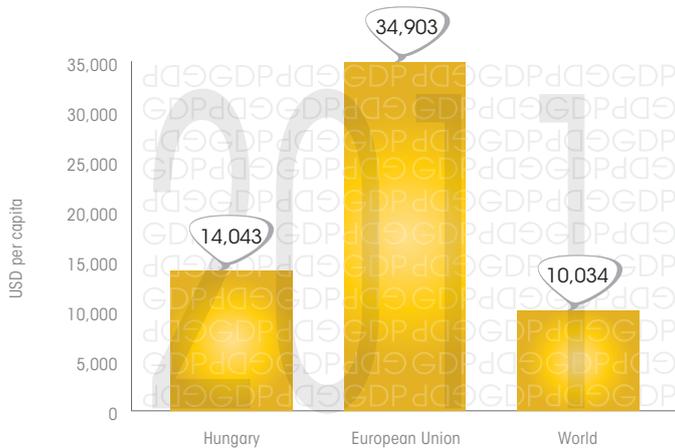
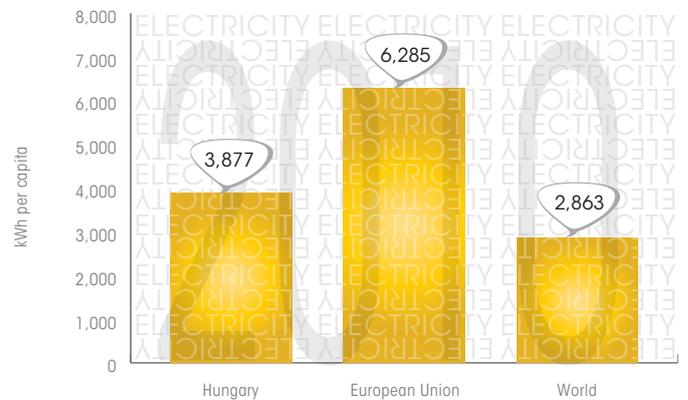


FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2010



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ENERGY NATIONAL PROFILE 2011

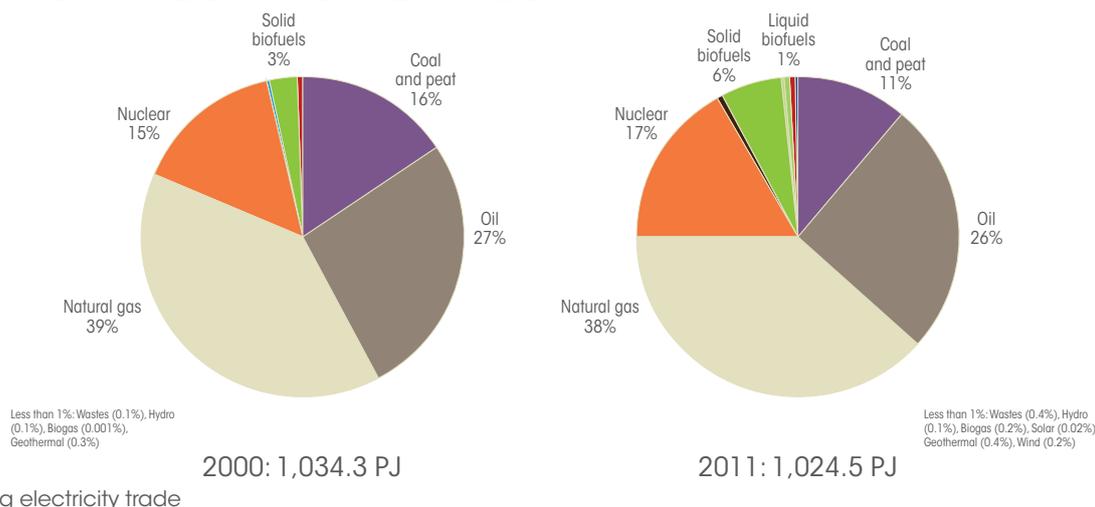
- Total Primary Energy Supply: 1,048.5 PJ - Of which renewables: 79.0 PJ (7.5%)
- Energy self-sufficiency: 43.3%
- Fuel imports: 12.5 billion USD (12.2% of total imports)
- Electricity generation: 36.0 TWh - Of which renewables: 2,708 GWh (7.5%)
- Electricity use per capita: 3,895 kWh
- Electrical capacity: 9.7 GW - Of which renewables: 918 MW (9.5%)
- Electricity access rate: 99.9%
- Share of population using solid fuels*: < 5%

* 2010

TARGETS:

- 13% of final energy from renewables by 2020
- At least 10% of transport energy from renewables by 2020

FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2011



POLICIES IN PLACE TO PROMOTE RENEWABLE ENERGY SINCE THE RIO CONFERENCE OF 1992



Note: All Member States of the European Union published National Renewable Energy Action Plans in 2010, which detail how they expect to reach their legally binding 2020 target for the share of renewable energy in their total energy consumption, as required by the renewable energy Directive (2009/28/EC)

WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2013: Ranked 54 out of 185

RENEWABLE ENERGY PROJECTS REPORTED IN THE BNEF DATABASE:

- 91 MW and 110 MWth of biomass-fired capacity addition announced (4 projects)
- 12 MWth of geothermal capacity addition announced (1 project)
- 20 MW of wind capacity addition announced (1 project)

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: Not applicable

RENEWABLE ENERGY RESOURCES: ● High ● Medium ● Low ● Unknown ✗ Not applicable

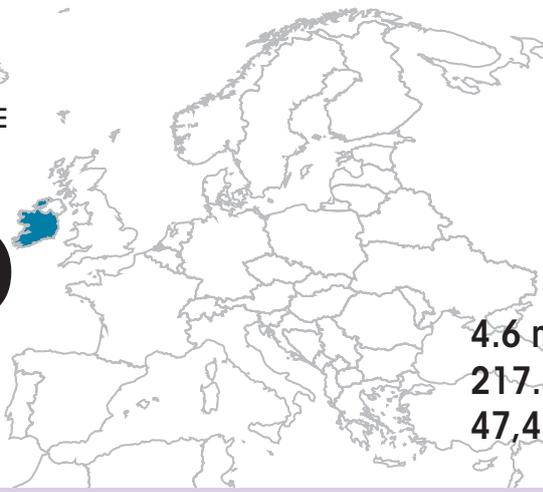


Note: The information on resources should be taken as an indication only. It refers to a general trend of available resources, and does not pre-judge the feasibility of individual projects. The thresholds are indicative, and do not refer to any technological choice. The analysis is based on the literature.

Sources: Population and GDP: World Bank; Energy data: IEA, IRENA analysis based on Eurostat data; Share of fuel imports in total imports: World Trade Organisation; Electrical capacity: IEA, Eurostat; Electricity access rate: World Energy Outlook 2012 database (IEA); Share of population using solid fuels: World Health Organisation; Targets: REN21, IRENA; Policy/legislation: IEA, IRENA research; Ease of doing business index: World Bank; Renewable energy projects: Bloomberg New Energy Finance, IRENA research; Clean Development Mechanism projects: UNFCCC; Renewable energy resources: IRENA analysis.

Units: USD: United States dollar; kWh: kilowatt-hour; GWh: gigawatt-hour (1 GWh=10⁶ kWh); TWh: terawatt-hour (1 TWh=10³ GWh); PJ: petajoule; MW: megawatt; GW: gigawatt (1 GW=10³ MW). Please also refer to the glossary for explanations on the terms used in the country profile.

IRELAND



4.6 million Population (2011)
217.3 billion USD GDP (2011)
47,478 USD GDP per capita (2011)

FIGURE 1: GDP PER CAPITA FOR 2011

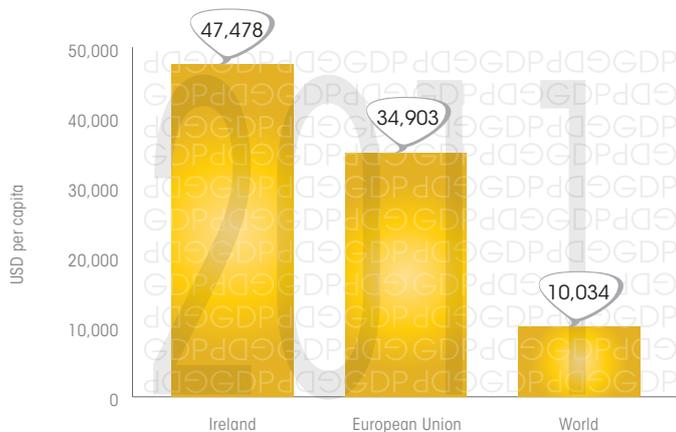
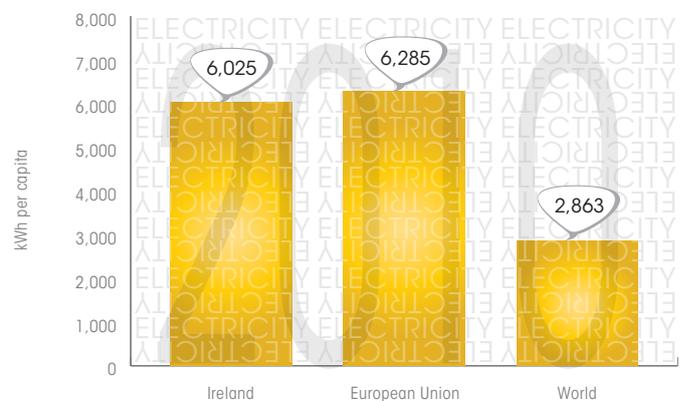


FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2010



The European Union includes Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the United Kingdom.

ENERGY NATIONAL PROFILE 2011

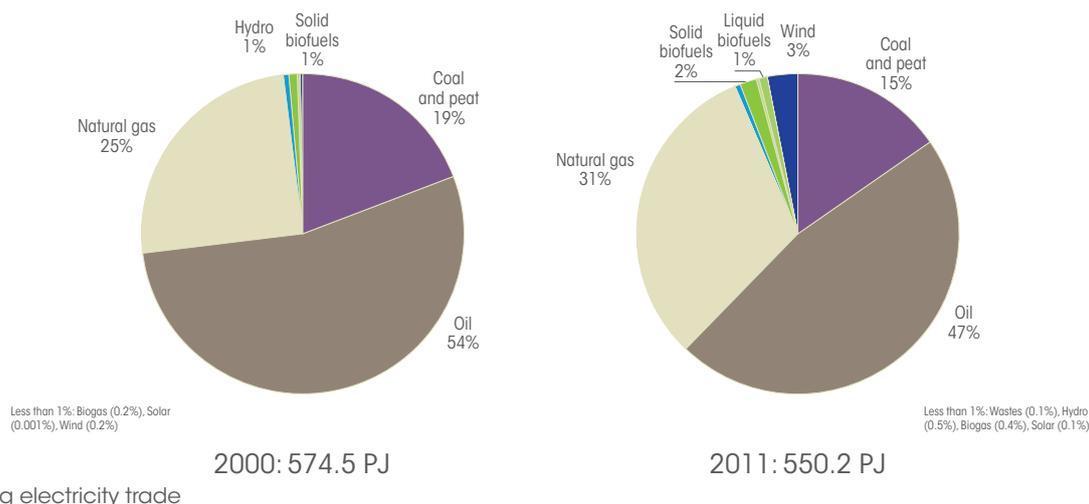
- Total Primary Energy Supply: 551.9 PJ - Of which renewables: 34.3 PJ (6.2%)
- Energy self-sufficiency: 13.7%
- Fuel imports: 9.5 billion USD (14.3% of total imports)
- Electricity generation: 27.5 TWh - Of which renewables: 5.4 TWh (19.7%)
- Electricity use per capita: 5,663 kWh
- Electrical capacity: 8.8 GW - Of which renewables: 1,907 MW (21.7%)
- Electricity access rate: 99.9%
- Share of population using solid fuels*: < 5%

* 2010

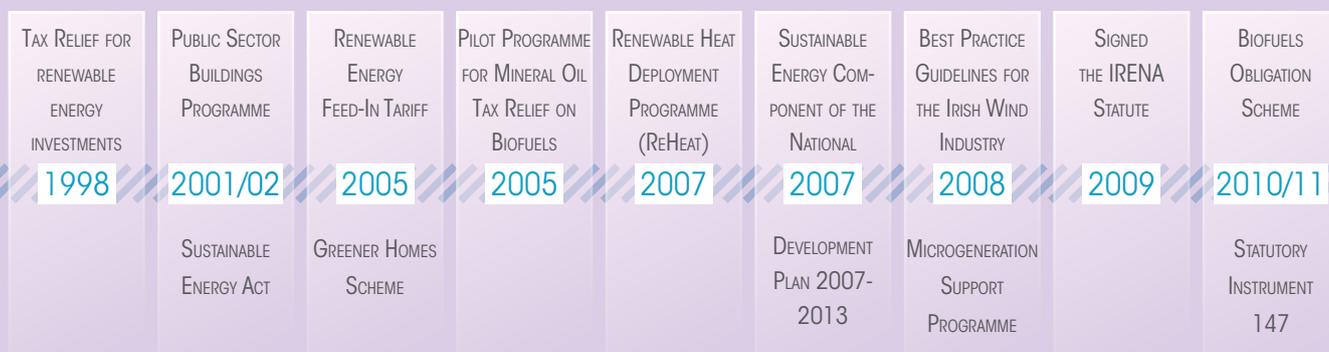
TARGETS:

- 16% of final energy from renewables by 2020
- 40% of electricity generation from renewables by 2020
- At least 10% of transport energy from renewables by 2020
- 15% of energy consumption for heating from renewables by 2020

FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2011



POLICIES IN PLACE TO PROMOTE RENEWABLE ENERGY SINCE THE RIO CONFERENCE OF 1992



Note: All Member States of the European Union published National Renewable Energy Action Plans in 2010, which detail how they expect to reach their legally binding 2020 target for the share of renewable energy in their total energy consumption, as required by the renewable energy Directive (2009/28/EC)

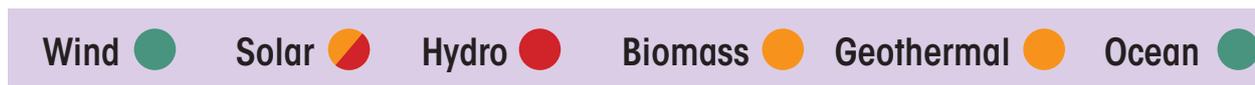
WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2013: Ranked 15 out of 185

RENEWABLE ENERGY PROJECTS REPORTED IN THE BNEF DATABASE:

- 16 MW of biomass-fired capacity addition announced (1 project)
- 542 MW of wind capacity addition announced (15 projects)
- 250 MW of marine capacity addition announced (2 projects)

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: Not applicable

RENEWABLE ENERGY RESOURCES: ● High ● Medium ● Low ● Unknown ✕ Not applicable

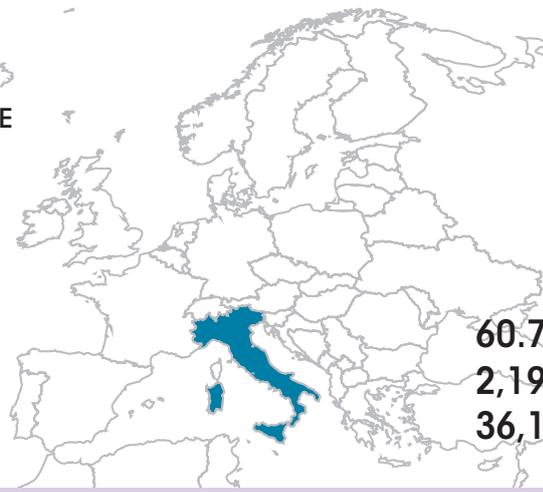


Note: The information on resources should be taken as an indication only. It refers to a general trend of available resources, and does not pre-judge the feasibility of individual projects. The thresholds are indicative, and do not refer to any technological choice. The analysis is based on the literature.

Sources: Population and GDP: World Bank; Energy data: IEA, IRENA analysis based on Eurostat data; Share of fuel imports in total imports: World Trade Organisation; Electrical capacity: IEA, Eurostat; Electricity access rate: World Energy Outlook 2012 database (IEA); Share of population using solid fuels: World Health Organisation; Targets: REN21, IRENA; Policy/legislation: IEA, IRENA research; Ease of doing business index: World Bank; Renewable energy projects: Bloomberg New Energy Finance, IRENA research; Clean Development Mechanism projects: UNFCCC; Renewable energy resources: IRENA analysis.

Units: USD: United States dollar; kWh: kilowatt-hour; GWh: gigawatt-hour (1 GWh=10⁶ kWh); TWh: terawatt-hour (1 TWh=10³ GWh); PJ: petajoule; MW: megawatt; GW: gigawatt (1 GW=10³ MW). Please also refer to the glossary for explanations on the terms used in the country profile.

ITALY

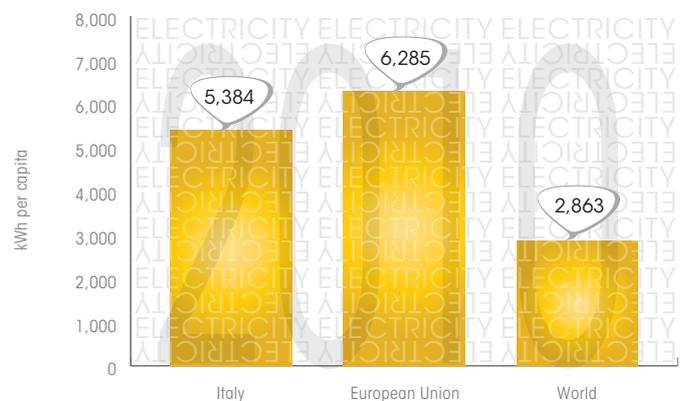


60.7 million Population (2011)
2,194.0 billion USD GDP (2011)
36,130 USD GDP per capita (2011)

FIGURE 1: GDP PER CAPITA FOR 2011



FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2010



The European Union includes Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the United Kingdom.

ENERGY NATIONAL PROFILE 2011

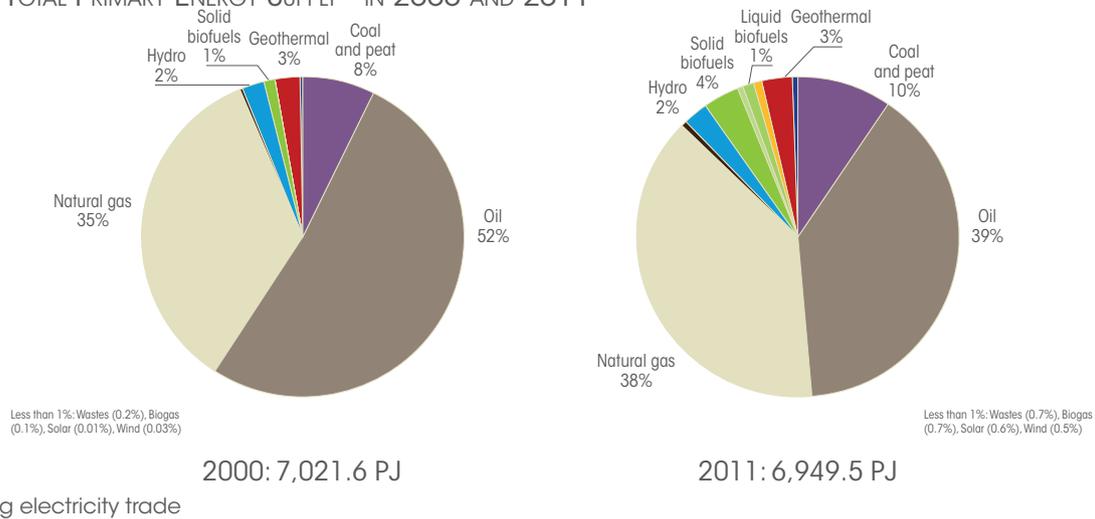
- Total Primary Energy Supply: 7,114.1 PJ - Of which renewables: 834.9 PJ (11.7%)
- Energy self-sufficiency: 19.2%
- Fuel imports: 110.5 billion USD (19.8% of total imports)
- Electricity generation: 300.6 TWh - Of which renewables: 83.0 TWh (27.6%)
- Electricity use per capita: 5,393 kWh
- Electrical capacity: 118.4 GW - Of which renewables: 37.3 GW (31.5%)
- Electricity access rate: 99.9%
- Share of population using solid fuels*: < 5%

* 2010

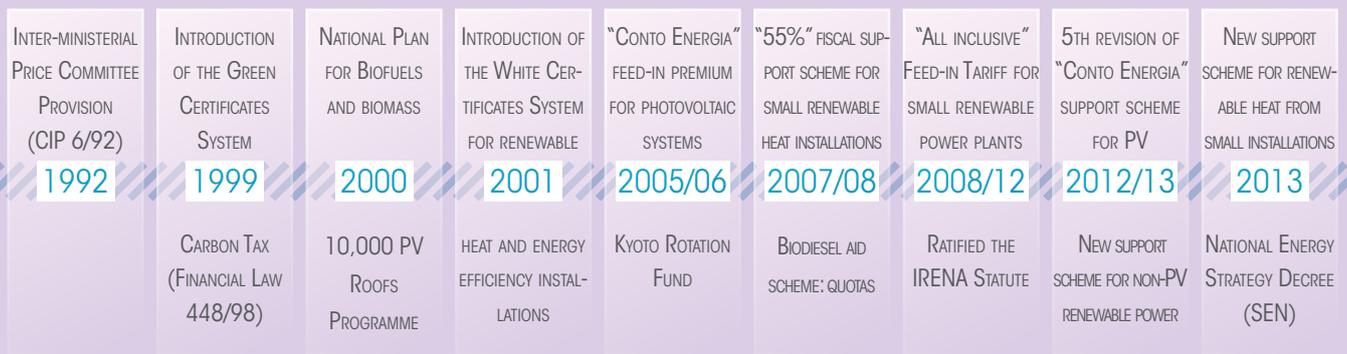
TARGETS:

- 19-20% of final energy consumption from renewables by 2020
- 10% of transport energy from renewables by 2020
- 35-38% of electricity generation from renewables by 2020, corresponding to 120-130 TWh of electricity generation from renewables (including about 30 TWh produced by 27GW of PV)
- 20% of heat consumption from renewables by 2020

FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2011



POLICIES IN PLACE TO PROMOTE RENEWABLE ENERGY SINCE THE RIO CONFERENCE OF 1992



Notes: 1) All Member States of the European Union published National Renewable Energy Action Plans in 2010, which detail how they expect to reach their legally binding 2020 target for the share of renewable energy in their total energy consumption, as required by the renewable energy Directive (2009/28/EC)
2) With the adoption of the National Energy Strategy (SEN) in 2013 Italy has introduced new voluntary targets on renewable energy that exceed European 2020 targets.

WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2013: Ranked 73 out of 185

RENEWABLE ENERGY PROJECTS REPORTED IN THE BNEF DATABASE:

- 78 MW and 8 MWth of biomass-fired capacity addition announced (5 projects)
- 40 MW of geothermal capacity addition announced (1 project)
- 380 million litres of biodiesel per year capacity addition announced (1 project)
- 254 million litres of bioethanol per year capacity addition announced (1 project)
- Around 900 MW of solar photovoltaic capacity addition announced (73 projects)
- 131 MW of solar thermal capacity addition announced (4 projects)
- Around 2,450 MW of wind capacity addition announced (22 projects)

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: Not applicable

RENEWABLE ENERGY RESOURCES: ● High ● Medium ● Low ● Unknown ✕ Not applicable

Wind ● Solar ● Hydro ● Biomass ● Geothermal ● Ocean ●

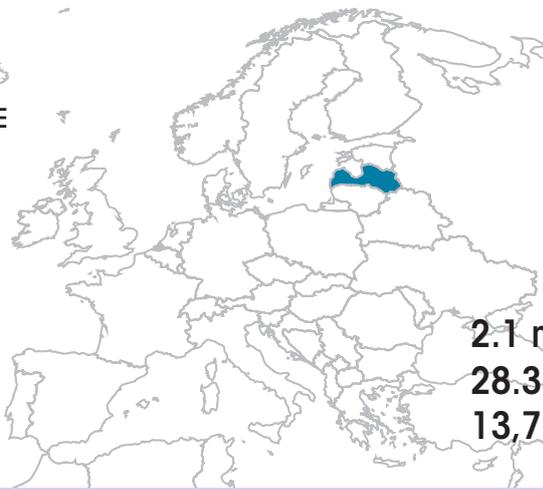
Note: The information on resources should be taken as an indication only. It refers to a general trend of available resources, and does not pre-judge the feasibility of individual projects. The thresholds are indicative, and do not refer to any technological choice. The analysis is based on the literature.

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Units: USD: United States dollar; kWh: kilowatt-hour; GWh: gigawatt-hour (1 GWh=10⁶ kWh); TWh: terawatt-hour (1 TWh=10³ GWh); PJ: petajoule; MW: megawatt; GW: gigawatt (1 GW=10³ MW). Please also refer to the glossary for explanations on the terms used in the country profile.

IRENA welcomes your comments and feedback at statistics@irena.org

LATVIA



2.1 million Population (2011)
28.3 billion USD GDP (2011)
13,727 USD GDP per capita (2011)

FIGURE 1: GDP PER CAPITA FOR 2011

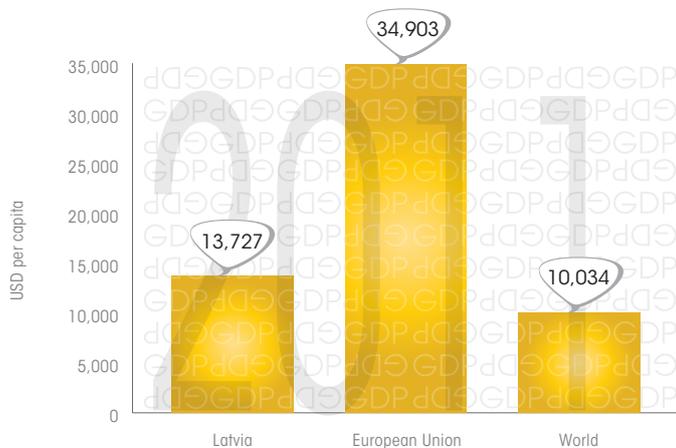
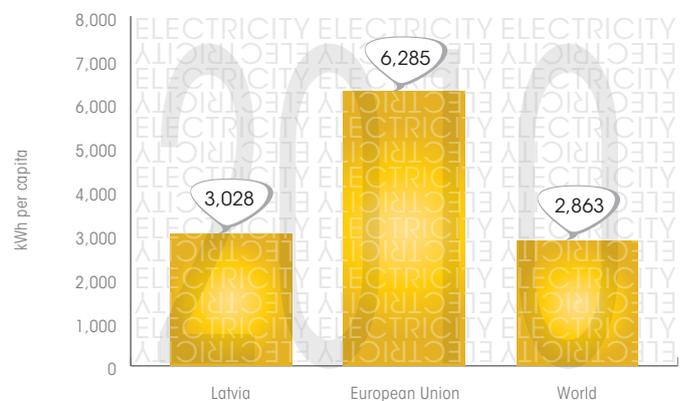


FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2010



The European Union includes Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the United Kingdom.

ENERGY NATIONAL PROFILE 2011

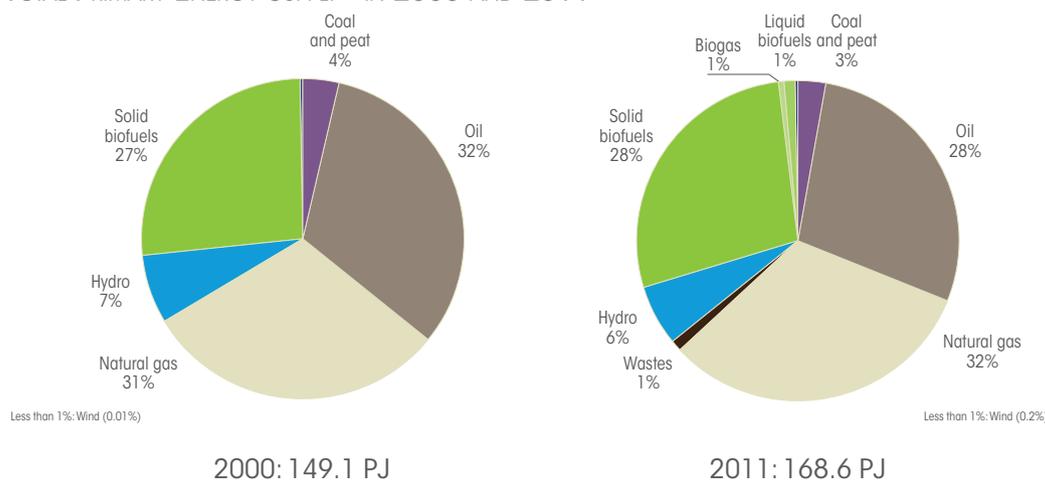
- Total Primary Energy Supply: 173.1 PJ - Of which renewables: 60.1 PJ (34.7%)
- Energy self-sufficiency: 50.4%
- Fuel imports: 2.6 billion USD (15.9% of total imports)
- Electricity generation: 6.1 TWh - Of which renewables: 3,078 GWh (50.5%)
- Electricity use per capita: 3,267 kWh
- Electrical capacity: 2,576 MW - Of which renewables: 1,642 GW (63.7%)
- Electricity access rate: 99.9%
- Share of population using solid fuels*: 5%

* 2010

TARGETS:

- 40% of final energy from renewables by 2020
- At least 10% of transport energy from renewables by 2020

FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2011



*excluding electricity trade

POLICIES IN PLACE TO PROMOTE RENEWABLE ENERGY SINCE THE RIO CONFERENCE OF 1992



Note: All Member States of the European Union published National Renewable Energy Action Plans in 2010, which detail how they expect to reach their legally binding 2020 target for the share of renewable energy in their total energy consumption, as required by the renewable energy Directive (2009/28/EC)

WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2013: Ranked 25 out of 185

RENEWABLE ENERGY PROJECTS REPORTED IN THE BNEF DATABASE:

- 52 MW of biogas capacity addition announced (50 projects)
- 1.1 MW of hydro capacity addition announced (2 projects)
- 102 MW of biomass capacity addition announced (50 projects)

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: Not applicable

RENEWABLE ENERGY RESOURCES: ● High ● Medium ● Low ● Unknown ✕ Not applicable



Note: The information on resources should be taken as an indication only. It refers to a general trend of available resources, and does not pre-judge the feasibility of individual projects. The thresholds are indicative, and do not refer to any technological choice. The analysis is based on the literature.

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Units: USD: United States dollar; kWh: kilowatt-hour; GWh: gigawatt-hour (1 GWh=10⁶ kWh); TWh: terawatt-hour (1 TWh=10³ GWh); PJ: petajoule; MW: megawatt; GW: gigawatt (1 GW=10³ MW). Please also refer to the glossary for explanations on the terms used in the country profile.

LITHUANIA

3.0 million Population (2011)
42.7 billion USD GDP (2011)
14,100 USD GDP per capita (2011)

FIGURE 1: GDP PER CAPITA FOR 2011

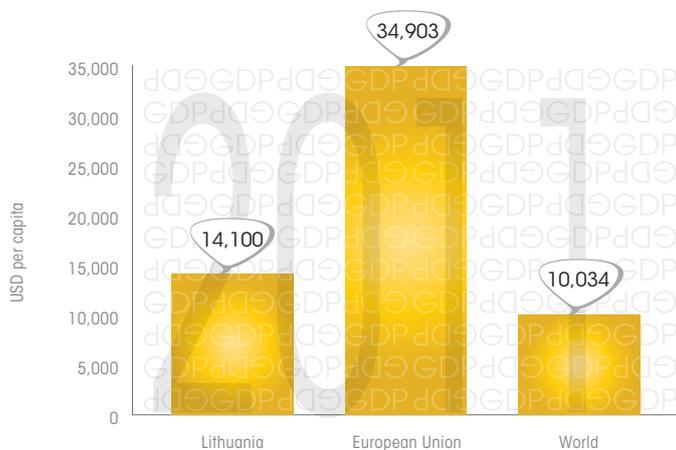
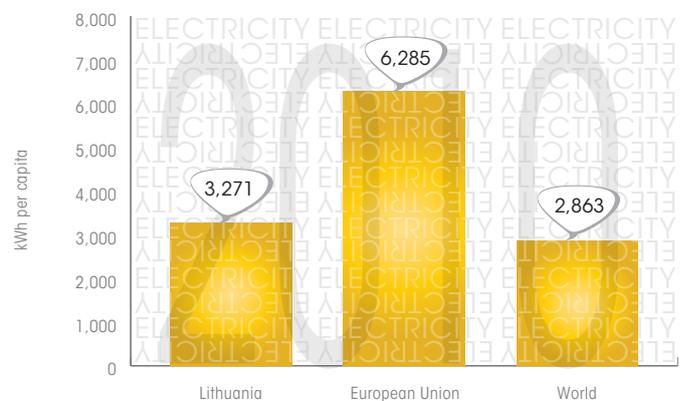


FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2010



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ENERGY NATIONAL PROFILE 2011

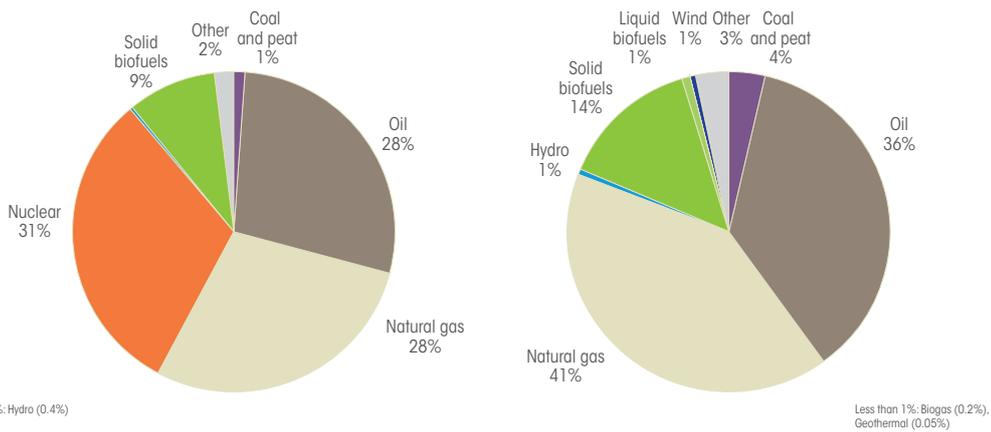
- Total Primary Energy Supply: 293.7 PJ - Of which renewables: 44.2 PJ (15.1%)
- Energy self-sufficiency: 18.6%
- Fuel imports: 10.6 billion USD (33.7% of total imports)
- Electricity generation: 4,246 GWh - Of which renewables: 1,113 GWh (26.2%)
- Electricity use per capita: 3,527 kWh
- Electrical capacity: 3,691 MW - Of which renewables: 351 MW (9.5%)
- Electricity access rate: 99.9%
- Share of population using solid fuels*: 21%

* 2010

TARGETS:

- 23% of final energy from renewables by 2020
- At least 10% of transport energy from renewables by 2020

FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2011



2000: 303.3 PJ

2011: 278.2 PJ

*excluding electricity trade

POLICIES IN PLACE TO PROMOTE RENEWABLE ENERGY SINCE THE RIO CONFERENCE OF 1992



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WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2013: Ranked 27 out of 185

RENEWABLE ENERGY PROJECTS REPORTED IN THE BNEF DATABASE:

- 60 MW and 50 MWth of biomass-fired capacity addition announced (3 projects)

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: Not applicable

RENEWABLE ENERGY RESOURCES: ● High ● Medium ● Low ● Unknown ✕ Not applicable



Note: The information on resources should be taken as an indication only. It refers to a general trend of available resources, and does not pre-judge the feasibility of individual projects. The thresholds are indicative, and do not refer to any technological choice. The analysis is based on the literature.

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Units: USD: United States dollar; kWh: kilowatt-hour; GWh: gigawatt-hour (1 GWh=10⁶ kWh); TWh: terawatt-hour (1 TWh=10³ GWh); PJ: petajoule; MW: megawatt; GW: gigawatt (1 GW=10³ MW). Please also refer to the glossary for explanations on the terms used in the country profile.

LUXEMBOURG

518,000 Population (2011)

59.2 billion USD GDP (2011)

114,232 USD GDP per capita (2011)

FIGURE 1: GDP PER CAPITA FOR 2011

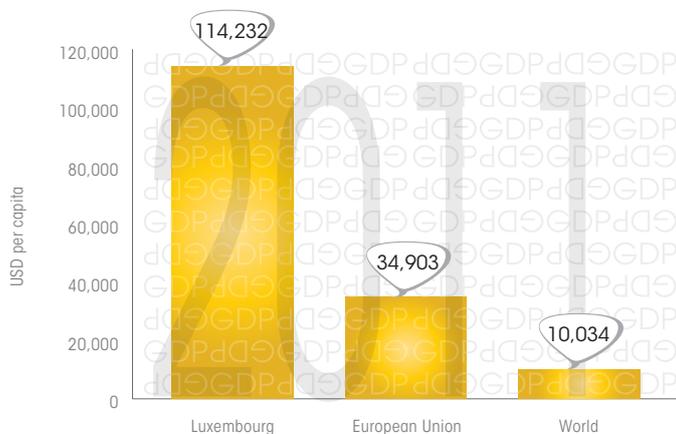
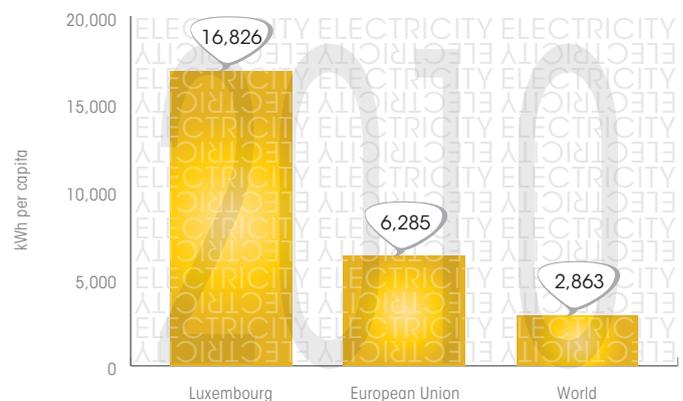


FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2010



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ENERGY NATIONAL PROFILE 2011

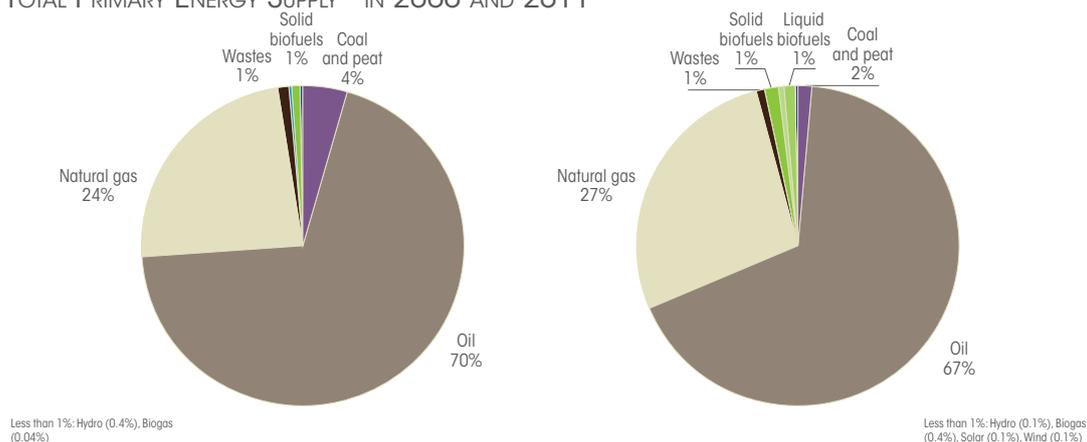
- Total Primary Energy Supply: 175.0 PJ - Of which renewables: 5.1 PJ (2.9%)
- Energy self-sufficiency: 2.8%
- Fuel imports: 3.3 billion USD (11.6% of total imports)
- Electricity generation: 2,645 GWh - Of which renewables: 242.0 GWh (9.1%)
- Electricity use per capita: 15,532 kWh
- Electrical capacity: 1,740 MW - Of which renewables: 149 MW (8.6%)
- Electricity access rate: 99.9%
- Share of population using solid fuels*: < 5%

* 2010

TARGETS:

- 11% of final energy from renewables by 2020
- At least 10% of transport energy from renewables by 2020

FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2011



2000: 118.6 PJ

2011: 158.8 PJ

*excluding electricity trade

POLICIES IN PLACE TO PROMOTE RENEWABLE ENERGY SINCE THE RIO CONFERENCE OF 1992



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WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2013: Ranked 56 out of 185

RENEWABLE ENERGY PROJECTS REPORTED IN THE BNEF DATABASE:

- No information available

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: Not applicable

RENEWABLE ENERGY RESOURCES: ● High ● Medium ● Low ● Unknown ✕ Not applicable

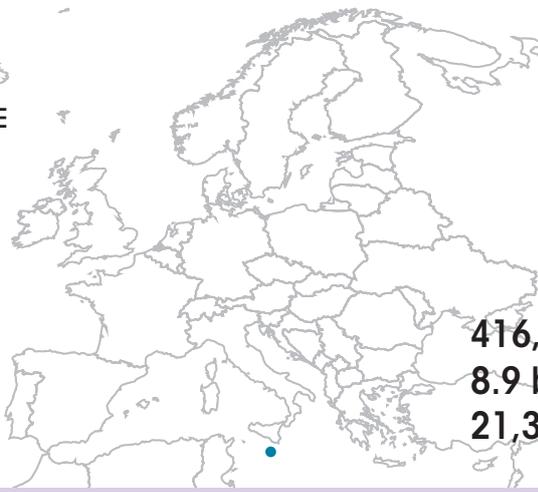
Wind ● Solar ● Hydro ● Biomass ● Geothermal ● Ocean ✕

Note: The information on resources should be taken as an indication only. It refers to a general trend of available resources, and does not pre-judge the feasibility of individual projects. The thresholds are indicative, and do not refer to any technological choice. The analysis is based on the literature.

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Units: USD: United States dollar; kWh: kilowatt-hour; GWh: gigawatt-hour (1 GWh=10⁶ kWh); TWh: terawatt-hour (1 TWh=10³ GWh); PJ: petajoule; MW: megawatt; GW: gigawatt (1 GW=10³ MW). Please also refer to the glossary for explanations on the terms used in the country profile.

MALTA



416,000 Population (2011)
8.9 billion USD GDP (2011)
21,380 USD GDP per capita (2011)

FIGURE 1: GDP PER CAPITA FOR 2011

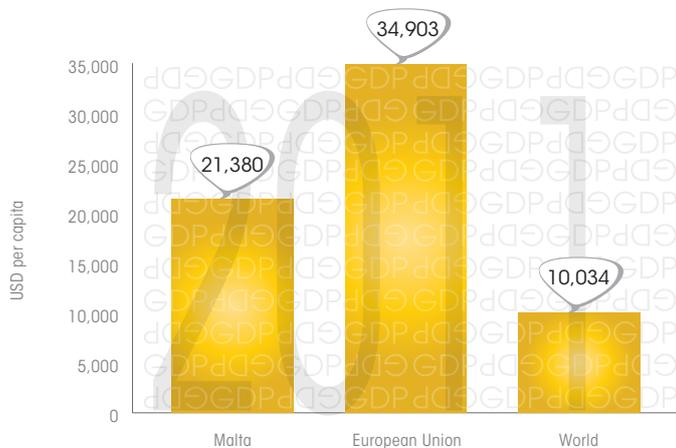
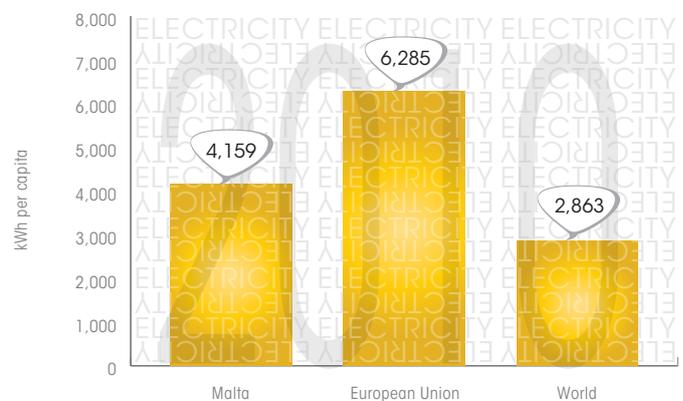


FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2010



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ENERGY NATIONAL PROFILE 2011

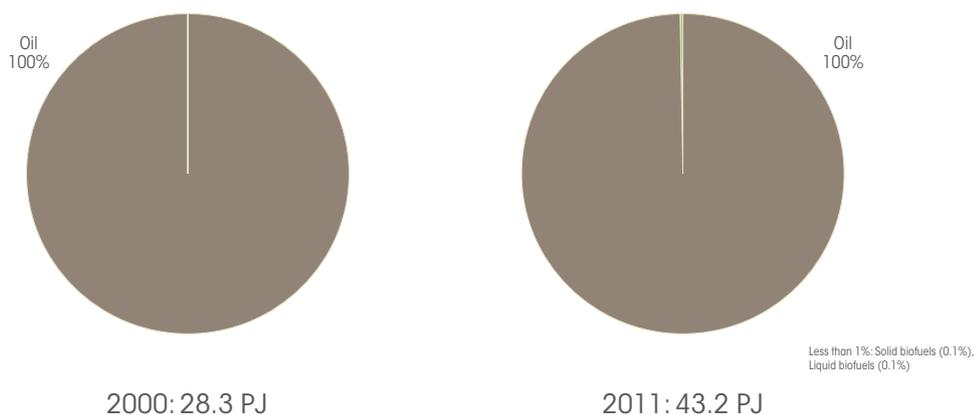
- Total Primary Energy Supply: 43.2 PJ - Of which renewables: 0.1 PJ (0.1%)
- Energy self-sufficiency: 0.1%
- Fuel imports: 1.6 billion USD (26.1% of total imports)
- Electricity generation: 2,189 GWh - Of which renewables: 0.0 GWh (0.0%)
- Electricity use per capita: 4,684 kWh
- Electrical capacity: 571 MW - Of which renewables: 17 MW (3.0%)
- Electricity access rate: 99.9%
- Share of population using solid fuels*: < 5%

* 2010

TARGETS:

- 10% of final energy from renewables by 2020
- At least 10% of transport energy from renewables by 2020

FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2011



*excluding electricity trade

POLICIES IN PLACE TO PROMOTE RENEWABLE ENERGY SINCE THE RIO CONFERENCE OF 1992



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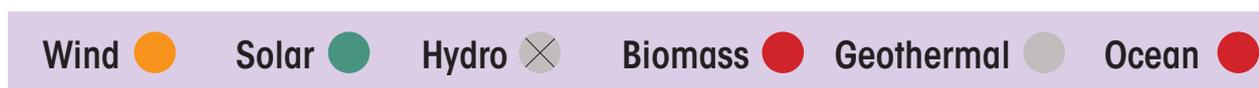
WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2013: Ranked 102 out of 185

RENEWABLE ENERGY PROJECTS REPORTED IN THE BNEF DATABASE:

- 78 MW of biomass-fired capacity addition announced (1 project)
- 270 million litres of bioethanol per year capacity addition announced (2 projects)
- 110 MW of wind capacity addition announced (3 projects)

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: Not applicable

RENEWABLE ENERGY RESOURCES: ● High ● Medium ● Low ● Unknown ✕ Not applicable



Note: The information on resources should be taken as an indication only. It refers to a general trend of available resources, and does not pre-judge the feasibility of individual projects. The thresholds are indicative, and do not refer to any technological choice. The analysis is based on the literature.

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Units: USD: United States dollar; kWh: kilowatt-hour; GWh: gigawatt-hour (1 GWh=10⁶ kWh); TWh: terawatt-hour (1 TWh=10³ GWh); PJ: petajoule; MW: megawatt; GW: gigawatt (1 GW=10³ MW). Please also refer to the glossary for explanations on the terms used in the country profile.

NETHERLANDS

16.7 million Population (2011)
836.1 billion USD GDP (2011)
50,085 USD GDP per capita (2011)

FIGURE 1: GDP PER CAPITA FOR 2011

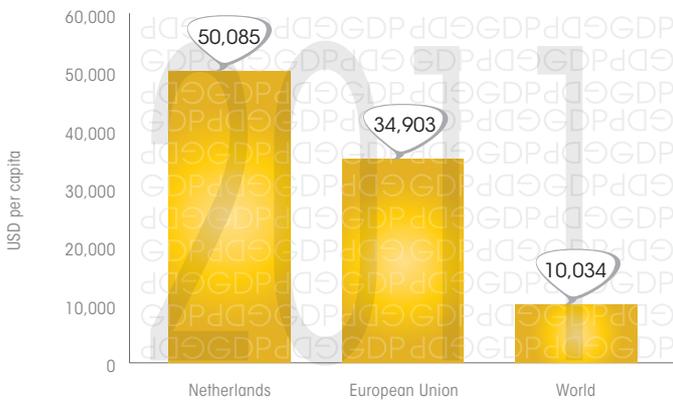
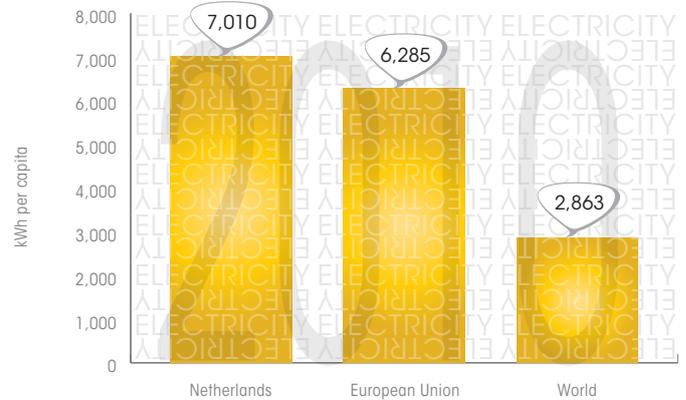


FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2010



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ENERGY NATIONAL PROFILE 2011

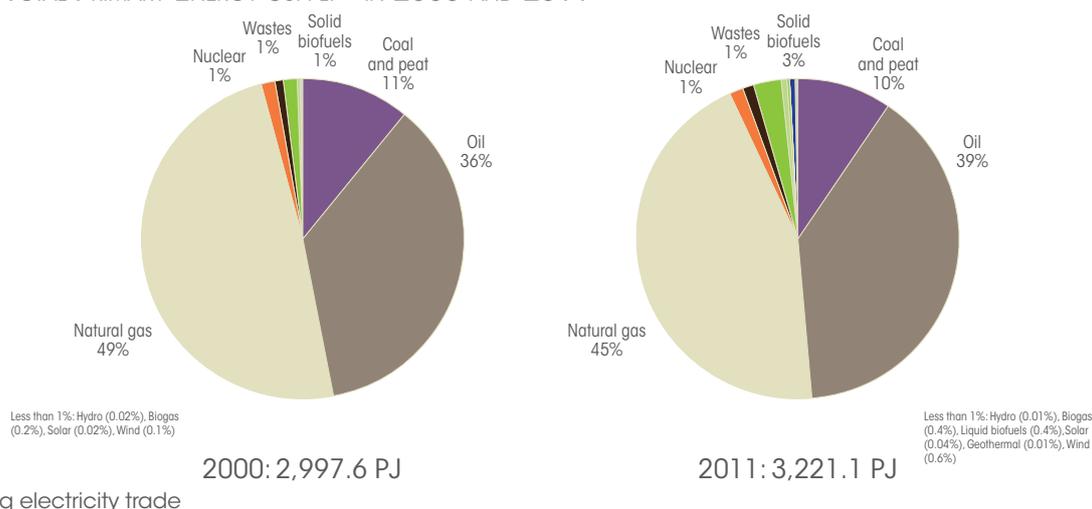
- Total Primary Energy Supply: 3,253.2 PJ - Of which renewables: 138.1 PJ (4.2%)
- Energy self-sufficiency: 83.3%
- Fuel imports: 132.6 billion USD (22.2% of total imports)
- Electricity generation: 113.0 TWh - Of which renewables: 12.3 TWh (10.9%)
- Electricity use per capita: 7,036 kWh
- Electrical capacity: 28.0 GW - Of which renewables: 4,094 MW (14.6%)
- Electricity access rate: 99.9%
- Share of population using solid fuels*: < 5%

* 2010

TARGETS:

- 14% of final energy from renewables by 2020
- 5% of transport energy from renewables by 2013 (10% by 2020)

FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2011



POLICIES IN PLACE TO PROMOTE RENEWABLE ENERGY SINCE THE RIO CONFERENCE OF 1992



Note: All Member States of the European Union published National Renewable Energy Action Plans in 2010, which detail how they expect to reach their legally binding 2020 target for the share of renewable energy in their total energy consumption, as required by the renewable energy Directive (2009/28/EC)

WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2013: Ranked 31 out of 185

RENEWABLE ENERGY PROJECTS REPORTED IN THE BNEF DATABASE:

- 500 million litres of biodiesel per year capacity addition announced (1 project)
- 1.5 MW of solar photovoltaic capacity addition announced (1 project)
- Around 1,150 MW of wind capacity addition announced (5 projects)

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: Not applicable

RENEWABLE ENERGY RESOURCES: ● High ● Medium ● Low ● Unknown ✕ Not applicable

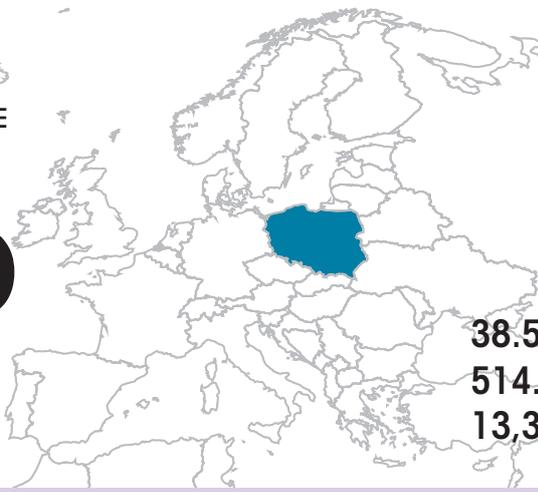


Note: The information on resources should be taken as an indication only. It refers to a general trend of available resources, and does not pre-judge the feasibility of individual projects. The thresholds are indicative, and do not refer to any technological choice. The analysis is based on the literature.

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Units: USD: United States dollar; kWh: kilowatt-hour; GWh: gigawatt-hour (1 GWh=10⁶ kWh); TWh: terawatt-hour (1 TWh=10³ GWh); PJ: petajoule; MW: megawatt; GW: gigawatt (1 GW=10³ MW). Please also refer to the glossary for explanations on the terms used in the country profile.

POLAND



38.5 million Population (2011)
514.5 billion USD GDP (2011)
13,352 USD GDP per capita (2011)

FIGURE 1: GDP PER CAPITA FOR 2011

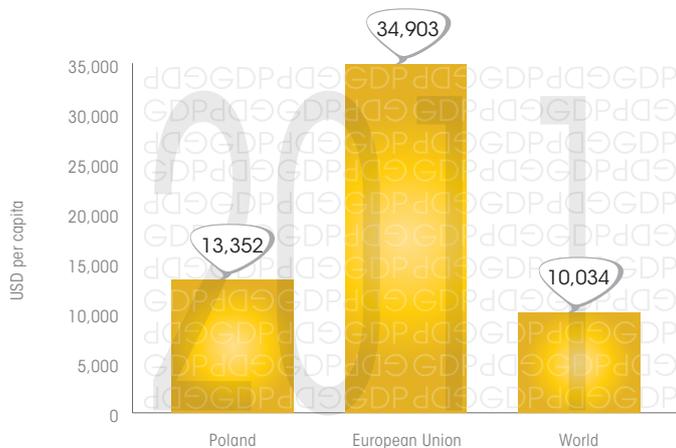
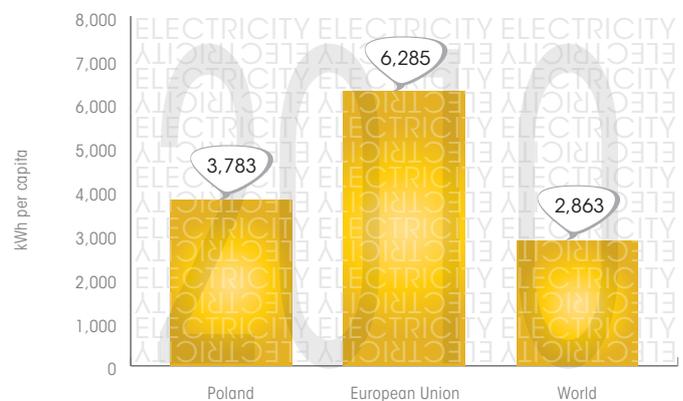


FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2010



The European Union includes Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the United Kingdom.

ENERGY NATIONAL PROFILE 2011

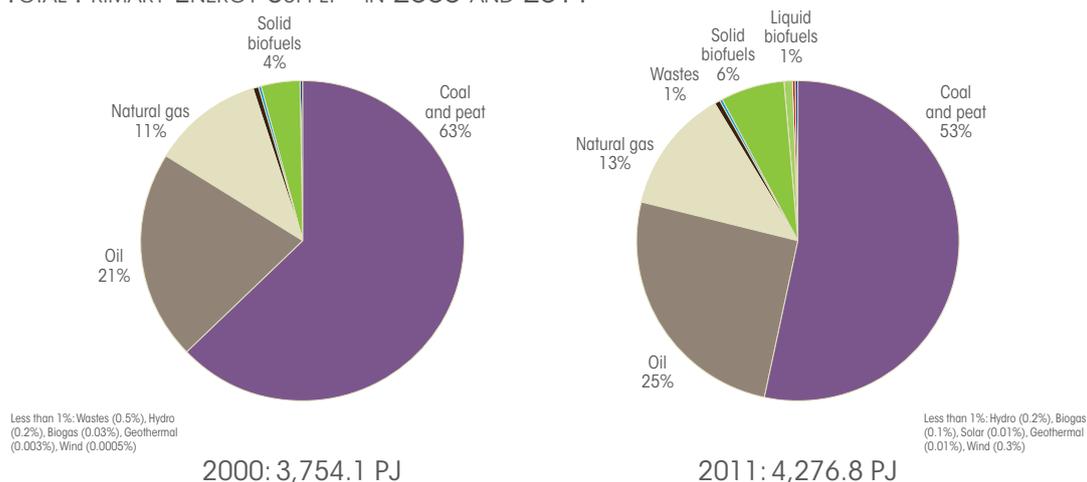
- Total Primary Energy Supply: 4,257.9 PJ - Of which renewables: 332.9 PJ (7.8%)
- Energy self-sufficiency: 67.7%
- Fuel imports: 26.5 billion USD (12.7% of total imports)
- Electricity generation: 163.1 TWh - Of which renewables: 13.1 TWh (8.1%)
- Electricity use per capita: 3,832 kWh
- Electrical capacity: 34.6 GW - Of which renewables: 3,021 MW (8.7%)
- Electricity access rate: 99.9%
- Share of population using solid fuels*: < 5%

* 2010

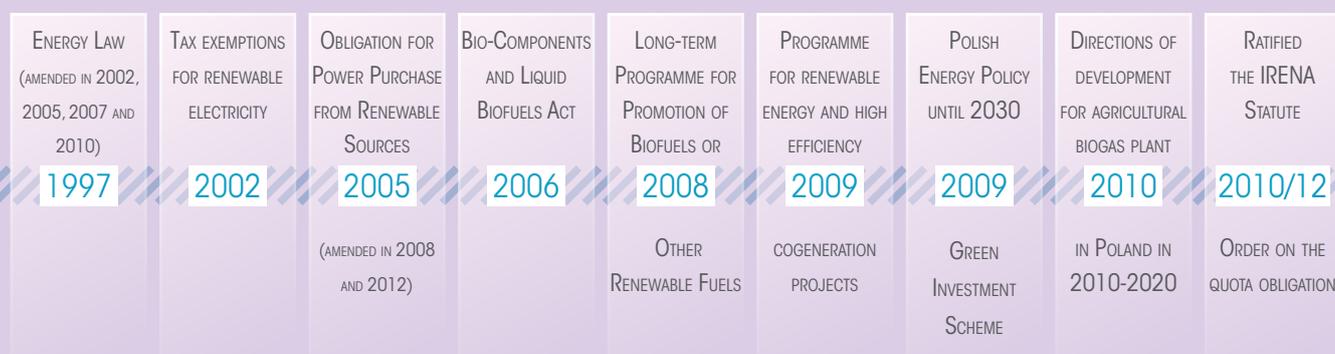
TARGETS:

- 15% of final energy from renewables by 2020
- At least 10% of transport energy from renewables by 2020

FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2011



POLICIES IN PLACE TO PROMOTE RENEWABLE ENERGY SINCE THE RIO CONFERENCE OF 1992



Note: All Member States of the European Union published National Renewable Energy Action Plans in 2010, which detail how they expect to reach their legally binding 2020 target for the share of renewable energy in their total energy consumption, as required by the renewable energy Directive (2009/28/EC)

WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2013: Ranked 55 out of 185

RENEWABLE ENERGY PROJECTS REPORTED IN THE BNEF DATABASE:

- 175 MW and 119 MWth of biomass-fired capacity addition announced (11 projects)
- More than 12 MW of geothermal capacity addition announced (2 projects)
- 20 MW of small hydro capacity addition announced (3 projects)
- Around 6,350 MW of wind capacity addition announced (56 projects)

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: Not applicable

RENEWABLE ENERGY RESOURCES: ● High ● Medium ● Low ● Unknown ✕ Not applicable

Wind ● Solar ● Hydro ● Biomass ● Geothermal ● Ocean ●

Note: The information on resources should be taken as an indication only. It refers to a general trend of available resources, and does not pre-judge the feasibility of individual projects. The thresholds are indicative, and do not refer to any technological choice. The analysis is based on the literature.

Sources: Population and GDP: World Bank; Energy data: IEA, IRENA analysis based on Eurostat data; Share of fuel imports in total imports: World Trade Organisation; Electrical capacity: IEA, Eurostat; Electricity access rate: World Energy Outlook 2012 database (IEA); Share of population using solid fuels: World Health Organisation; Targets: REN21, IRENA; Policy/legislation: IEA, IRENA research; Ease of doing business index: World Bank; Renewable energy projects: Bloomberg New Energy Finance, IRENA research; Clean Development Mechanism projects: UNFCCC; Renewable energy resources: IRENA analysis.

Units: USD: United States dollar; kWh: kilowatt-hour; GWh: gigawatt-hour (1 GWh=10⁶ kWh); TWh: terawatt-hour (1 TWh=10³ GWh); PJ: petajoule; MW: megawatt; GW: gigawatt (1 GW=10³ MW). Please also refer to the glossary for explanations on the terms used in the country profile.

PORTUGAL



10.6 million Population (2011)
237.4 billion USD GDP (2011)
22,485 USD GDP per capita (2011)

FIGURE 1: GDP PER CAPITA FOR 2011

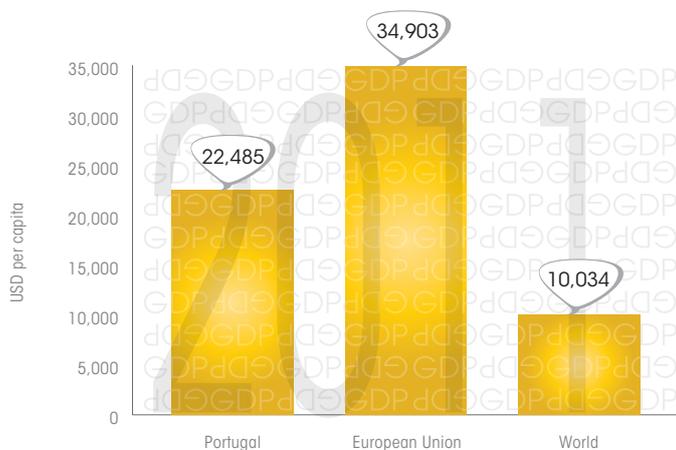
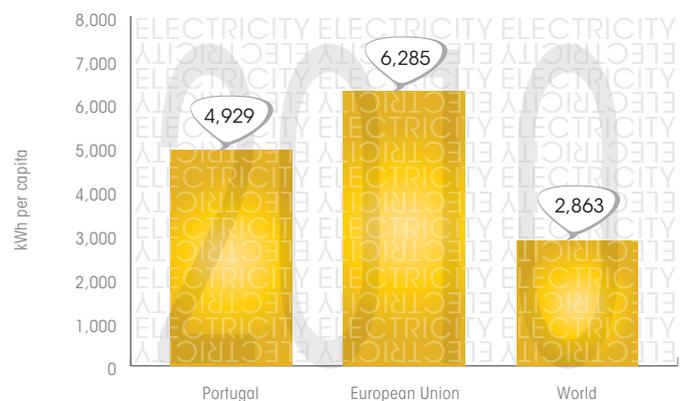


FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2010



The European Union includes Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the United Kingdom.

ENERGY NATIONAL PROFILE 2011

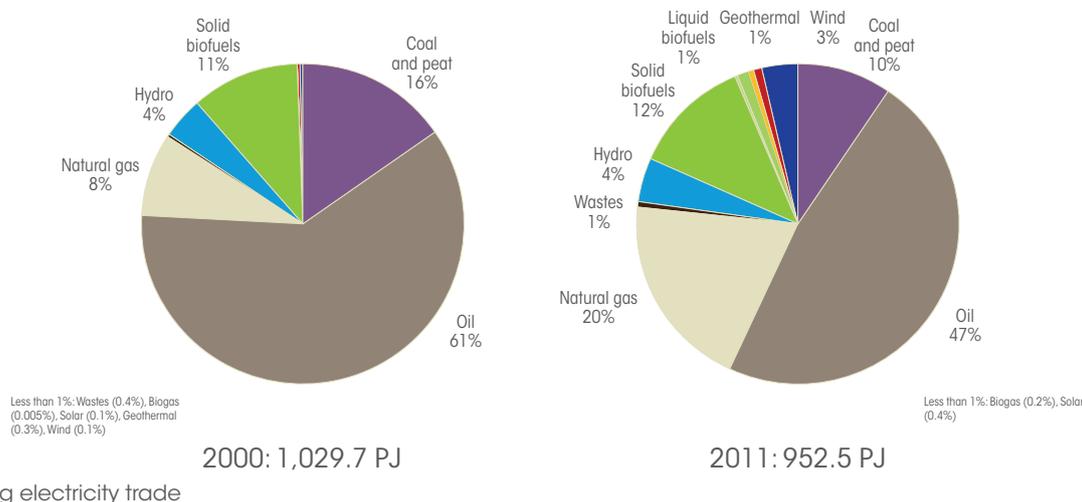
- Total Primary Energy Supply: 962.6 PJ - Of which renewables: 215.3 PJ (22.4%)
- Energy self-sufficiency: 23.3%
- Fuel imports: 14.3 billion USD (17.8% of total imports)
- Electricity generation: 51.9 TWh - Of which renewables: 24.1 TWh (46.5%)
- Electricity use per capita: 4,848 kWh
- Electrical capacity: 19.9 GW - Of which renewables: 9.6 GW (48.1%)
- Electricity access rate: 99.9%
- Share of population using solid fuels*: < 5%

* 2010

TARGETS:

- 31% of final energy from renewables by 2020
- 55 to 60% of electricity generation from renewables by 2020
- At least 10% of transport energy from renewables by 2020

FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2011



POLICIES IN PLACE TO PROMOTE RENEWABLE ENERGY SINCE THE RIO CONFERENCE OF 1992



Note: All Member States of the European Union published National Renewable Energy Action Plans in 2010, which detail how they expect to reach their legally binding 2020 target for the share of renewable energy in their total energy consumption, as required by the renewable energy Directive (2009/28/EC)

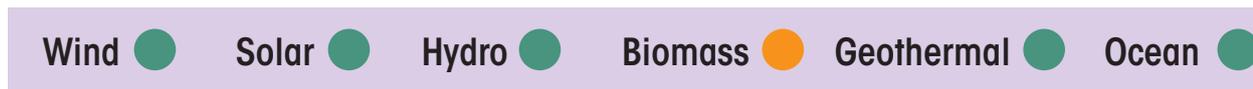
WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2013: Ranked 30 out of 185

RENEWABLE ENERGY PROJECTS REPORTED IN THE BNEF DATABASE:

- 18 MW of biomass-fired capacity addition announced (2 projects)
- 310 million litres of biodiesel per year capacity addition announced (1 project)
- 5 MW of small hydro capacity addition announced (1 project)
- 13.5 MW of solar photovoltaic capacity addition announced (3 projects)
- 4 MW of solar thermal capacity addition announced (1 project)
- 115 MW of wind capacity addition announced (4 projects)
- 27 MW of marine capacity addition announced (3 projects)

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: Not applicable

RENEWABLE ENERGY RESOURCES: ● High ● Medium ● Low ● Unknown ✕ Not applicable



Note: The information on resources should be taken as an indication only. It refers to a general trend of available resources, and does not pre-judge the feasibility of individual projects. The thresholds are indicative, and do not refer to any technological choice. The analysis is based on the literature.

Sources: Population and GDP: World Bank; Energy data: IEA, IRENA analysis based on Eurostat data; Share of fuel imports in total imports: World Trade Organisation; Electrical capacity: IEA, Eurostat; Electricity access rate: World Energy Outlook 2012 database (IEA); Share of population using solid fuels: World Health Organisation; Targets: REN21, IRENA; Policy/legislation: IEA, IRENA research; Ease of doing business index: World Bank; Renewable energy projects: Bloomberg New Energy Finance, IRENA research; Clean Development Mechanism projects: UNFCCC; Renewable energy resources: IRENA analysis.

Units: USD: United States dollar; kWh: kilowatt-hour; GWh: gigawatt-hour (1 GWh=10⁶ kWh); TWh: terawatt-hour (1 TWh=10³ GWh); PJ: petajoule; MW: megawatt; GW: gigawatt (1 GW=10³ MW). Please also refer to the glossary for explanations on the terms used in the country profile.

ROMANIA

21.4 million Population (2011)
179.8 billion USD GDP (2011)
8,408 USD GDP per capita (2011)

FIGURE 1: GDP PER CAPITA FOR 2011

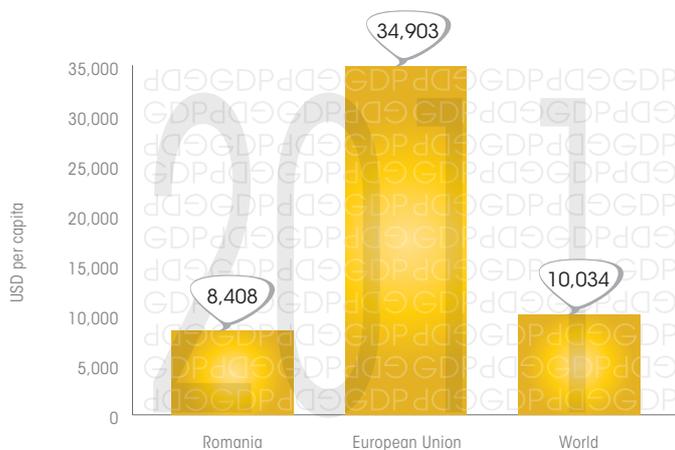
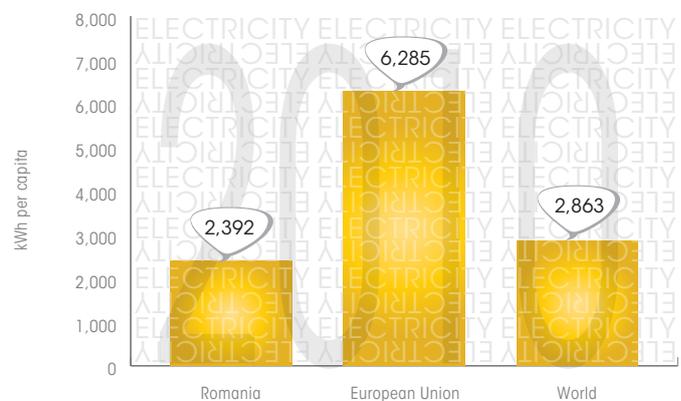


FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2010



The European Union includes Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the United Kingdom.

ENERGY NATIONAL PROFILE 2011

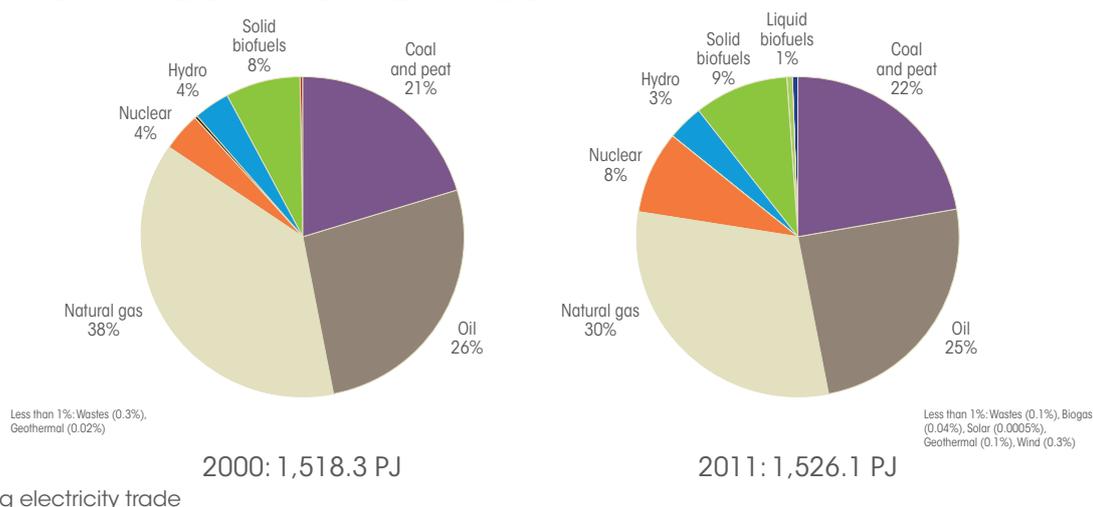
- Total Primary Energy Supply: 1,519.2 PJ - Of which renewables: 212.2 PJ (14.0%)
- Energy self-sufficiency: 76.9%
- Fuel imports: 8.6 billion USD (11.3% of total imports)
- Electricity generation: 62.0 TWh - Of which renewables: 16.3 TWh (26.3%)
- Electricity use per capita: 2,486 kWh
- Electrical capacity: 20.5 GW - Of which renewables: 7.4 GW (36.1%)
- Electricity access rate: 99.9%
- Share of population using solid fuels*: 17%

* 2010

TARGETS:

- 24% of final energy from renewables by 2020
- 43% of electricity generation from renewables by 2020
- 10% of transport energy from renewables by 2020
- 22% of energy consumption for heating and cooling from renewables by 2020

FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2011



POLICIES IN PLACE TO PROMOTE RENEWABLE ENERGY SINCE THE RIO CONFERENCE OF 1992



Note: All Member States of the European Union published National Renewable Energy Action Plans in 2010, which detail how they expect to reach their legally binding 2020 target for the share of renewable energy in their total energy consumption, as required by the renewable energy Directive (2009/28/EC)

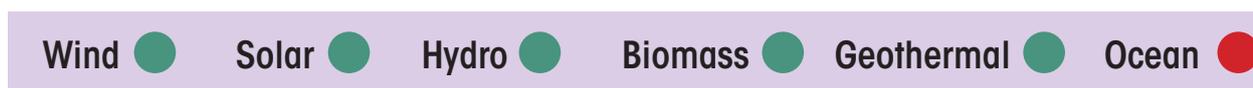
WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2013: Ranked 72 out of 185

RENEWABLE ENERGY PROJECTS REPORTED IN THE BNEF DATABASE:

- 119 MW of biomass-fired capacity addition announced (6 projects)
- 293 MW of solar photovoltaic capacity addition announced (23 projects)
- Around 3,500 MW of wind capacity addition announced (30 projects)

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: Not applicable

RENEWABLE ENERGY RESOURCES: ● High ● Medium ● Low ● Unknown ✕ Not applicable



Note: The information on resources should be taken as an indication only. It refers to a general trend of available resources, and does not pre-judge the feasibility of individual projects. The thresholds are indicative, and do not refer to any technological choice. The analysis is based on the literature.

Sources: Population and GDP: World Bank; Energy data: IEA, IRENA analysis based on Eurostat data; Share of fuel imports in total imports: World Trade Organisation; Electrical capacity: IEA, Eurostat; Electricity access rate: World Energy Outlook 2012 database (IEA); Share of population using solid fuels: World Health Organisation; Targets: REN21, IRENA; Policy/legislation: IEA, IRENA research; Ease of doing business index: World Bank; Renewable energy projects: Bloomberg New Energy Finance, IRENA research; Clean Development Mechanism projects: UNFCCC; Renewable energy resources: IRENA analysis.

Units: USD: United States dollar; kWh: kilowatt-hour; GWh: gigawatt-hour (1 GWh=10⁶ kWh); TWh: terawatt-hour (1 TWh=10³ GWh); PJ: petajoule; MW: megawatt; GW: gigawatt (1 GW=10³ MW). Please also refer to the glossary for explanations on the terms used in the country profile.

SLOVAKIA

5.4 million Population (2011)
96.0 billion USD GDP (2011)
17,782 USD GDP per capita (2011)

FIGURE 1: GDP PER CAPITA FOR 2011

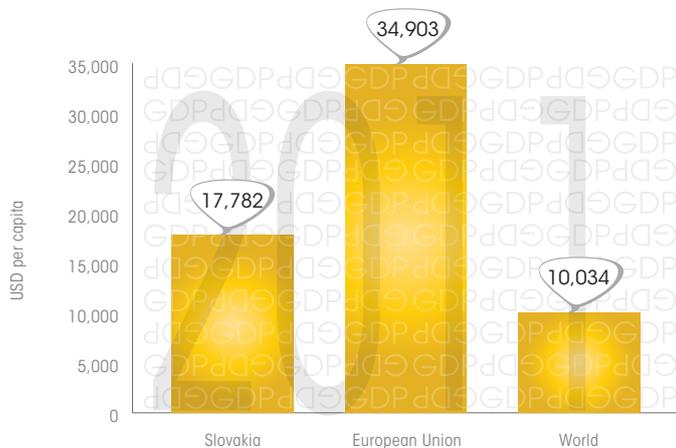
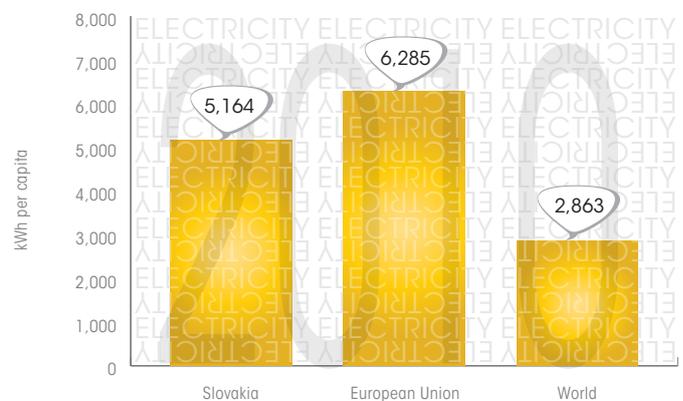


FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2010



The European Union includes Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the United Kingdom.

ENERGY NATIONAL PROFILE 2011

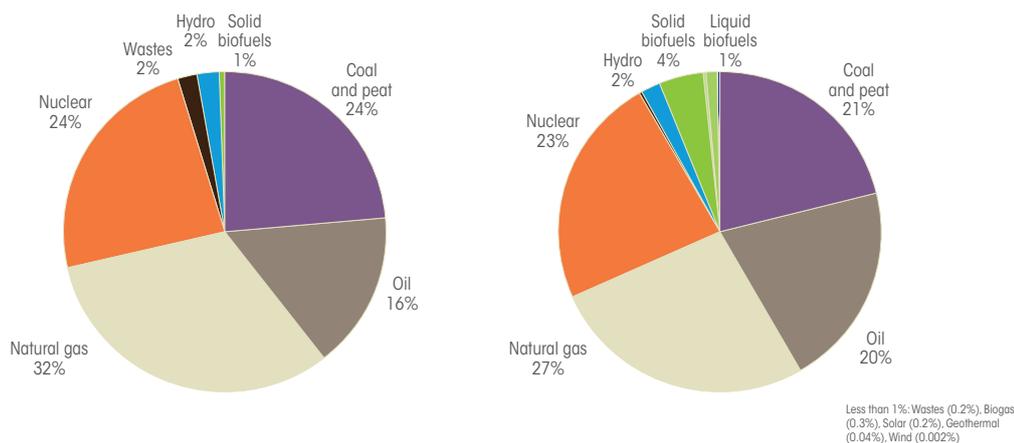
- Total Primary Energy Supply: 729.4 PJ - Of which renewables: 57.2 PJ (7.8%)
- Energy self-sufficiency: 37.8%
- Fuel imports: 11.3 billion USD (14.6% of total imports)
- Electricity generation: 28.3 TWh - Of which renewables: 4,999 GWh (17.7%)
- Electricity use per capita: 5,350 kWh
- Electrical capacity: 8.1 GW - Of which renewables: 1,998 MW (24.8%)
- Electricity access rate: 99.9%
- Share of population using solid fuels*: < 5%

* 2010

TARGETS:

- 14% of final energy from renewables by 2020
- At least 10% of transport energy from renewables by 2020

FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2011



2000: 752.6 PJ

2011: 726.8 PJ

*excluding electricity trade

Less than 1%: Wastes (0.2%), Biogas (0.3%), Solar (0.2%), Geothermal (0.04%), Wind (0.002%)

POLICIES IN PLACE TO PROMOTE RENEWABLE ENERGY SINCE THE RIO CONFERENCE OF 1992



Note: All Member States of the European Union published National Renewable Energy Action Plans in 2010, which detail how they expect to reach their legally binding 2020 target for the share of renewable energy in their total energy consumption, as required by the renewable energy Directive (2009/28/EC)

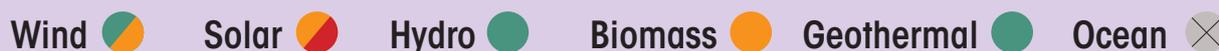
WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2013: Ranked 46 out of 185

RENEWABLE ENERGY PROJECTS REPORTED IN THE BNEF DATABASE:

- 1.5 MW of biomass-fired capacity addition announced (1 project)
- 6 MW of geothermal capacity addition announced (1 project)
- 50 MW of solar photovoltaic capacity addition announced (5 projects)
- 173 MW of wind capacity addition announced (4 projects)

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: Not applicable

RENEWABLE ENERGY RESOURCES: ● High ● Medium ● Low ● Unknown ✕ Not applicable

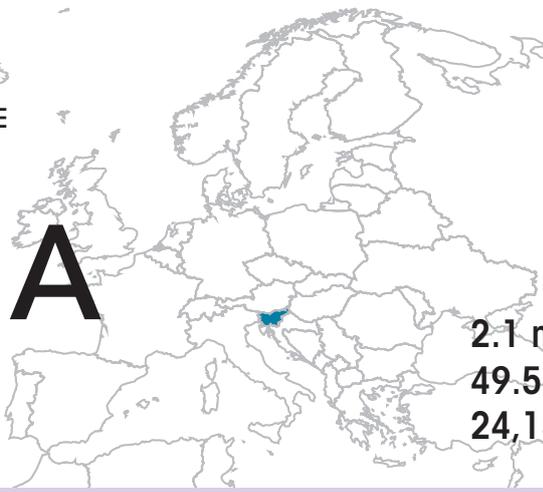


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Units: USD: United States dollar; kWh: kilowatt-hour; GWh: gigawatt-hour (1 GWh=10⁶ kWh); TWh: terawatt-hour (1 TWh=10³ GWh); PJ: petajoule; MW: megawatt; GW: gigawatt (1 GW=10³ MW). Please also refer to the glossary for explanations on the terms used in the country profile.

SLOVENIA



2.1 million Population (2011)
49.5 billion USD GDP (2011)
24,132 USD GDP per capita (2011)

FIGURE 1: GDP PER CAPITA FOR 2011

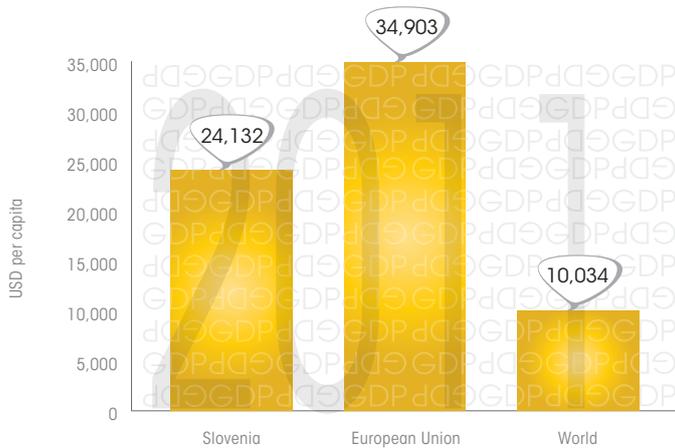
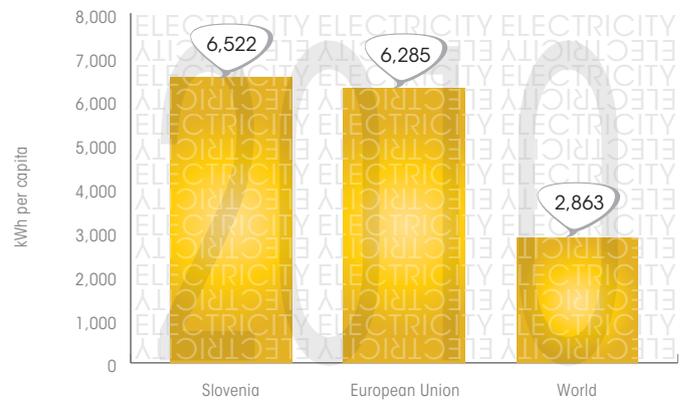


FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2010



The European Union includes Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the United Kingdom.

ENERGY NATIONAL PROFILE 2011

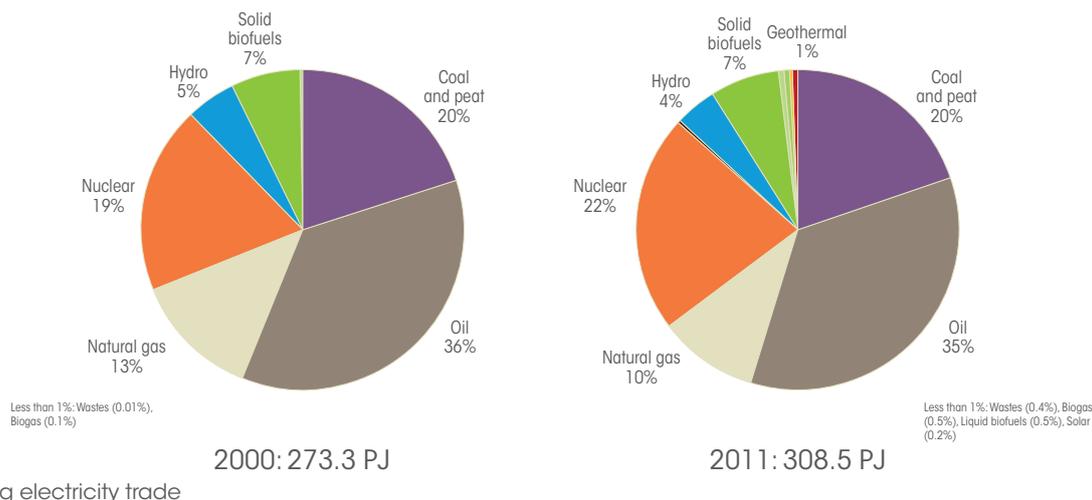
- Total Primary Energy Supply: 303.9 PJ - Of which renewables: 39.7 PJ (13.1%)
- Energy self-sufficiency: 51.8%
- Fuel imports: 5.0 billion USD (14.0% of total imports)
- Electricity generation: 15.9 TWh - Of which renewables: 3,876 GWh (24.4%)
- Electricity use per capita: 6,805 kWh
- Electrical capacity: 3,268 MW - Of which renewables: 1,188 MW (36.4%)
- Electricity access rate: 99.9%
- Share of population using solid fuels*: < 5%

* 2010

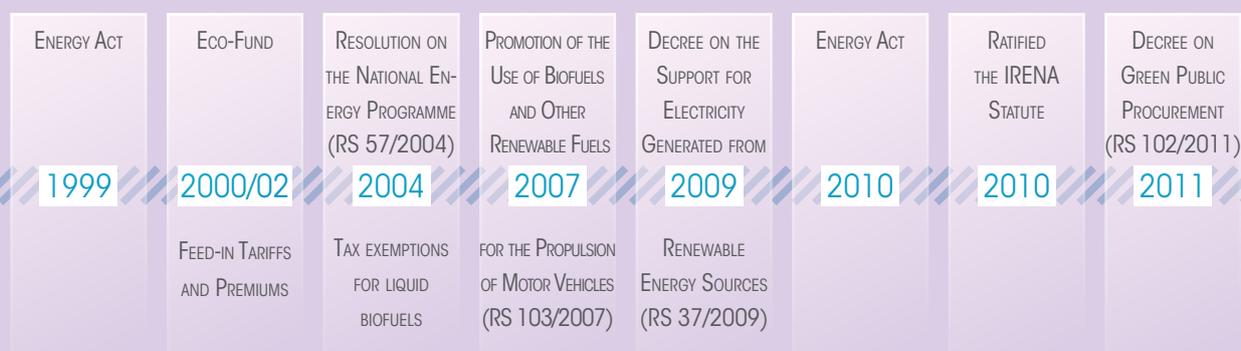
TARGETS:

- 25% of final energy from renewables by 2020
- At least 10% of transport energy from renewables by 2020

FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2011



POLICIES IN PLACE TO PROMOTE RENEWABLE ENERGY SINCE THE RIO CONFERENCE OF 1992



Note: All Member States of the European Union published National Renewable Energy Action Plans in 2010, which detail how they expect to reach their legally binding 2020 target for the share of renewable energy in their total energy consumption, as required by the renewable energy Directive (2009/28/EC)

WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2013: Ranked 35 out of 185

RENEWABLE ENERGY PROJECTS REPORTED IN THE BNEF DATABASE:

- 72 MW of small hydro capacity addition announced (2 projects)

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: Not applicable

RENEWABLE ENERGY RESOURCES: ● High ● Medium ● Low ● Unknown ✕ Not applicable

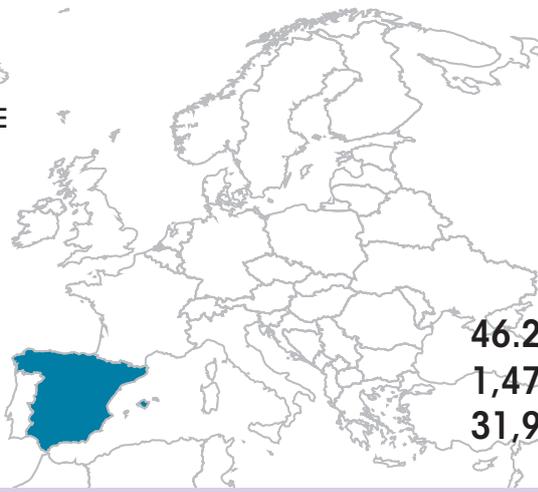


Note: The information on resources should be taken as an indication only. It refers to a general trend of available resources, and does not pre-judge the feasibility of individual projects. The thresholds are indicative, and do not refer to any technological choice. The analysis is based on the literature.

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Units: USD: United States dollar; kWh: kilowatt-hour; GWh: gigawatt-hour (1 GWh=10⁶ kWh); TWh: terawatt-hour (1 TWh=10³ GWh); PJ: petajoule; MW: megawatt; GW: gigawatt (1 GW=10³ MW). Please also refer to the glossary for explanations on the terms used in the country profile.

SPAIN



46.2 million Population (2011)
1,476.9 billion USD GDP (2011)
31,985 USD GDP per capita (2011)

FIGURE 1: GDP PER CAPITA FOR 2011

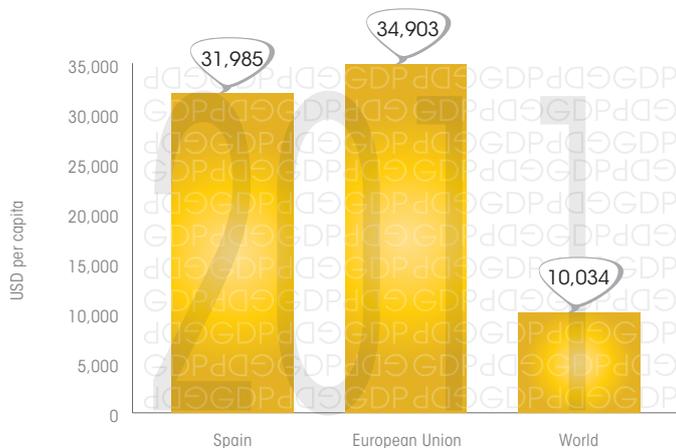
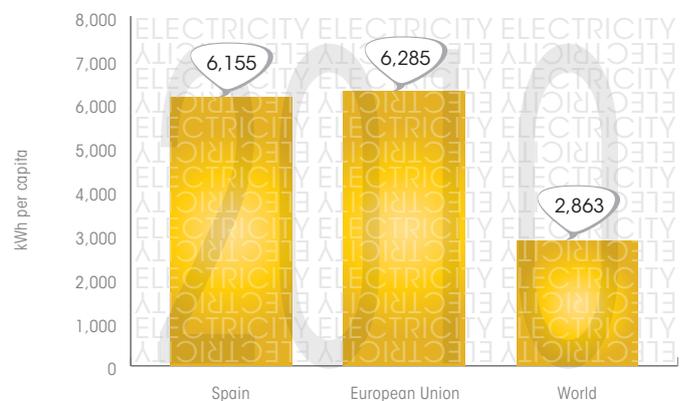


FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2010



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ENERGY NATIONAL PROFILE 2011

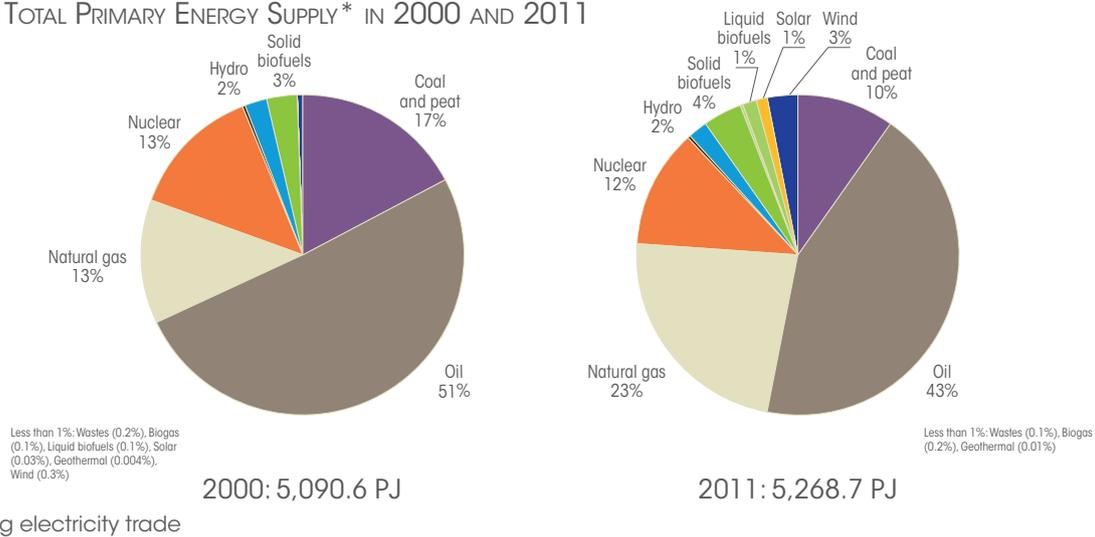
- Total Primary Energy Supply: 5,246.8 PJ - Of which renewables: 612.9 PJ (11.7%)
- Energy self-sufficiency: 25.6%
- Fuel imports: 77.9 billion USD (20.8% of total imports)
- Electricity generation: 289.4 TWh - Of which renewables: 86.2 TWh (29.8%)
- Electricity use per capita: 5,606 kWh
- Electrical capacity: 102.8 GW - Of which renewables: 41.4 GW (40.2%)
- Electricity access rate: 99.9%
- Share of population using solid fuels*: < 5%

* 2010

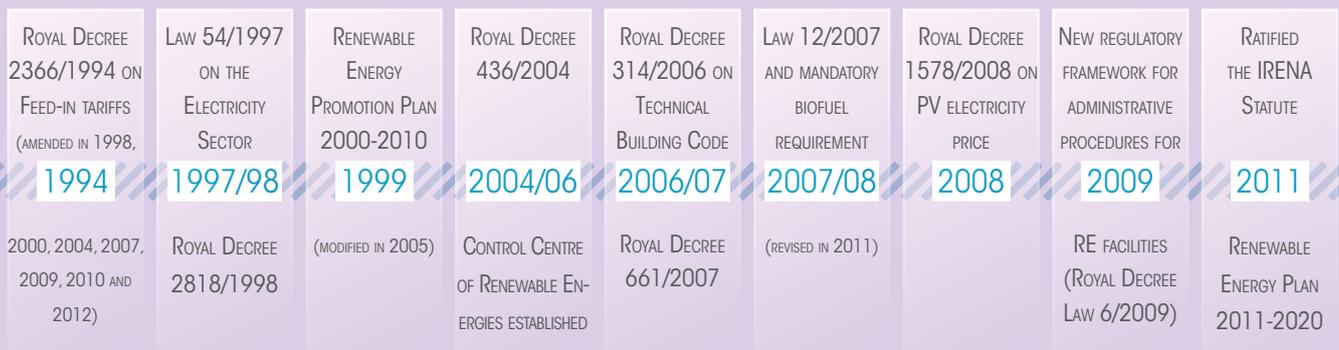
TARGETS:

- 20.8% of final energy from renewables by 2020: 6.3% from wind, 5.8% from biomass and wastes, 3% from solar, 2.9% from hydro, 2.7% from liquid biofuels and 0.1% from other renewables
- 38.1% of electricity generation from renewables by 2020
- 11.3% of transport energy from renewables by 2020 18.9% of energy consumption for heating and cooling from renewables by 2020
- 72.5 GW of renewable capacity, of which 35 GW of onshore wind, 13.9 GW of hydro and 7.3 GW of solar photovoltaic, by 2020

FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2011



POLICIES IN PLACE TO PROMOTE RENEWABLE ENERGY SINCE THE RIO CONFERENCE OF 1992



Note: All Member States of the European Union published National Renewable Energy Action Plans in 2010, which detail how they expect to reach their legally binding 2020 target for the share of renewable energy in their total energy consumption, as required by the renewable energy Directive (2009/28/EC)

WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2013: Ranked 44 out of 185

RENEWABLE ENERGY PROJECTS REPORTED IN THE BNEF DATABASE:

- 310 MW of biomass-fired capacity addition announced (14 projects)
- 10 MW and 8 MWth of geothermal capacity addition announced (2 projects)
- Around 1,400 MW of solar photovoltaic capacity addition announced (67 projects)
- 840 MW of solar thermal capacity addition announced (21 projects)
- 2,650 MW of wind capacity addition announced (33 projects)
- 6.5 MW of marine capacity addition announced (2 projects)

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: Not applicable

RENEWABLE ENERGY RESOURCES: ● High ● Medium ● Low ● Unknown ✕ Not applicable

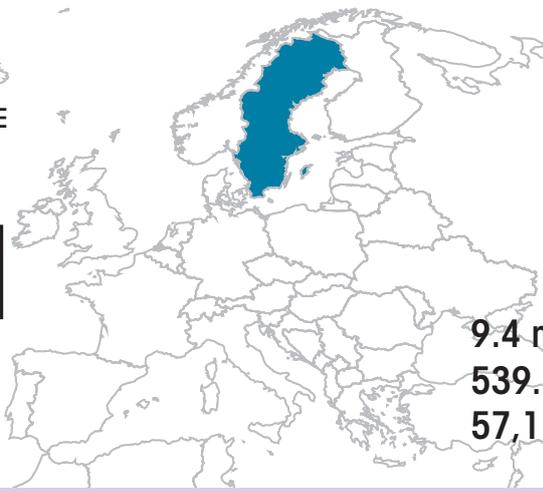
Wind ● Solar ● Hydro ● Biomass ● Geothermal ● Ocean ●

Note: The information on resources should be taken as an indication only. It refers to a general trend of available resources, and does not pre-judge the feasibility of individual projects. The thresholds are indicative, and do not refer to any technological choice. The analysis is based on the literature.

Sources: Population and GDP: World Bank; Energy data: IEA, IRENA analysis based on Eurostat data; Share of fuel imports in total imports: World Trade Organisation; Electrical capacity: IEA, Eurostat; Electricity access rate: World Energy Outlook 2012 database (IEA); Share of population using solid fuels: World Health Organisation; Targets: REN21, IRENA; Policy/legislation: IEA, IRENA research; Ease of doing business index: World Bank; Renewable energy projects: Bloomberg New Energy Finance, IRENA research; Clean Development Mechanism projects: UNFCCC; Renewable energy resources: IRENA analysis.

Units: USD: United States dollar; kWh: kilowatt-hour; GWh: gigawatt-hour (1 GWh=10⁶ kWh); TWh: terawatt-hour (1 TWh=10³ GWh); PJ: petajoule; MW: megawatt; GW: gigawatt (1 GW=10³ MW). Please also refer to the glossary for explanations on the terms used in the country profile.

SWEDEN



9.4 million Population (2011)
539.7 billion USD GDP (2011)
57,114 USD GDP per capita (2011)

FIGURE 1: GDP PER CAPITA FOR 2011

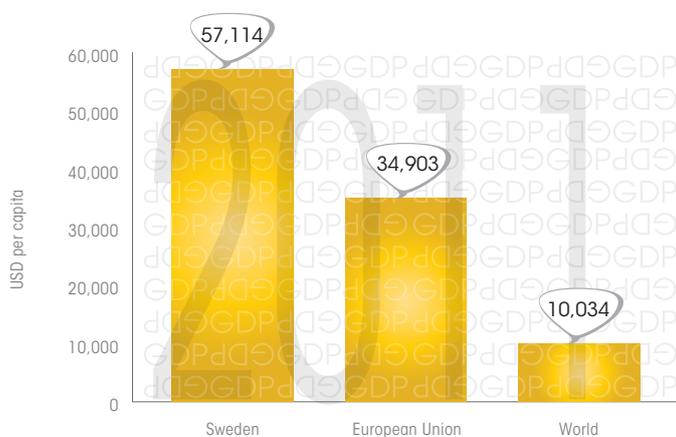
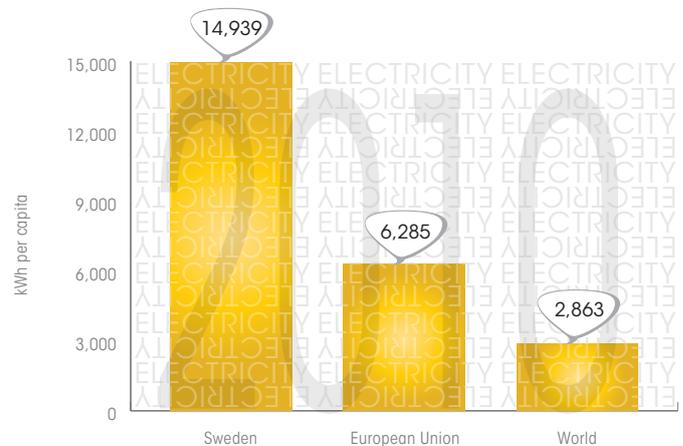


FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2010



The European Union includes Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the United Kingdom.

ENERGY NATIONAL PROFILE 2011

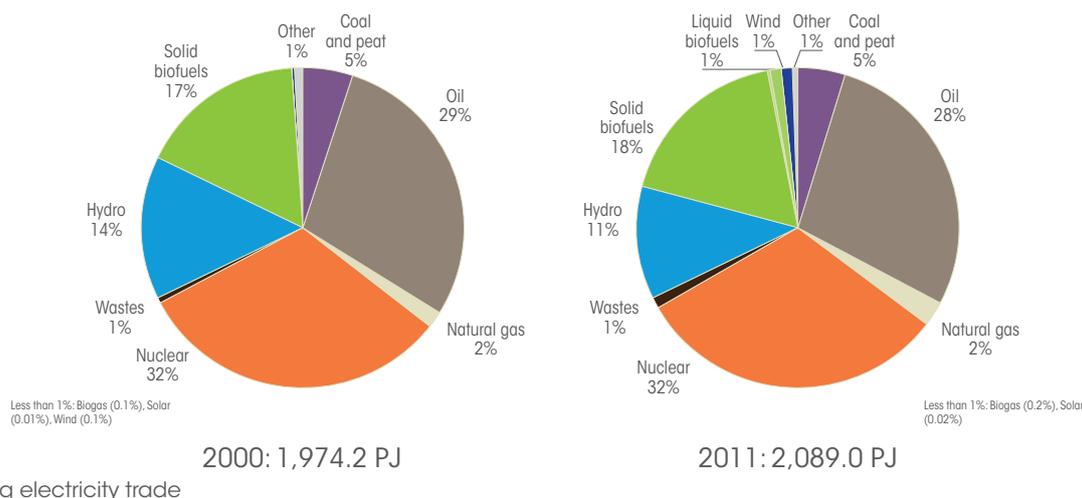
- Total Primary Energy Supply: 2,051.7 PJ - Of which renewables: 659.4 PJ (32.1%)
- Energy self-sufficiency: 66.0%
- Fuel imports: 25.2 billion USD (14.3% of total imports)
- Electricity generation: 150.3 TWh - Of which renewables: 84.1 TWh (55.9%)
- Electricity use per capita: 14,030 kWh
- Electrical capacity: 35.1 GW - Of which renewables: 23.3 GW (66.4%)
- Electricity access rate: 99.9%
- Share of population using solid fuels*: < 5%

* 2010

TARGETS:

- At least 50% of final energy from renewables by 2020
- At least 10% of transport energy from renewables by 2020
- 25 TWh more renewable electricity than in 2002 by 2020
- A vehicle stock that is independent of fossil fuels by 2030

FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2011



POLICIES IN PLACE TO PROMOTE RENEWABLE ENERGY SINCE THE RIO CONFERENCE OF 1992



Note: All Member States of the European Union published National Renewable Energy Action Plans in 2010, which detail how they expect to reach their legally binding 2020 target for the share of renewable energy in their total energy consumption, as required by the renewable energy Directive (2009/28/EC)

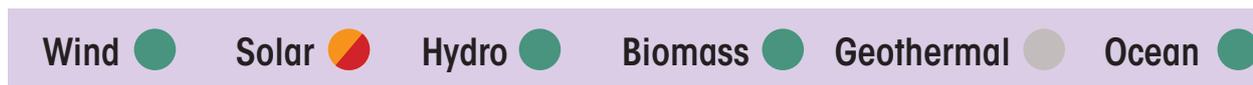
WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2013: Ranked 13 out of 185

RENEWABLE ENERGY PROJECTS REPORTED IN THE BNEF DATABASE:

- 429 MW and 107 MWth of biomass-fired capacity addition announced (7 projects)
- 126 million litres of bioethanol per year capacity addition announced (1 project)
- Around 4,500 MW of wind capacity addition announced (42 projects)

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: Not applicable

RENEWABLE ENERGY RESOURCES: ● High ● Medium ● Low ● Unknown ✕ Not applicable

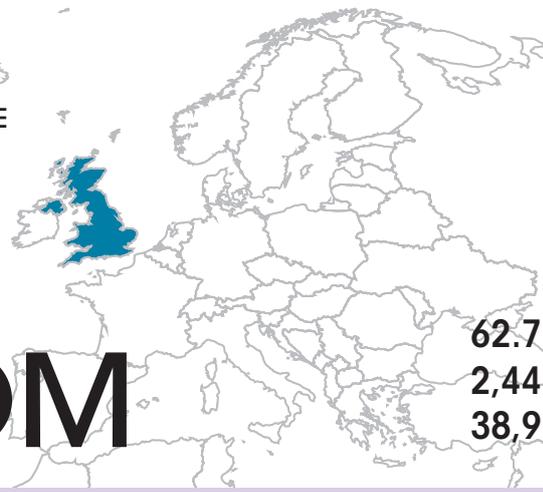


Note: The information on resources should be taken as an indication only. It refers to a general trend of available resources, and does not pre-judge the feasibility of individual projects. The thresholds are indicative, and do not refer to any technological choice. The analysis is based on the literature.

Sources: Population and GDP: World Bank; Energy data: IEA, IRENA analysis based on Eurostat data; Share of fuel imports in total imports: World Trade Organisation; Electrical capacity: IEA, Eurostat; Electricity access rate: World Energy Outlook 2012 database (IEA); Share of population using solid fuels: World Health Organisation; Targets: REN21, IRENA; Policy/legislation: IEA, IRENA research; Ease of doing business index: World Bank; Renewable energy projects: Bloomberg New Energy Finance, IRENA research; Clean Development Mechanism projects: UNFCCC; Renewable energy resources: IRENA analysis.

Units: USD: United States dollar; kWh: kilowatt-hour; GWh: gigawatt-hour (1 GWh=10⁶ kWh); TWh: terawatt-hour (1 TWh=10³ GWh); PJ: petajoule; MW: megawatt; GW: gigawatt (1 GW=10³ MW). Please also refer to the glossary for explanations on the terms used in the country profile.

UNITED KINGDOM

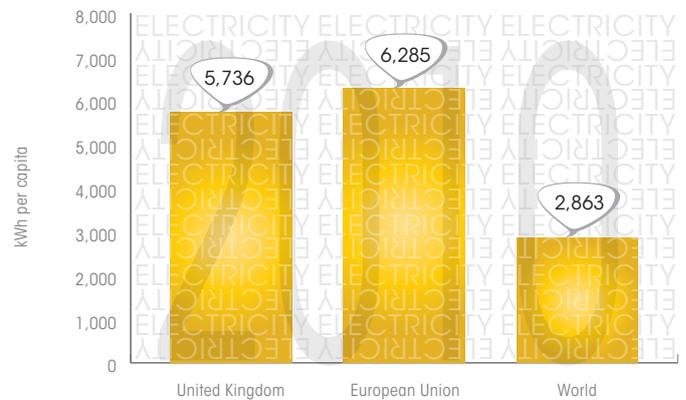


62.7 million Population (2011)
2,445.4 billion USD GDP (2011)
38,974 USD GDP per capita (2011)

FIGURE 1: GDP PER CAPITA FOR 2011



FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2010



The European Union includes Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the United Kingdom.

ENERGY NATIONAL PROFILE 2011

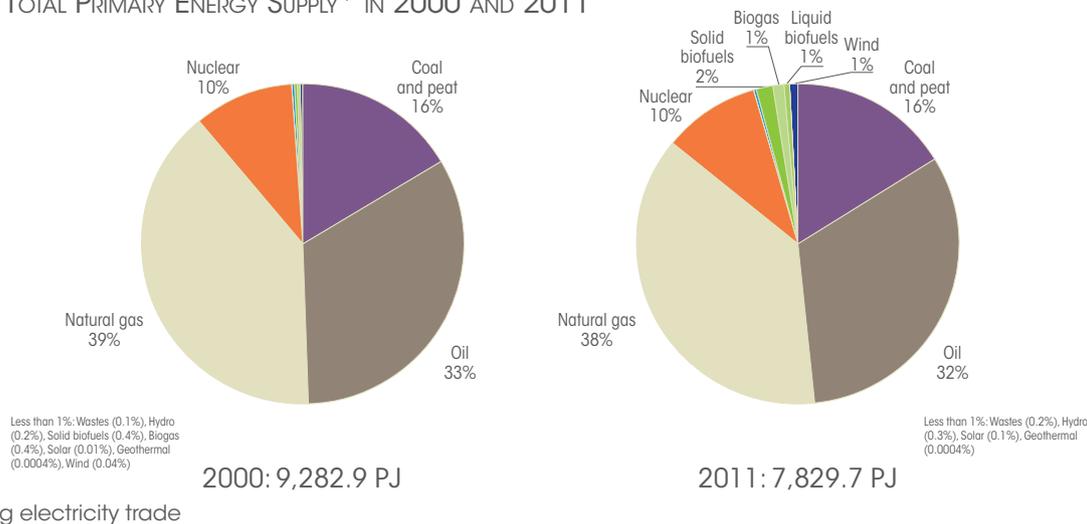
- Total Primary Energy Supply: 7,852.1 PJ - Of which renewables: 326.6 PJ (4.2%)
- Energy self-sufficiency: 69.0%
- Fuel imports: 91.0 billion USD (14.3% of total imports)
- Electricity generation: 364.9 TWh - Of which renewables: 34.4 TWh (9.4%)
- Electricity use per capita: 5,517 kWh
- Electrical capacity: 93.8 GW - Of which renewables: 12.4 GW (13.2%)
- Electricity access rate: 99.9%
- Share of population using solid fuels*: < 5%

* 2010

TARGETS:

- 15% of final energy from renewables by 2020
- 5% of transport energy from renewables by 2014 (at least 10% by 2020)
- 12% of renewable heat by 2020
- Scotland: 15% of electricity generation from renewables by 2020 (80% by 2020)

FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2011



POLICIES IN PLACE TO PROMOTE RENEWABLE ENERGY SINCE THE RIO CONFERENCE OF 1992



Note: All Member States of the European Union published National Renewable Energy Action Plans in 2010, which detail how they expect to reach their legally binding 2020 target for the share of renewable energy in their total energy consumption, as required by the renewable energy Directive (2009/28/EC)

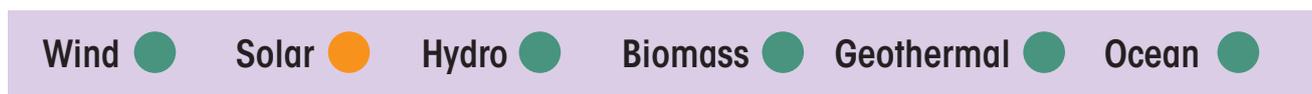
WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2013: Ranked 7 out of 185

RENEWABLE ENERGY PROJECTS REPORTED IN THE BNEF DATABASE (CAPACITY ADDITIONS):

- Around 2,230 MW and 700 MWth of biomass-fired capacity addition announced (56 projects)
- 10 MW and 65 MWth of geothermal capacity addition announced (2 projects)
- 231 million litres of biodiesel per year capacity addition announced (3 projects)
- 623 million litres of bioethanol per year capacity addition announced (4 projects)
- 37 MW of small hydro capacity addition announced (7 projects)
- 135 MW of solar photovoltaic capacity addition announced (19 projects)
- Around 40,000 MW of wind capacity addition announced (172 projects)
- Around 2,800 MW of marine capacity addition announced (26 projects)

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: Not applicable

RENEWABLE ENERGY RESOURCES: ● High ● Medium ● Low ● Unknown ✕ Not applicable



Note: The information on resources should be taken as an indication only. It refers to a general trend of available resources, and does not pre-judge the feasibility of individual projects. The thresholds are indicative, and do not refer to any technological choice. The analysis is based on the literature.

Sources: Population and GDP: World Bank; Energy data: IEA, IRENA analysis based on Eurostat data; Share of fuel imports in total imports: World Trade Organisation; Electrical capacity: IEA, Eurostat; Electricity access rate: World Energy Outlook 2012 database (IEA); Share of population using solid fuels: World Health Organisation; Targets: REN21, IRENA; Policy/legislation: IEA, IRENA research; Ease of doing business index: World Bank; Renewable energy projects: Bloomberg New Energy Finance, IRENA research; Clean Development Mechanism projects: UNFCCC; Renewable energy resources: IRENA analysis.

Units: USD: United States dollar; kWh: kilowatt-hour; GWh: gigawatt-hour (1 GWh=10⁶ kWh); TWh: terawatt-hour (1 TWh=10³ GWh); PJ: petajoule; MW: megawatt; GW: gigawatt (1 GW=10³ MW). Please also refer to the glossary for explanations on the terms used in the country profile.

GLOSSARY

1 – PRODUCTS

Coal comprises the solid fossil fuels consisting of carbonised vegetal matter (hard coal and brown coal) and the products derived from them (e.g. patent fuel, coke, blast furnace gas, coke oven gas).

Peat is a solid formed from the partial decomposition of dead vegetation under conditions of high humidity and limited air access. Peat is not considered a renewable resource as its regeneration period is long.

Oil covers the liquid fossil hydrocarbons comprising crude oil, liquids extracted from natural gas (NGL), fully or partly processed products from the refining of crude oil (e.g. gasoline, diesel) and functionally similar liquid hydrocarbons and organic chemicals from vegetal or animal origins.

Natural gas includes natural gas but excludes natural gas liquids, which are included in oil and oil products.

Nuclear shows the primary energy equivalent of the electricity produced by a nuclear power plant assuming an average thermal efficiency of 33%.

Wastes are materials no longer required by their holders and which are used as fuels. They comprise municipal waste and industrial waste.

Hydro shows the energy content of the electricity produced from devices driven by fresh, flowing or falling water. Hydro output excludes output from pumped storage plants.

Biofuels are the solid, liquid or gaseous material obtained from living or recently living organisms (e.g. wood, charcoal, biogasoline, biodiesels, vegetal or animal waste).

Solar is the energy that is captured from solar radiation to produce a useful energy output (electricity from solar photovoltaic, heat or electricity from solar thermal).

Geothermal is the energy of the heat that is extracted from the earth, usually in the form of heated water or steam.

Ocean shows the energy content of the electricity produced by tidal movement, wave motion, ocean current and other sources of marine energy.

Wind shows the energy content of the electricity produced by wind turbines.

Renewables are sources of energy which are naturally replenished as they are used. They include hydro, biofuels, solar, geothermal, ocean and wind. For the purposes of energy statistics, the renewable portion of municipal waste is also included.

2 – ENERGY NATIONAL PROFILE BOX

Total Primary Energy Supply is the net flow of fuel or energy into the national territory from production, external trade, international bunkers and changes in stocks. Note that this value includes electricity trade unlike the pie charts presented later, which can result in small differences in values and the share of renewables.

Self-sufficiency is the ratio of domestic production divided by Total Primary Energy Supply. A value below 100% means that the country is a net energy importer, i.e. that it has to import or draw from its stocks the energy needed to meet the part of demand that is not met by domestic production. Conversely, a value above 100% indicates that the country is a net energy exporter.

Fuel imports show the amount spent on importing coal and peat, oil, natural gas and electricity in the country. For most countries, this amount includes cost, insurance and freight (CIF) (source <http://www.wto.org>).

Electricity generation is the total amount of electricity produced in power plants (i.e. the gross electricity production).

Electricity use is the electricity available for consumption, defined as the sum of domestic production and external trade minus the transmission losses.

Electrical capacity is the net maximum installed capacity of all power plants at the end of the year concerned, i.e. the maximum power that can be supplied, continuously, with all of the plant running, at the point of outlet to the network.

Electricity access rate is the share of the population with access to electricity

Share of population using solid fuels is the percentage of the population that relies on solid biofuels, coal

and peat as the primary source of domestic energy for cooking and heating (source <http://www.who.int>).

3 – OTHER INDICATORS

World Bank ease of doing business index ranks economies from 1 to 183 in 10 areas of business regulation: starting a business, dealing with construction permits, registering property, getting credit, protecting investors, paying taxes, trading across borders, enforcing contracts, resolving insolvency and getting electricity (source: <http://www.doingbusiness.org>).

Registered Clean Development Mechanism (CDM) project: the CDM allows emission-reduction projects in developing countries to earn certified emission reduc-

tion credits which can be traded and sold, and used by industrialised countries to meet a part of their emission reduction targets under the Kyoto Protocol. A project is registered when the Executive Board of the CDM gives its final approval (source: <http://cdm.unfccc.int>).

4 – RESOURCES

Note: Data on the assessment of the resources of tidal power and ocean current is not available. Therefore, and for the purposes of the resource assessment only, ocean energy is limited to wave energy.

For each renewable energy source, the rating is explained in the table below.

	Wind	Solar	Hydro	Biomass	Geothermal	Ocean
High 	Several areas with average wind speed above 7 m/s at 50 m high	Several areas with global horizontal irradiation above 1800 kWh/m ² per year	One or more sites can be equipped with a large hydro-power facility (>10 MW)	Maximum identified theoretical potential above 100 PJ incl. agriculture, wood and residues	One or more sites can be equipped with a large scale facility (>10 MW)	Wave power above 30 kW/m
Medium 	Several areas with average wind speed between 5 and 7 m/s at 50 m high	Several areas with global horizontal irradiation between 1200 and 1800 kWh/m ² per year	One or more sites can be equipped with a medium scale hydro-power facility (1-10 MW)	Maximum identified theoretical potential between 10 and 100 PJ incl. agriculture, wood and residues	One or more sites can be equipped with a medium scale facility (1-10 MW)	Wave power between 10 and 30 kW/m
Low 	No area identified with average wind speed above 5 m/s	No identified area with global horizontal irradiation above 1200 kWh/m ² per year	One or more sites can be equipped with a small scale hydro-power facility (<1 MW)	Maximum identified theoretical potential below 10 PJ incl. agriculture, wood and residues	One or more sites can be equipped with a small scale facility (<1 MW)	Wave power below 10 kW/m
Unknown 	No data identified by IRENA as yet					



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