

RENEWABLE ENERGY COUNTRY PROFILES

LATIN AMERICA

June 2012 edition

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The [IRENA Renewable Energy Country Profiles](#) combine elements of IRENA analysis with the latest information available from a vast array of sources in order to give a brief yet comprehensive and up-to-date picture of the situation of renewable energy that includes energy supply, electrical capacity, energy access, policies, targets, investment climate, projects and endowment in renewable energy resources. Because of the different timelines of these sources, data presented here refer to years between 2009 and 2012. Data availability also differs from country to country, which makes comparison with a wider regional group possible only for the year for which figures are available for all the members of the group; while this may not be the most recent year, the differences between countries, regions and the world remain striking.

The current country profiles are just a starting point; they will be extended upon with new indicators to make them more informative, and maintained as a live product on the IRENA website as a key source of information on renewable energy. Your comments and feedback on both the format and the contents would be most appreciated at statistics@irena.org.

ARGENTINA



40.4 million Population (2010)
368.7 billion USD GDP (2010)
9,124 USD GDP per capita (2010)

FIGURE 1: GDP PER CAPITA FOR 2010

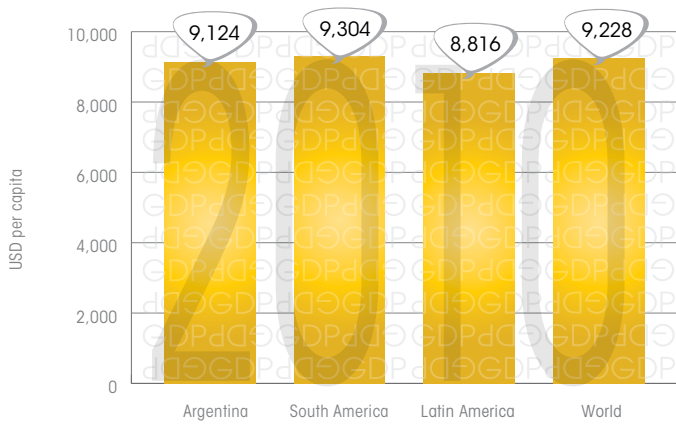
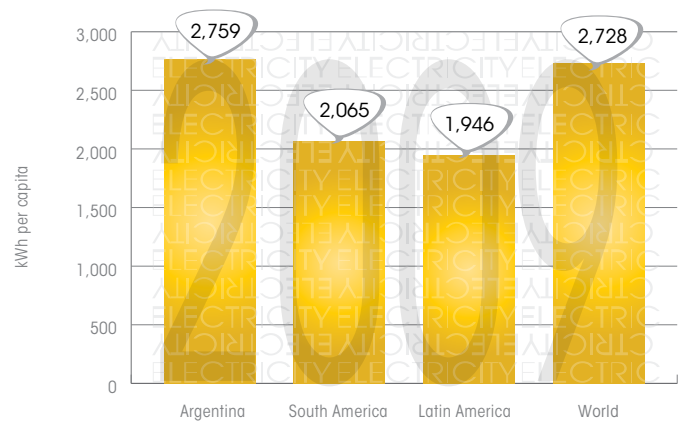


FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2009



South America includes Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Guyana, Paraguay, Peru, Suriname, Uruguay and Venezuela. Latin America includes Argentina, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Guyana, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Suriname, Uruguay and Venezuela.

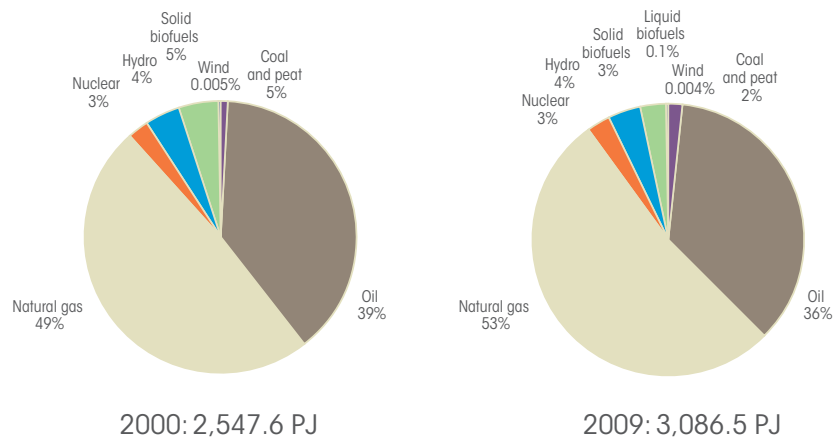
ENERGY NATIONAL PROFILE 2009

- Total Primary Energy Supply: 3,108.6 PJ - Of which renewables: 217.8 PJ (7.0%)
- Energy self-sufficiency: 108.8%
- Fuel imports: 4.2 billion USD (7.4% of total imports)
- Electricity generation: 121.9 TWh - Of which renewables: 35.6 TWh (29.2%)
- Electricity use per capita: 2,759 kWh
- Electrical capacity: 32.1 GW - Of which renewables: 9.1 GW (28.4%)
- Electricity access rate: 97.2%
- Share of population using solid fuels: 5%

TARGETS:

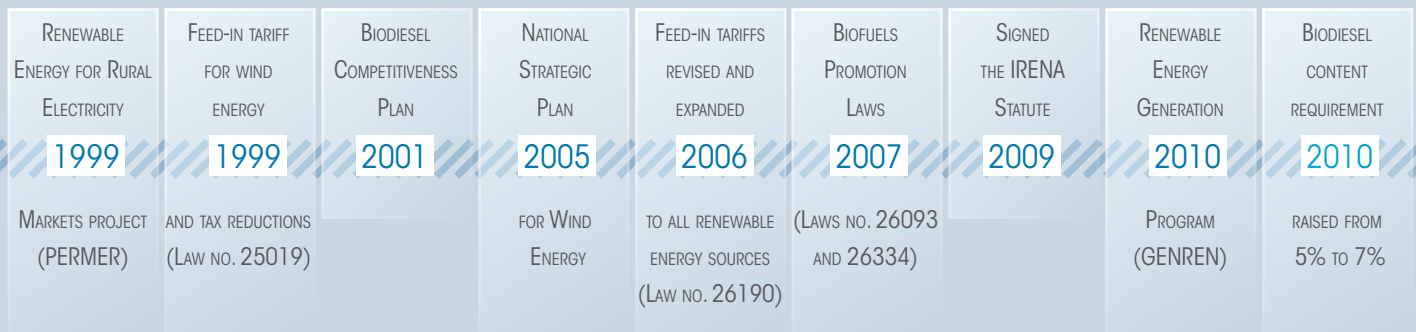
- 8% of electricity generation from renewables (excluding large hydro) by 2016

FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2009



*excluding electricity trade

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



WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2012: Ranked 113 out of 183

RENEWABLE ENERGY PROJECTS FROM THE GOVERNMENT AND PRIVATE SECTORS (CAPACITY ADDITIONS):

- 2.4 million litres of biodiesel per year by the end of 2012 (1 project); more than 2,000 million litres of biodiesel and 140 million litres of bioethanol per year announced (26 projects)
- 34 MW of wind by the end of 2012 (2 projects); more than 3,900 MW announced (37 projects)
- More than 2,000 million litres of biodiesel and 140 million litres of bioethanol per year announced (26 projects)
- More than 360 MW of biomass-fired announced (24 projects)
- 335 MW of geothermal announced (4 projects)
- 26 MW of small hydro announced (10 projects)
- 63 MW of solar photovoltaic announced (9 projects)

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: 7

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 prejudge 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 UN data; Share of fuel imports in total imports: World Trade Organisation; Electrical capacity: IEA, EIA; Electricity access rate: World Energy Outlook 2011 database (IEA); Share of population using solid fuels: World Health Organisation; Targets: REN21, IRENA; Policy/legislation: IEA, Reegle, 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.

BELIZE



345,000 Population (2010)
1.4 billion USD GDP (2010)
4,064 USD GDP per capita (2010)

FIGURE 1: GDP PER CAPITA FOR 2010

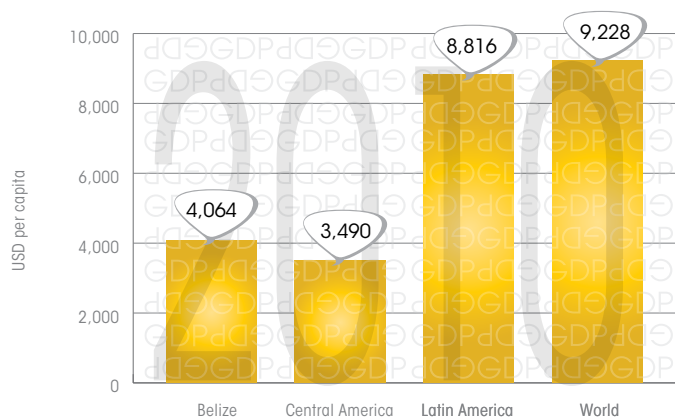
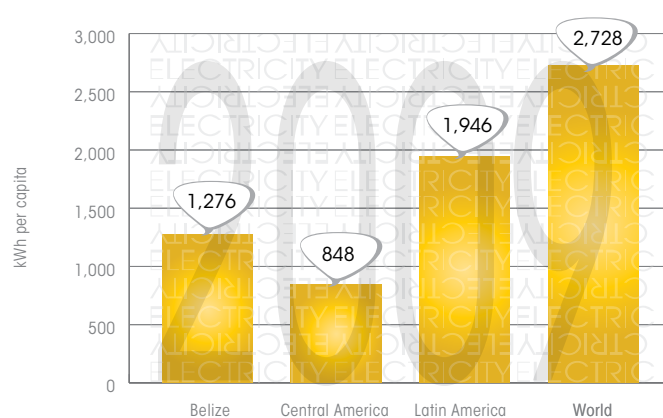


FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2009



Central America includes Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama. Latin America includes Argentina, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Guyana, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Suriname, Uruguay and Venezuela.

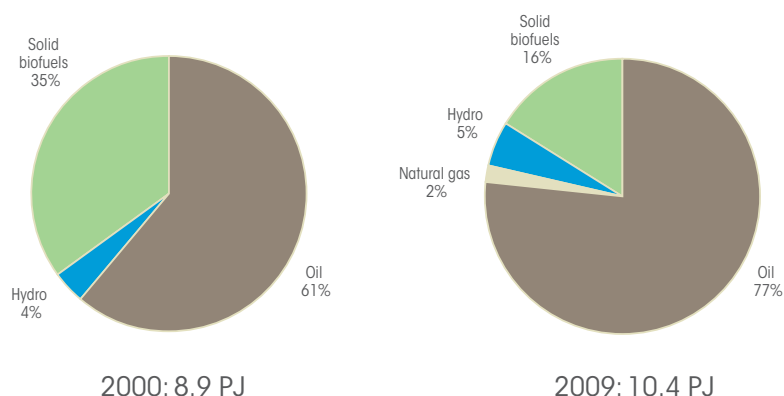
ENERGY NATIONAL PROFILE 2009

- Total Primary Energy Supply: 11.2 PJ - Of which renewables: 2.2 PJ (19.8%)
- Energy self-sufficiency: 110.5%
- Fuel imports: 129 million USD (18.2% of total imports)
- Electricity generation: 264.5 GWh - Of which renewables: 194.9 GWh (73.7%)
- Electricity use per capita: 1,276 kWh
- Electrical capacity: 102 MW - Of which renewables: 68 MW (66.7%)
- Electricity access rate: 85.0%
- Share of population using solid fuels: 10%

TARGETS:

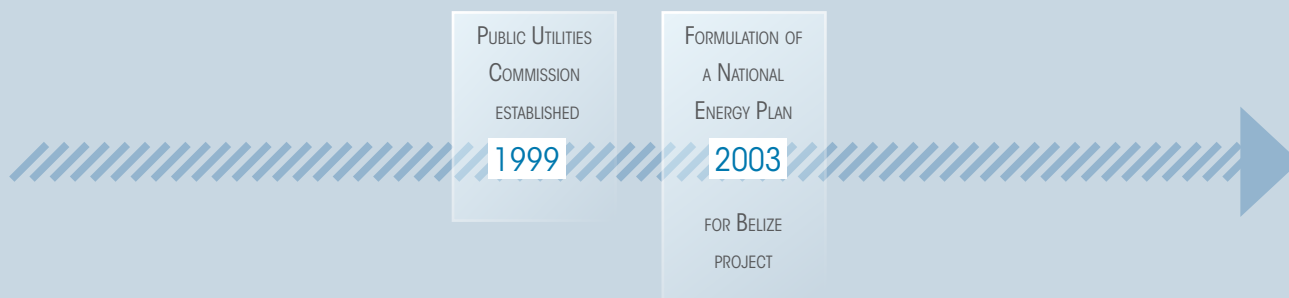
- No information available

FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2009



*excluding electricity trade

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



WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2012: Ranked 93 out of 183

RENEWABLE ENERGY PROJECTS FROM THE GOVERNMENT AND PRIVATE SECTORS:

- 0.35 MW of solar photovoltaic capacity addition by 2012 (1 project)
- 189 million litres of biodiesel per year capacity addition announced (1 project)

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: 0

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 prejudice 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.

BOLIVIA



9.9 million Population (2010)
19.6 billion USD GDP (2010)
1,979 USD GDP per capita (2010)

FIGURE 1: GDP PER CAPITA FOR 2010

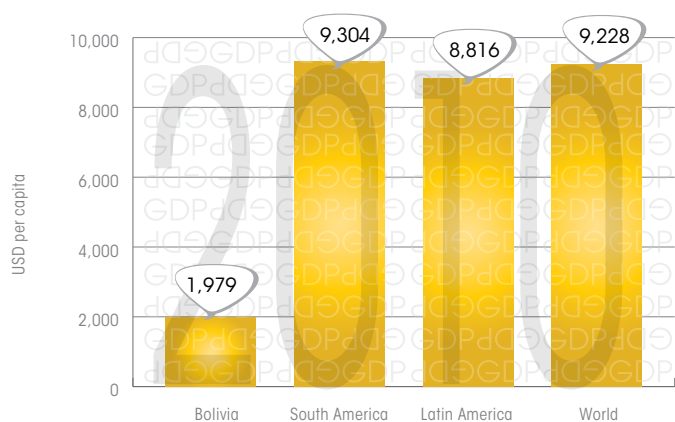
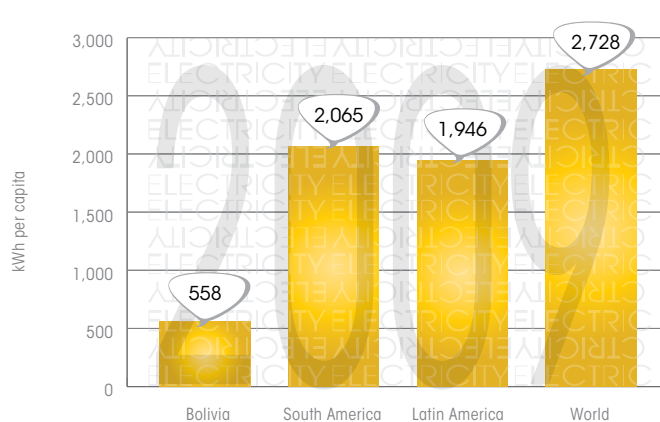


FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2009



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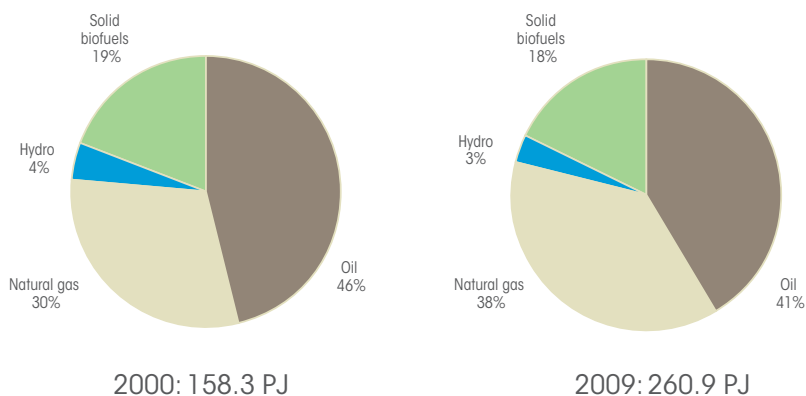
ENERGY NATIONAL PROFILE 2009

- Total Primary Energy Supply: 260.9 PJ - Of which renewables: 54.4 PJ (20.9%)
- Energy self-sufficiency: 227.8%
- Fuel imports: 652 million USD (12.2% of total imports)
- Electricity generation: 6.1 TWh - Of which renewables: 2,360 GWh (38.6%)
- Electricity use per capita: 558 kWh
- Electrical capacity: 1,539 MW - Of which renewables: 498 MW (32.4%)
- Electricity access rate: 77.5%
- Share of population using solid fuels: 31%

TARGETS:

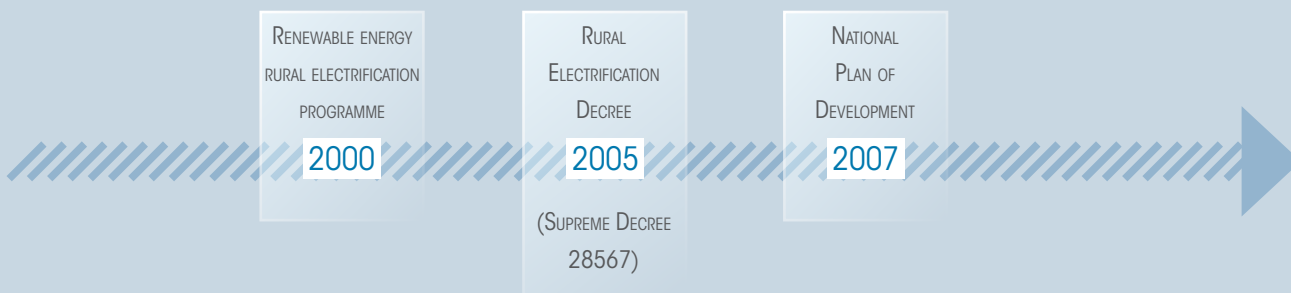
- No information available

FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2009



*excluding electricity trade

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



WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2012: Ranked 153 out of 183

RENEWABLE ENERGY PROJECTS FROM THE GOVERNMENT AND PRIVATE SECTORS:

- 50 MW of biomass-fired capacity addition announced (1 project)
- 100 MW of geothermal capacity addition announced (1 project)
- 1.7 MW of small hydro capacity addition announced (1 project)
- 26 MW of wind capacity addition announced (2 projects)

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: 1

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 prejudice 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 (1GWh = 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.

BRAZIL



194.9 million Population (2010)
2,087.9 billion USD GDP (2010)
10,710 USD GDP per capita (2010)

FIGURE 1: GDP PER CAPITA FOR 2010

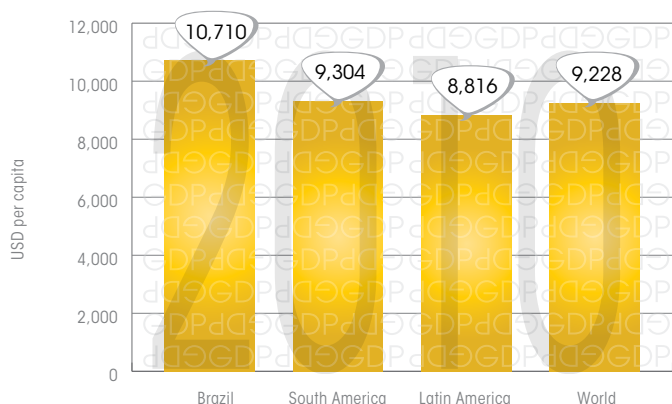
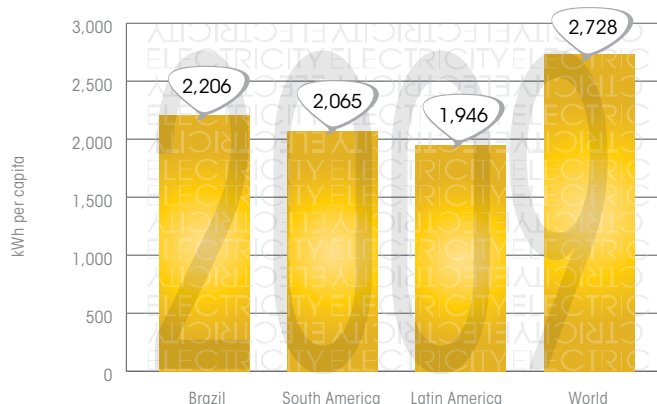


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ENERGY NATIONAL PROFILE 2009

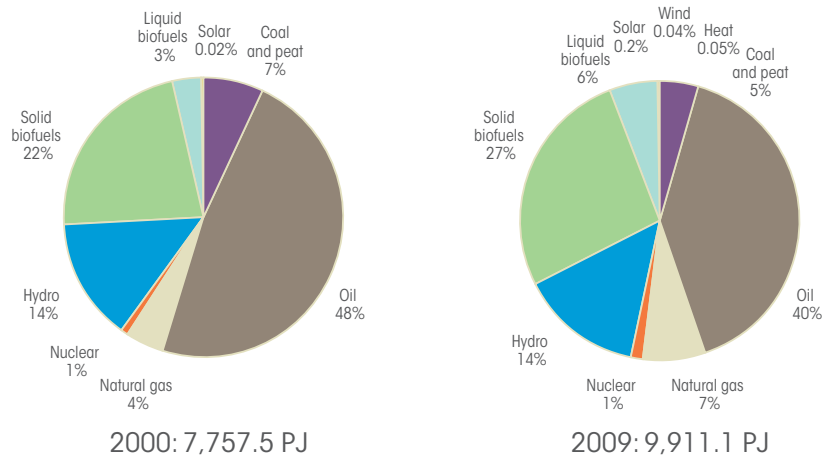
- Total Primary Energy Supply: 10,055.1 PJ - Of which renewables: 4,606.7 PJ (45.8%)
- Energy self-sufficiency: 95.9%
- Fuel imports: 30.0 billion USD (15.6% of total imports)
- Electricity generation: 466.5 TWh - Of which renewables: 415.3 TWh (89.0%)
- Electricity use per capita: 2,206 kWh
- Electrical capacity: 106.2 GW - Of which renewables: 86.0 GW (81.0%)
- Electricity access rate: 98.3%
- Share of population using solid fuels: 7%

TARGETS:

- 16% of electricity generation from renewables (excluding large hydro) by 2020
- 11.5 GW of wind capacity by 2020
- 9.2 GW of biomass-fired capacity by 2020
- 6.4 GW of small hydro capacity by 2020

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FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2009



*excluding electricity trade

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

Year	Policy Name	Key Details
1993	22% BIOETHANOL BLEND REQUIREMENT	
1996	NATIONAL PROGRAMME FOR ENERGY	DEVELOPMENT OF STATES AND MUNICIPALITIES (PRODEEM)
1999	"LUZ NO CAMPO" NATIONAL RURAL	ELECTRIFICATION PROGRAMME
2002	PROGRAMME OF INCENTIVES FOR ALTERNATIVE	ELECTRICITY SOURCES (LAW 10438)
2003/07	"LUZ PARA TODOS" ELECTRIFICATION PROGRAMME	25% BIOETHANOL BLEND REQUIREMENT
2008	FIRST BIOMASS-ONLY RESERVE	ENERGY AUCTION
2008	BRAZIL NATIONAL CLIMATE CHANGE PLAN	3% BIODIESEL BLEND REQUIREMENT
2009	4% BIODIESEL BLEND REQUIREMENT	FIRST WIND POWER PRODUCER-ONLY RESERVE ENERGY AUCTION
2010	25% BIOETHANOL BLEND REQUIREMENT	5% BIODIESEL BLEND REQUIREMENT

WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2012: Ranked 126 out of 183

RENEWABLE ENERGY PROJECTS FROM THE GOVERNMENT AND PRIVATE SECTORS (CAPACITY ADDITIONS):

- More than 450 million litres of biodiesel per year by the end of 2013 (4 projects) and more than 3,300 million litres per year announced (33 projects)
- More than 4,500 million litres of bioethanol per year by 2016 (22 projects) and more than 8,700 million litres per year announced (50 projects)
- More than 60 MW of biomass-fired by mid 2013 (4 projects), more than 860 MW announced (68 projects) and around 320 MWth announced (7 projects)
- 98 MW of small hydro by the end of 2015 (6 projects) and 1,725 MW announced (136 projects)
- 1.5 MW of solar photovoltaic by the end of 2012 (1 project) and 289 MW announced (7 projects)
- 50 MW of solar thermal announced (1 project)
- Around 1,050 MW of wind by 2014 (37 projects) and around 20,500 MW announced (625 projects)

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: 108

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 prejudice 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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CHILE



17.1 million Population (2010)
212.7 billion USD GDP (2010)
12,431 USD GDP per capita (2010)

FIGURE 1: GDP PER CAPITA FOR 2010

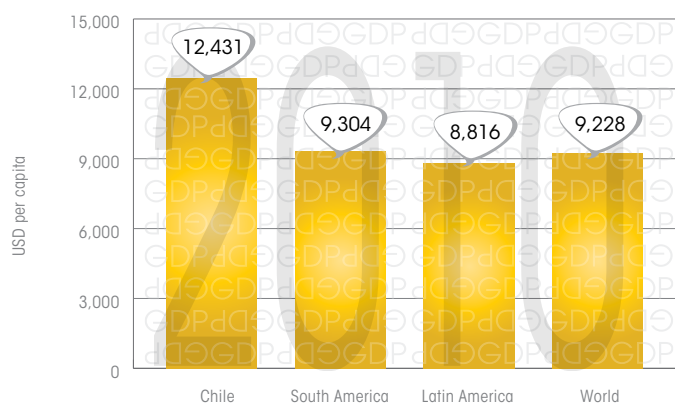
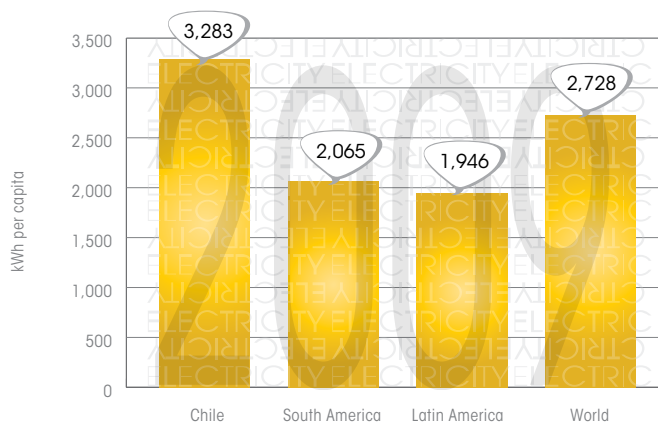


FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2009



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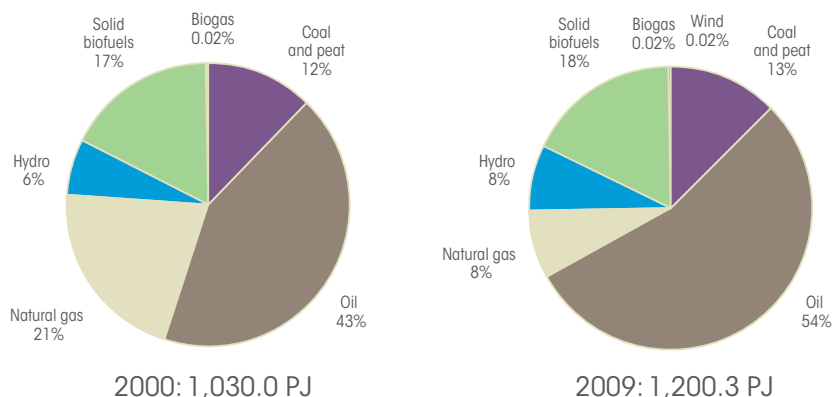
ENERGY NATIONAL PROFILE 2009

- Total Primary Energy Supply: 1,205.1 PJ - Of which renewables: 302.9 PJ (25.1%)
- Energy self-sufficiency: 32.3%
- Fuel imports: 11.4 billion USD (19.4% of total imports)
- Electricity generation: 60.7 TWh - Of which renewables: 29.6 TWh (48.8%)
- Electricity use per capita: 3,283 kWh
- Electrical capacity: 16.2 GW - Of which renewables: 5.9 GW (36.8%)
- Electricity access rate: 98.5%
- Share of population using solid fuels: Not available

TARGETS:

- 8% of electricity generation from renewables (excluding large hydro) by 2020

FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2009



*excluding electricity trade

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



WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2012: Ranked 39 out of 183

RENEWABLE ENERGY PROJECTS FROM THE GOVERNMENT AND PRIVATE SECTORS:

- 2.4 million litres of bioethanol per year capacity addition by the end of 2012 (1 project)
- 35 MW of biomass-fired capacity addition by the end of 2013 (1 project), more than 410 MW announced (26 projects) and 10 MWth announced (1 project)
- 80 MW of geothermal capacity addition by 2014 (2 projects) and more than 660 MW announced (13 projects)
- 20 MW of small hydro capacity addition by the end of 2012 (1 project) and 385 MW announced (30 projects)
- 525 MW of solar photovoltaic capacity announced (11 projects)

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: 31

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 prejudice 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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COLOMBIA



46.3 million Population (2010)
288.2 billion USD GDP (2010)
6,225 USD GDP per capita (2010)

FIGURE 1: GDP PER CAPITA FOR 2010

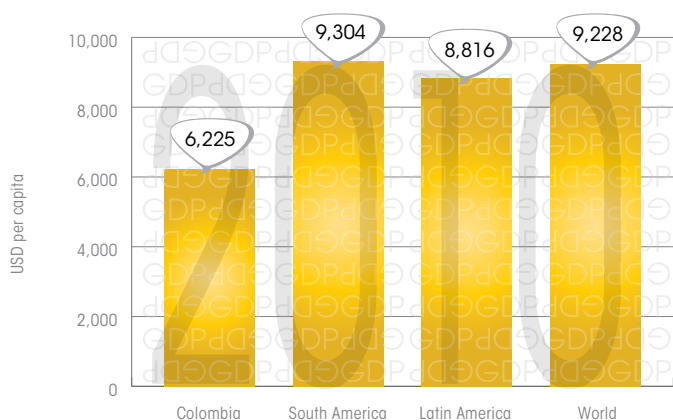
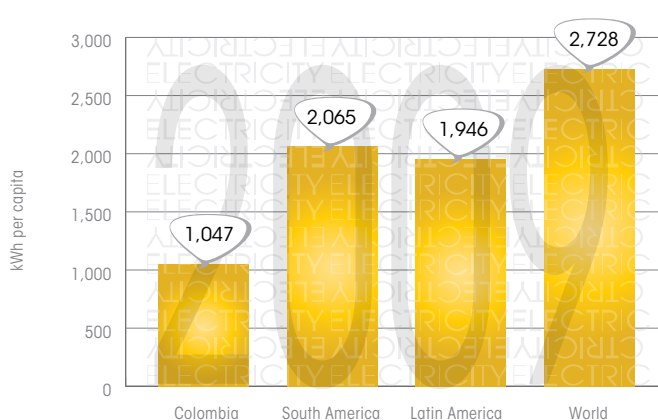


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ENERGY NATIONAL PROFILE 2009

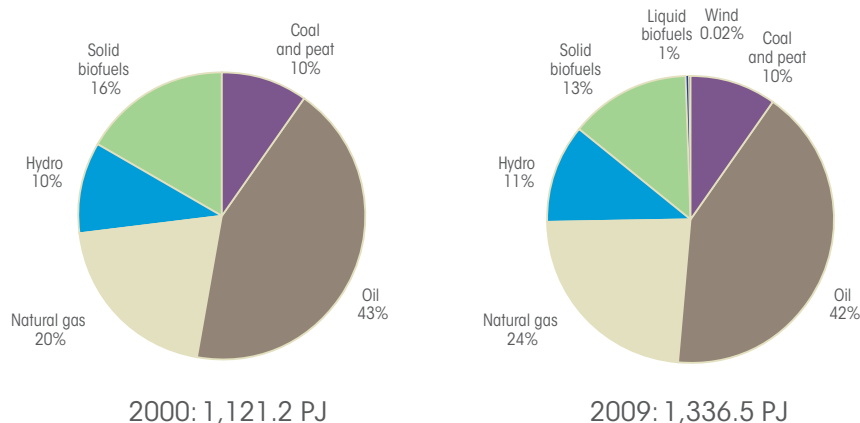
- Total Primary Energy Supply: 1,332.7 PJ - Of which renewables: 334.4 PJ (25.1%)
- Energy self-sufficiency: 311.5%
- Fuel imports: 2.1 billion USD (5.1% of total imports)
- Electricity generation: 57.3 TWh - Of which renewables: 41.7 TWh (72.8%)
- Electricity use per capita: 1,047 kWh
- Electrical capacity: 13.5 GW - Of which renewables: 9.1 GW (67.1%)
- Electricity access rate: 95.6% (National Interconnected System);
65.2% (Non-Interconnected Zones)
- Share of population using solid fuels: 13%

TARGETS:

- 3.5% of electricity generation to the grid from renewables (excluding large hydro) by 2015
- 6.5% of electricity generation to the grid from renewables (excluding large hydro) by 2020
- 20% of off-grid electricity generation from renewables (excluding large hydro) by 2015
- 30% of off-grid electricity generation from renewables (excluding large hydro) by 2020

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FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2009



*excluding electricity trade

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



WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2012: Ranked 42 out of 183

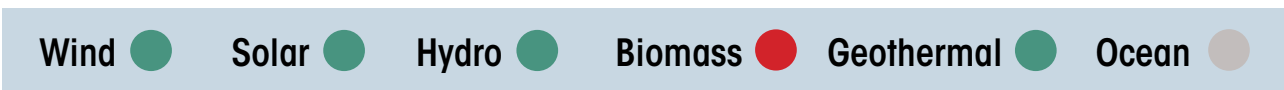
RENEWABLE ENERGY PROJECTS FROM THE GOVERNMENT AND PRIVATE SECTORS:

- 228 million litres of bioethanol per year capacity addition by the end of 2013 (2 projects)
- 20 MW of small hydro capacity addition by the end of 2014 (2 projects) and 102 MW announced (11 projects)
- 34 MW of biomass-fired capacity addition announced (6 projects)
- 2.7 MW of marine capacity addition announced (1 project)

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: 13

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 UN data; Share of fuel imports in total imports: World Trade Organisation; Electrical capacity: IEA, EIA; Electricity access rate: World Energy Outlook 2011 database (IEA); Share of population using solid fuels: World Health Organisation; Targets: REN21, IRENA; Policy/legislation: IEA, Reegle, 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 (1GWh = 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.

COSTA RICA



4.7 million Population (2010)
35.8 billion USD GDP (2010)
7,691 USD GDP per capita (2010)

FIGURE 1: GDP PER CAPITA FOR 2010

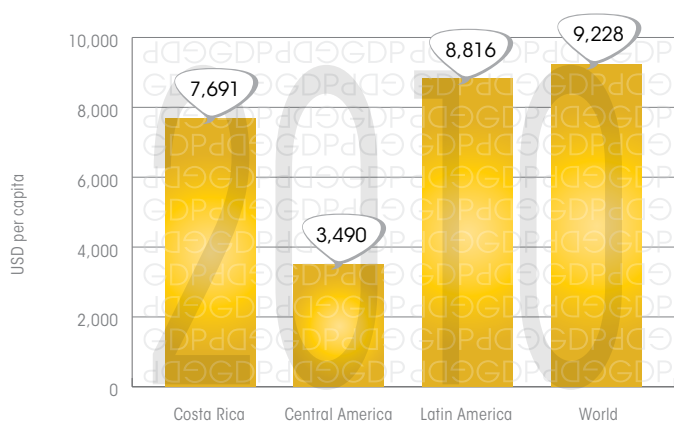
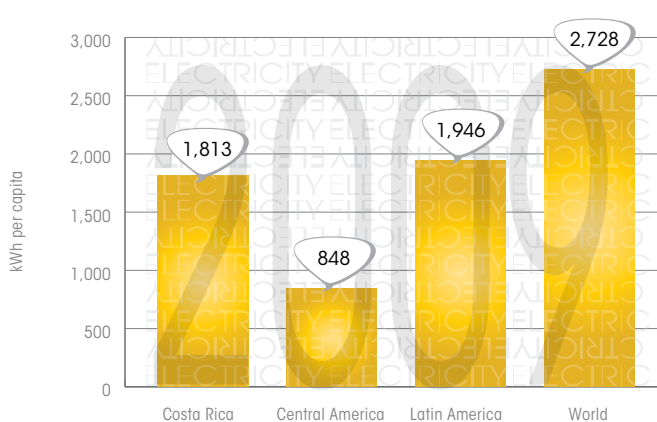


FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2009



Central America includes Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama. Latin America includes Argentina, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Guyana, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Suriname, Uruguay and Venezuela.

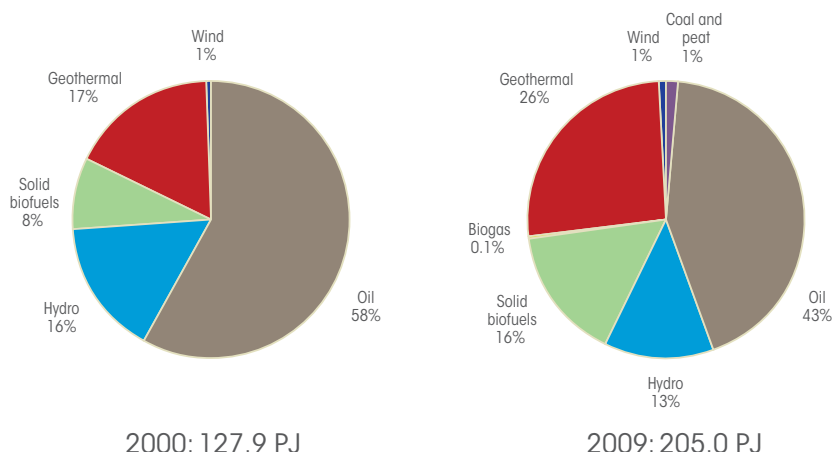
ENERGY NATIONAL PROFILE 2009

- Total Primary Energy Supply: 205.1 PJ - Of which renewables: 113.4 PJ (55.3%)
- Energy self-sufficiency: 55.3%
- Fuel imports: 1.7 billion USD (12.4% of total imports)
- Electricity generation: 9.3 TWh - Of which renewables: 8.8 TWh (95.1%)
- Electricity use per capita: 1,813 kWh
- Electrical capacity: 2,490 MW - Of which renewables: 1,872 MW (75.2%)
- Electricity access rate: 99.3%
- Share of population using solid fuels: Not available

TARGETS:

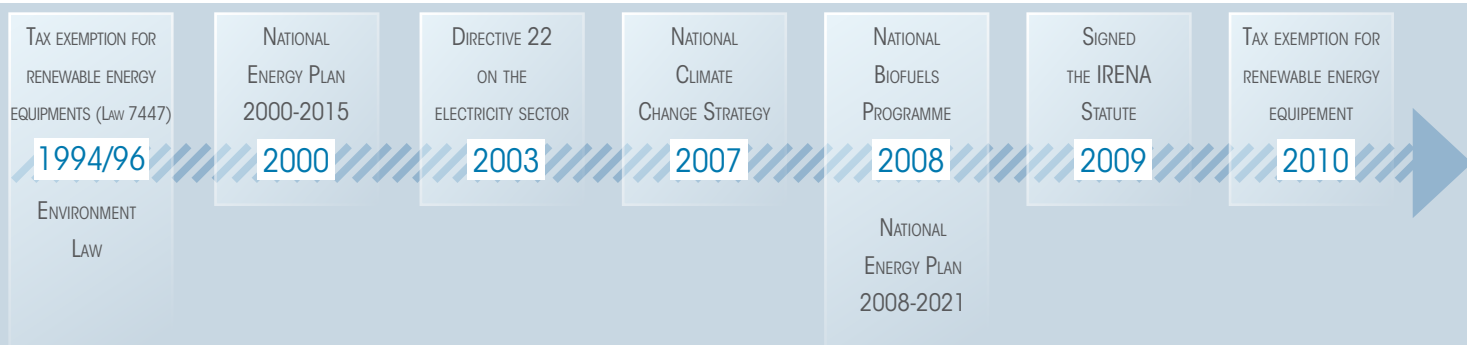
- Carbon neutrality by 2021

FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2009



*excluding electricity trade

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



WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2012: Ranked 121 out of 183

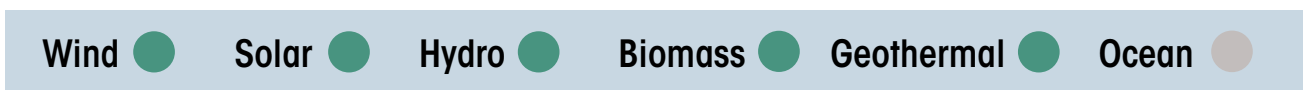
RENEWABLE ENERGY PROJECTS FROM THE GOVERNMENT AND PRIVATE SECTORS:

- 50 MW of small hydro capacity addition by mid 2013 (1 project) and 22 MW announced (1 project)
- 50 MW of wind capacity addition by the end of 2013 (1 project) and 33 MW announced (3 projects)
- 3.7 MW of landfill gas to energy capacity addition announced (1 project)
- 12 MW of geothermal capacity addition announced (1 project)

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: 7

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 UN data; Share of fuel imports in total imports: World Trade Organisation; Electrical capacity: IEA, EIA; Electricity access rate: World Energy Outlook 2011 database (IEA); Share of population using solid fuels: World Health Organisation; Targets: REN21, IRENA; Policy/legislation: IEA, Reegle, 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=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.

ECUADOR



14.5 million Population (2010)
58.0 billion USD GDP (2010)
4,008 USD GDP per capita (2010)

FIGURE 1: GDP PER CAPITA FOR 2010

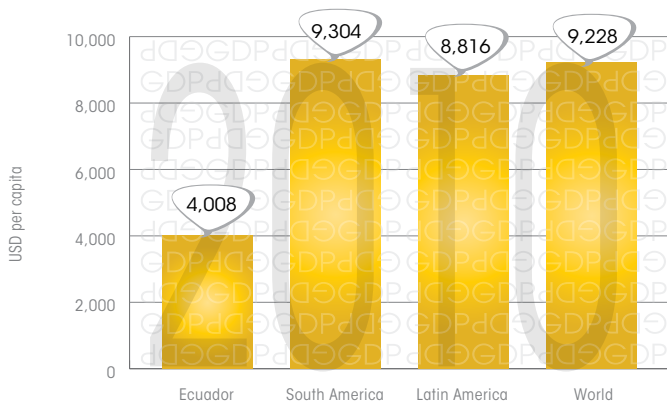
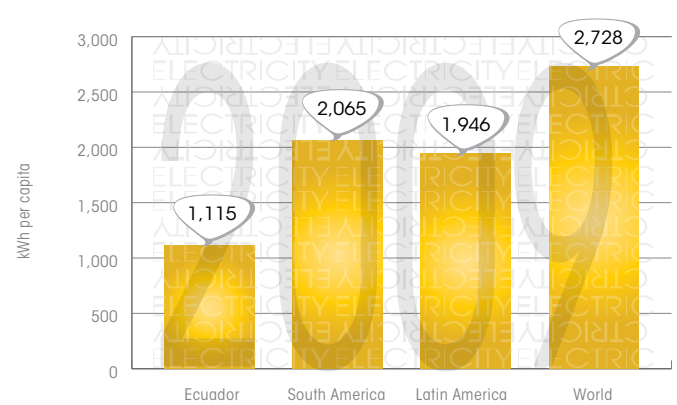


FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2009



South America includes Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Guyana, Paraguay, Peru, Suriname, Uruguay and Venezuela. Latin America includes Argentina, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Guyana, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Suriname, Uruguay and Venezuela.

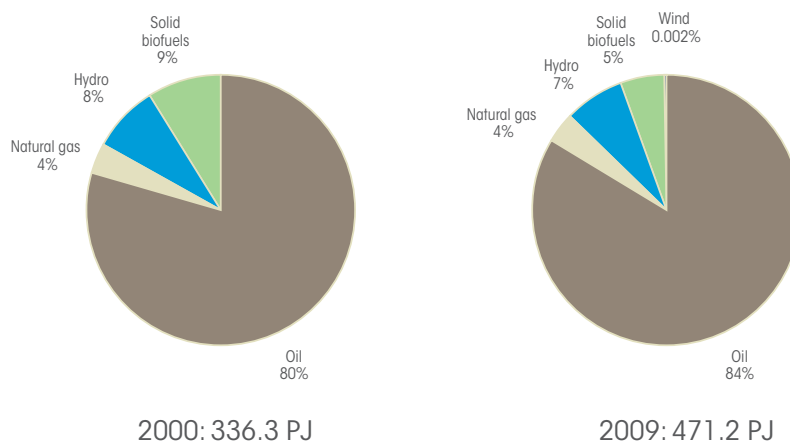
ENERGY NATIONAL PROFILE 2009

- Total Primary Energy Supply: 475.3 PJ - Of which renewables: 59.0 PJ (12.4%)
- Energy self-sufficiency: 240.7%
- Fuel imports: 4.4 billion USD (21.3% of total imports)
- Electricity generation: 17.2 TWh - Of which renewables: 9.6 TWh (55.6%)
- Electricity use per capita: 1,115 kWh
- Electrical capacity: 4,939 MW - Of which renewables: 2,162 MW (43.8%)
- Electricity access rate: 92.2%
- Share of population using solid fuels: < 5%

TARGETS:

- No information available

FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2009

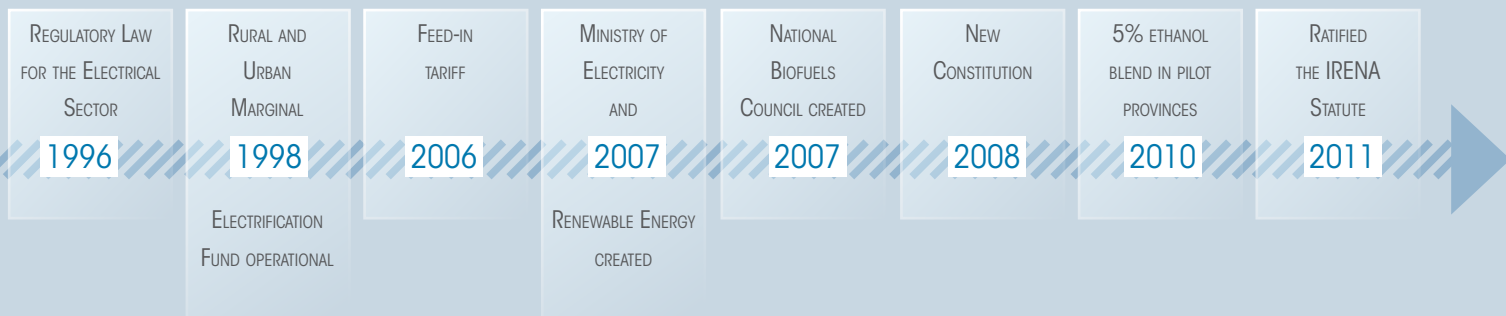


*excluding electricity trade

2000: 336.3 PJ

2009: 471.2 PJ

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



WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2012: Ranked 130 out of 183

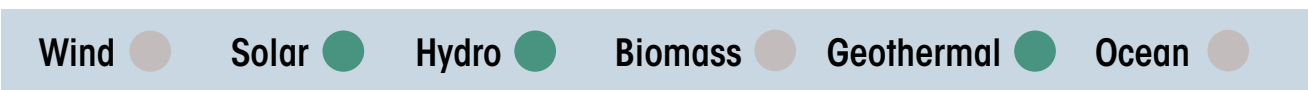
RENEWABLE ENERGY PROJECTS FROM THE GOVERNMENT AND PRIVATE SECTORS:

- More than 31 MW of biomass-fired capacity addition announced (4 projects)
- 190 MW of small hydro capacity addition announced (9 projects)
- 30 MW of wind capacity addition announced (1 project)

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: 11

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 prejudice 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 UN data; Share of fuel imports in total imports: World Trade Organisation; Electrical capacity: IEA, EIA; Electricity access rate: World Energy Outlook 2011 database (IEA); Share of population using solid fuels: World Health Organisation; Targets: REN21, IRENA; Policy/legislation: IEA, Reegle, 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 (1GWh = 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.

EL SALVADOR



6.2 million Population (2010)
21.2 billion USD GDP (2010)
3,426 USD GDP per capita (2010)

FIGURE 1: GDP PER CAPITA FOR 2010

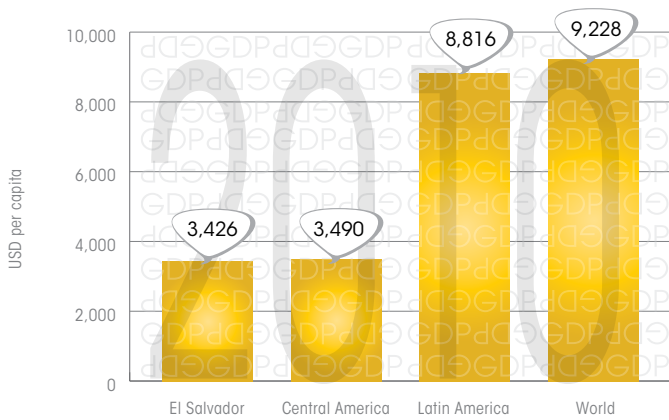
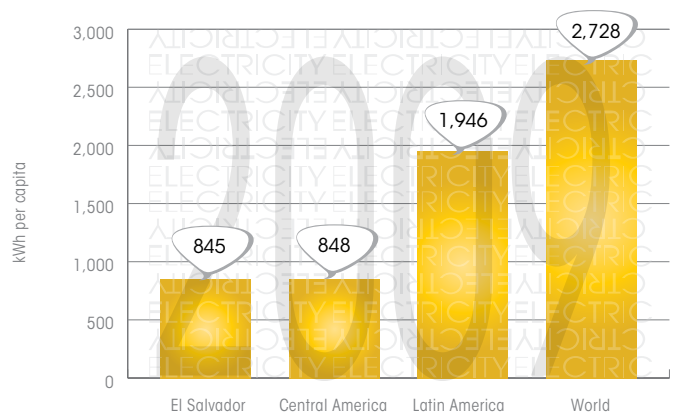


FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2009



Central America includes Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama. Latin America includes Argentina, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Guyana, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Suriname, Uruguay and Venezuela.

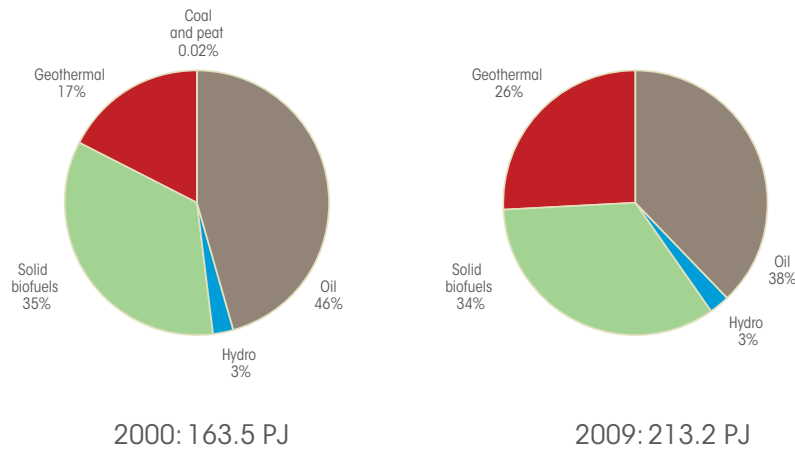
ENERGY NATIONAL PROFILE 2009

- Total Primary Energy Supply: 213.6 PJ - Of which renewables: 132.5 PJ (62.0%)
- Energy self-sufficiency: 62.0%
- Fuel imports: 1.4 billion USD (16.2% of total imports)
- Electricity generation: 5.8 TWh - Of which renewables: 3,261 GWh (56.3%)
- Electricity use per capita: 845 kWh
- Electrical capacity: 1,501 MW - Of which renewables: 706 MW (47.0%)
- Electricity access rate: 86.4%
- Share of population using solid fuels: 23%

TARGETS:

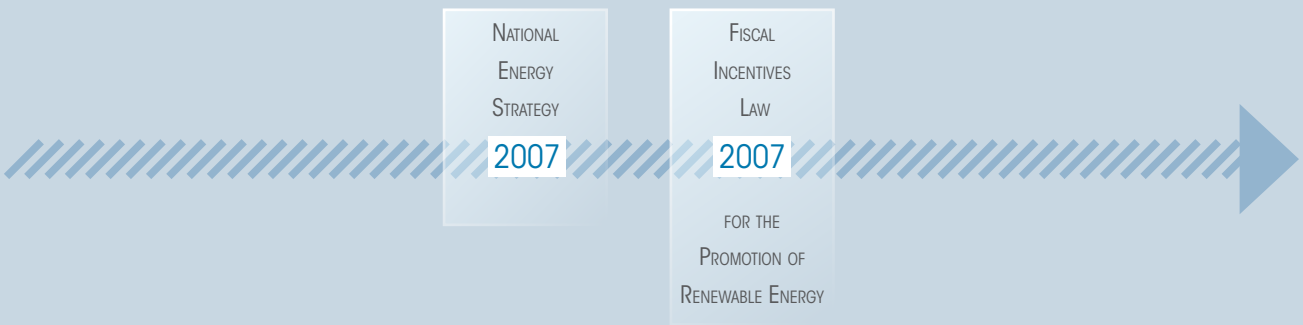
- No information available

FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2009



*excluding electricity trade

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



WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2012: Ranked 112 out of 183

RENEWABLE ENERGY PROJECTS FROM THE GOVERNMENT AND PRIVATE SECTORS:

- 56.8 million litres of bioethanol per year capacity addition announced (1 project)
- 79 MW of biomass-fired capacity addition announced (2 projects)
- 54 MW of geothermal capacity addition announced (1 project)
- 16 MW of small hydro capacity addition announced (1 project)

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: 6

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 prejudice 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 UN data; Share of fuel imports in total imports: World Trade Organisation; Electrical capacity: IEA, EIA; Electricity access rate: World Energy Outlook 2011 database (IEA); Share of population using solid fuels: World Health Organisation; Targets: REN21, IRENA; Policy/legislation: IEA, Reegle, 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 (1GWh = 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.

GUATEMALA



14.4 million Population (2010)
41.2 billion USD GDP (2010)
2,862 USD GDP per capita (2010)

FIGURE 1: GDP PER CAPITA FOR 2010

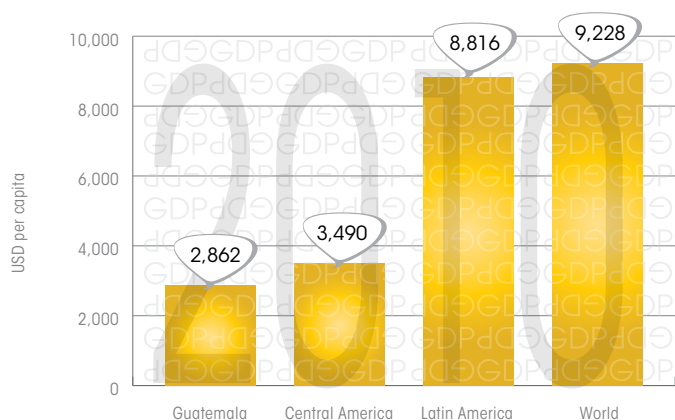
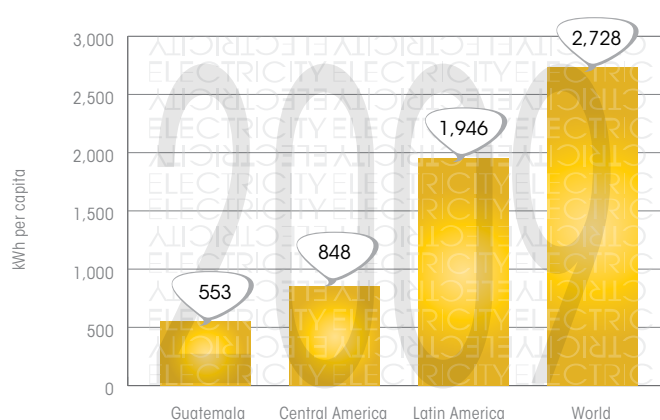


FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2009



Central America includes Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama. Latin America includes Argentina, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Guyana, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Suriname, Uruguay and Venezuela.

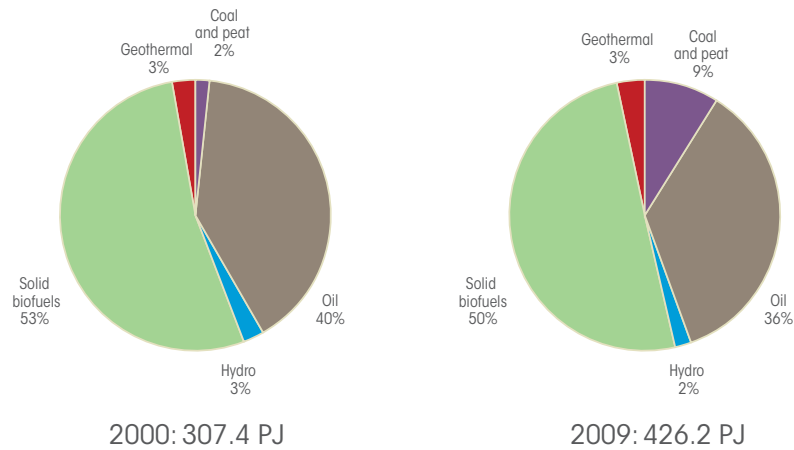
ENERGY NATIONAL PROFILE 2009

- Total Primary Energy Supply: 426.0 PJ - Of which renewables: 236.0 PJ (55.4%)
- Energy self-sufficiency: 62.7%
- Fuel imports: 2.5 billion USD (18.1% of total imports)
- Electricity generation: 9.0 TWh - Of which renewables: 4,442 GWh (49.1%)
- Electricity use per capita: 553 kWh
- Electrical capacity: 2,673 MW - Of which renewables: 1,118 MW (41.8%)
- Electricity access rate: 80.5%
- Share of population using solid fuels: 62%

TARGETS:

- 60% of electricity generation from renewables by 2022

FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2009



*excluding electricity trade

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



WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2012: Ranked 97 out of 183

RENEWABLE ENERGY PROJECTS FROM THE GOVERNMENT AND PRIVATE SECTORS:

- More than 139 MW of biomass-fired capacity addition announced (7 projects)
- 73 MW of geothermal capacity addition announced (2 projects)
- 161 MW of small hydro capacity addition announced (5 projects)
- 40 MW of wind capacity addition announced (1 project)

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: 7

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 prejudice 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 (1GWh = 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.

GUYANA



754,000 Population (2010)
2.2 billion USD GDP (2010)
2,950 USD GDP per capita (2010)

FIGURE 1: GDP PER CAPITA FOR 2010

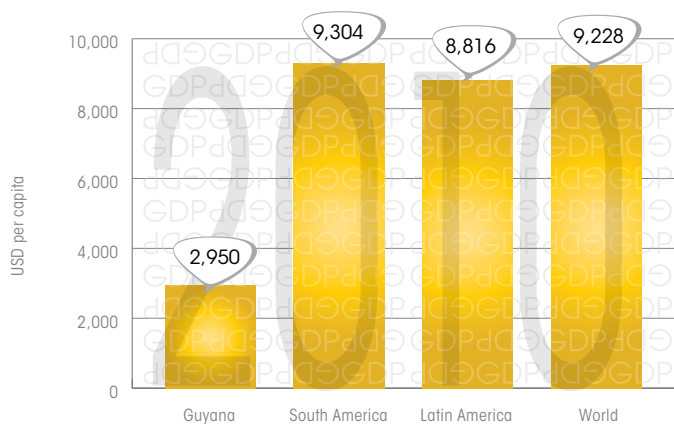
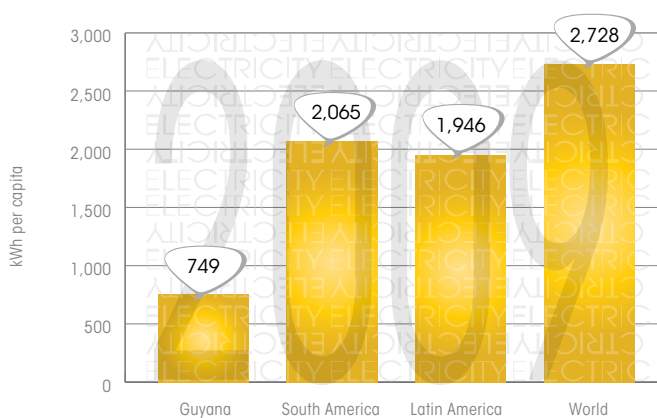


FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2009



South America includes Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Guyana, Paraguay, Peru, Suriname, Uruguay and Venezuela. Latin America includes Argentina, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Guyana, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Suriname, Uruguay and Venezuela.

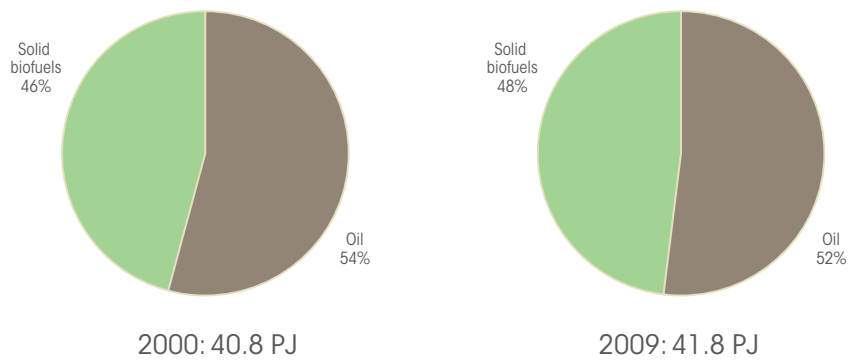
ENERGY NATIONAL PROFILE 2009

- Total Primary Energy Supply: 41.8 PJ - Of which renewables: 20.0 PJ (47.8%)
- Energy self-sufficiency: 47.8%
- Fuel imports: 422 million USD (30.2% of total imports)
- Electricity generation: 723.1 GWh - Of which renewables: 72.2 GWh (10.0%)
- Electricity use per capita: 749 kWh
- Electrical capacity: 343 MW - Of which renewables: 1 MW (0.3%)
- Electricity access rate: 60.0%
- Share of population using solid fuels: 11%

TARGETS:

- No information available

FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2009



*excluding electricity trade

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



WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2012: Ranked 114 out of 183

RENEWABLE ENERGY PROJECTS FROM THE GOVERNMENT AND PRIVATE SECTORS:

- 10 MW of biomass-fired capacity addition announced (1 project)

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: 1

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 prejudice 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 (1GWh = 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.

HONDURAS



7.6 million Population (2010)
15.4 billion USD GDP (2010)
2,026 USD GDP per capita (2010)

FIGURE 1: GDP PER CAPITA FOR 2010

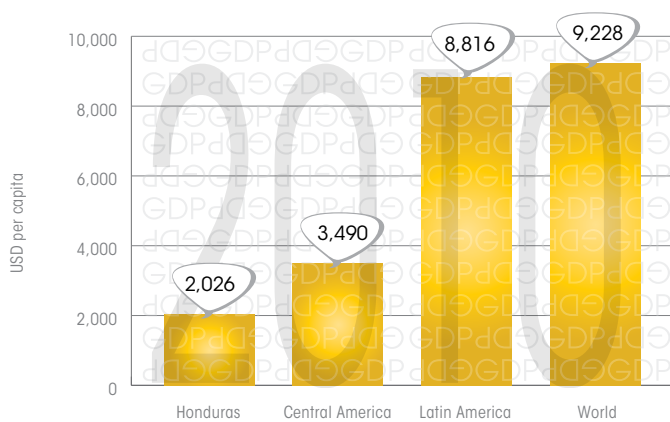
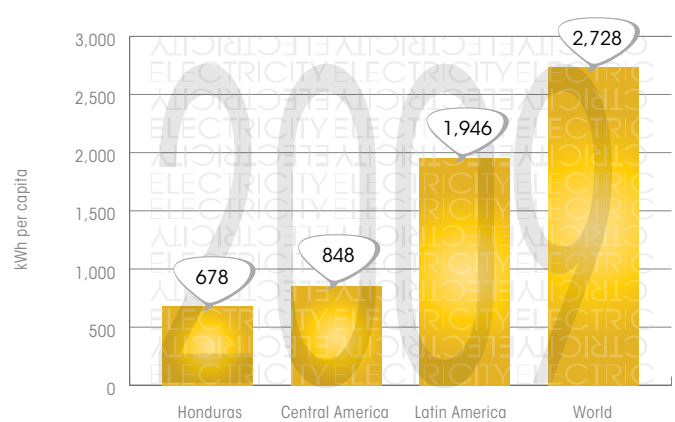


FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2009



Central America includes Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama. Latin America includes Argentina, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Guyana, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Suriname, Uruguay and Venezuela.

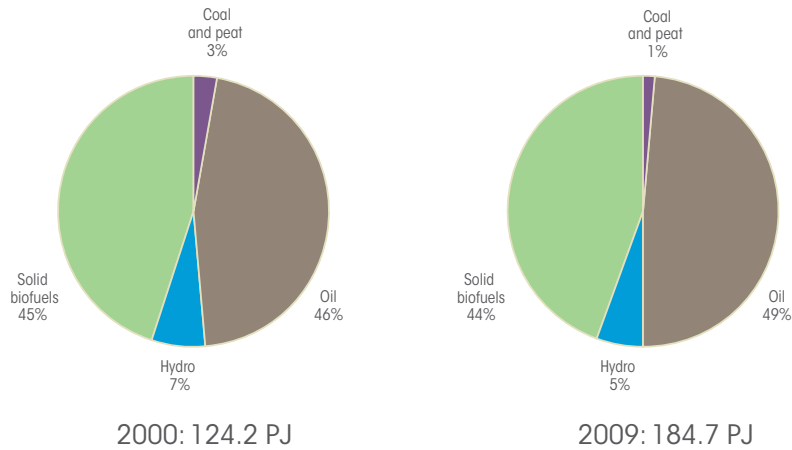
ENERGY NATIONAL PROFILE 2009

- Total Primary Energy Supply: 184.5 PJ - Of which renewables: 91.9 PJ (49.8%)
- Energy self-sufficiency: 49.8%
- Fuel imports: 1.5 billion USD (17.6% of total imports)
- Electricity generation: 6.6 TWh - Of which renewables: 2,965 GWh (45.1%)
- Electricity use per capita: 678 kWh
- Electrical capacity: 1,697 MW - Of which renewables: 613 MW (36.1%)
- Electricity access rate: 70.3%
- Share of population using solid fuels: 57%

TARGETS:

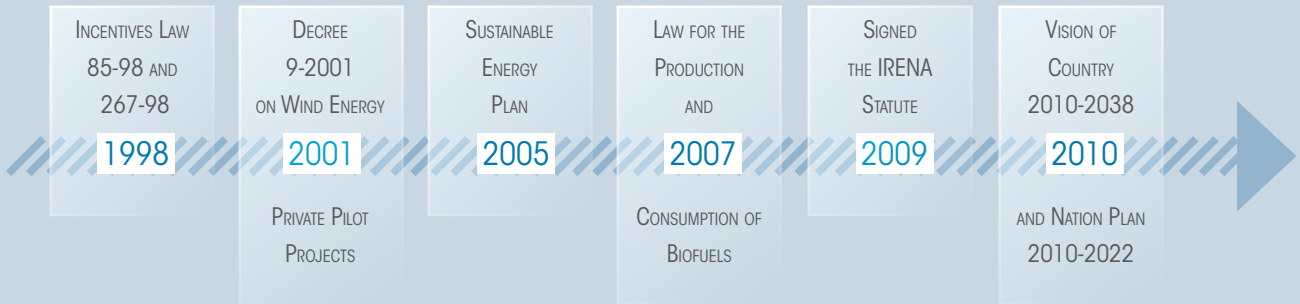
- 40% of electricity generation from renewables by 2013
- 50% of electricity generation from renewables by 2017
- 60% of electricity generation from renewables by 2022

FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2009



*excluding electricity trade

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



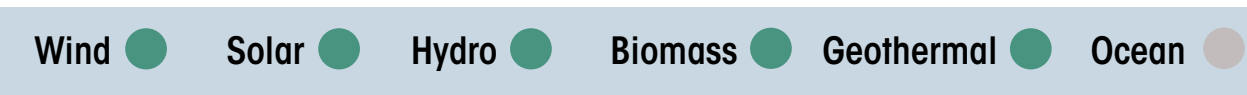
WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2012: Ranked 128 out of 183

RENEWABLE ENERGY PROJECTS FROM THE GOVERNMENT AND PRIVATE SECTORS:

- 33 MW and 25 MW_{th} of biomass-fired capacity addition announced (8 projects)
- 67 MW of small hydro capacity addition announced (5 projects)
- 18.5 MW of solar photovoltaic capacity addition announced (1 project)
- 100 MW of wind capacity addition announced (1 project)

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: 16

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 prejudice 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 UN data; Share of fuel imports in total imports: World Trade Organisation; Electrical capacity: IEA, EIA; Electricity access rate: World Energy Outlook 2011 database (IEA); Share of population using solid fuels: World Health Organisation; Targets: REN21, IRENA; Policy/legislation: IEA, Reegle, 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=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.

MEXICO



113.4 million Population (2010)
1,034.8 billion USD GDP (2010)
9,123 USD GDP per capita (2010)

FIGURE 1: GDP PER CAPITA FOR 2010

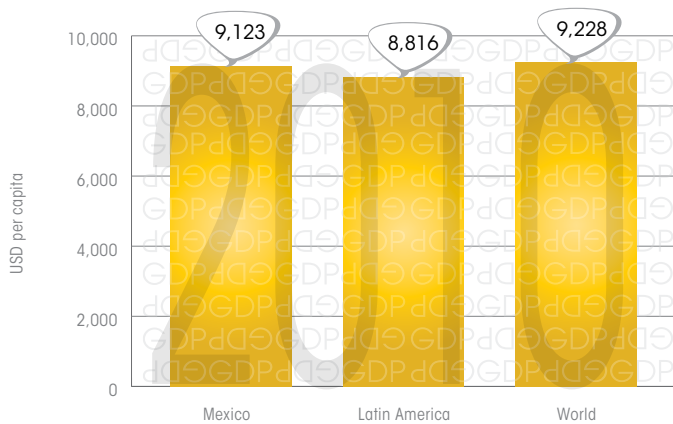
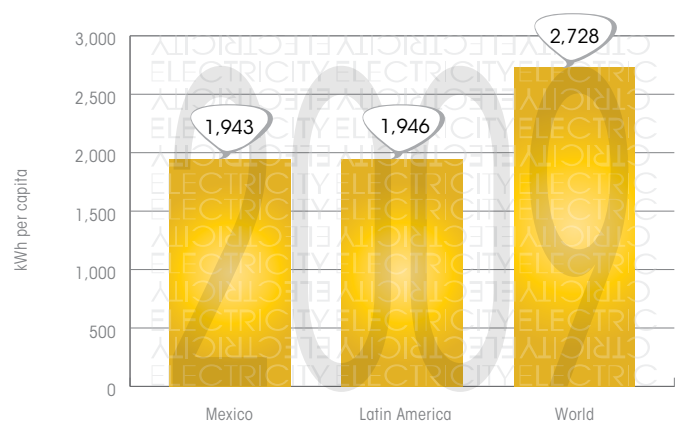


FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2009



Latin America includes Argentina, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Guyana, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Suriname, Uruguay and Venezuela.

ENERGY NATIONAL PROFILE 2009

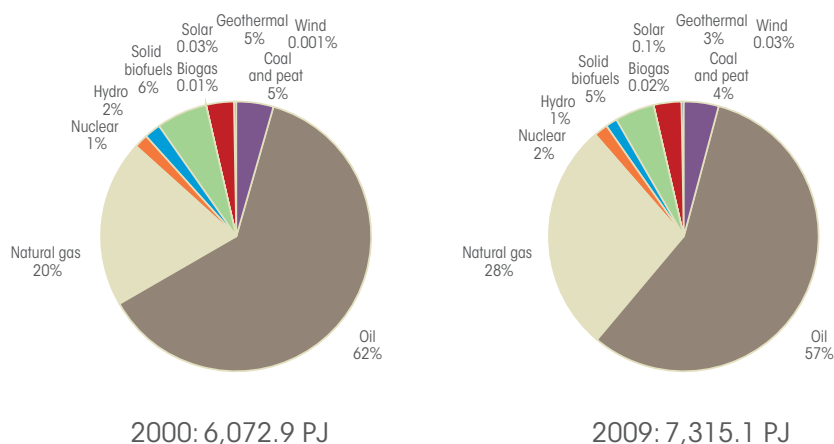
- Total Primary Energy Supply: 7,311.8 PJ - Of which renewables: 698.7 PJ (9.6%)
- Energy self-sufficiency: 126.0%
- Fuel imports: 24.0 billion USD (7.7% of total imports)
- Electricity generation: 261.0 TWh - Of which renewables: 36.8 TWh (14.1%)
- Electricity use per capita: 1,943 kWh
- Electrical capacity: 59.3 GW - Of which renewables: 13.5 GW (22.7%)
- Electricity access rate: Not available
- Share of population using solid fuels: 15%

TARGETS:

- 25% of electricity generation from renewables by 2012
- 7.6% of renewable capacity by 2012: wind (4.34%), small hydro (0.77%), geothermal (1.65%), biogas/biomass (0.85%)
- 34% of clean energy capacity by 2024

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FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2009



*excluding electricity trade

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



WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2012: Ranked 53 out of 183

RENEWABLE ENERGY PROJECTS FROM THE GOVERNMENT AND PRIVATE SECTORS (CAPACITY ADDITIONS):

- 25 MW of geothermal by the end of 2012; 250 MW announced (5 projects)
- 1,165 MW of wind by the end of 2013 (7 projects); more than 2,500 MW announced (25 projects)
- 12.8 million litres of biodiesel per year capacity addition announced (2 projects)
- More than 340 MW of biomass-fired announced (66 projects)
- 63 MW of small hydro announced (4 projects)
- Around 300 MW of solar photovoltaic announced (9 projects)
- 52 MW of solar thermal announced (2 projects)

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: 28

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 prejudice 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 (1GWh = 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.

NICARAGUA



5.8 million Population (2010)
6.6 billion USD GDP (2010)
1,132 USD GDP per capita (2010)

FIGURE 1: GDP PER CAPITA FOR 2010

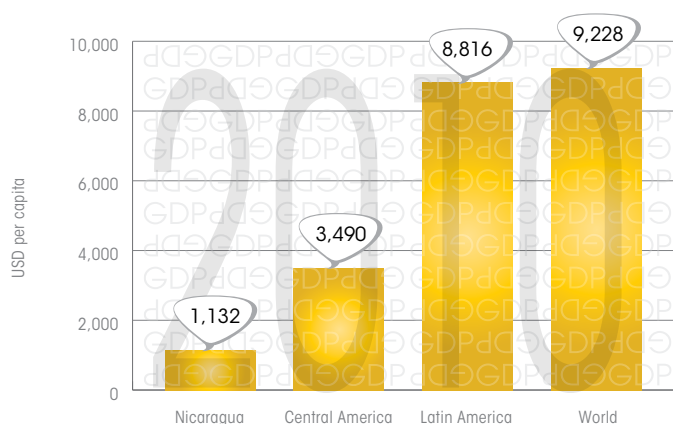
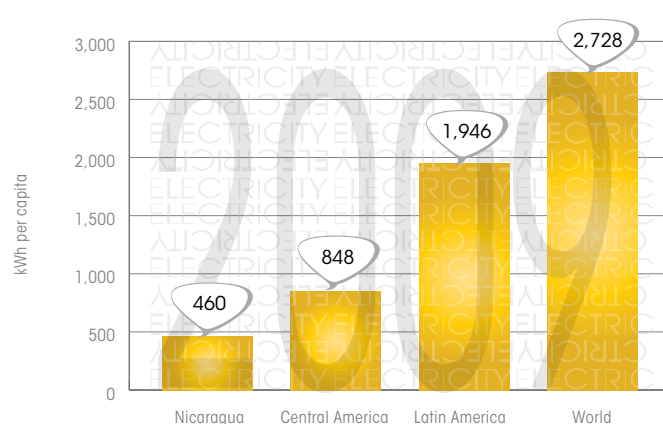


FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2009



Central America includes Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama. Latin America includes Argentina, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Guyana, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Suriname, Uruguay and Venezuela.

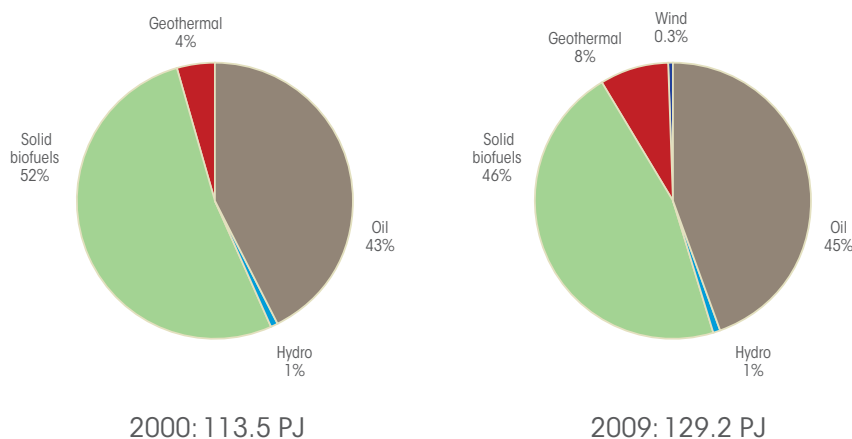
ENERGY NATIONAL PROFILE 2009

- Total Primary Energy Supply: 129.2 PJ - Of which renewables: 71.5 PJ (55.3%)
- Energy self-sufficiency: 55.3%
- Fuel imports: 909 million USD (21.8% of total imports)
- Electricity generation: 3,453 GWh - Of which renewables: 1,067 GWh (30.9%)
- Electricity use per capita: 460 kWh
- Electrical capacity: 1,104 MW - Of which renewables: 355 MW (32.2%)
- Electricity access rate: 72.1%
- Share of population using solid fuels: 56%

TARGETS:

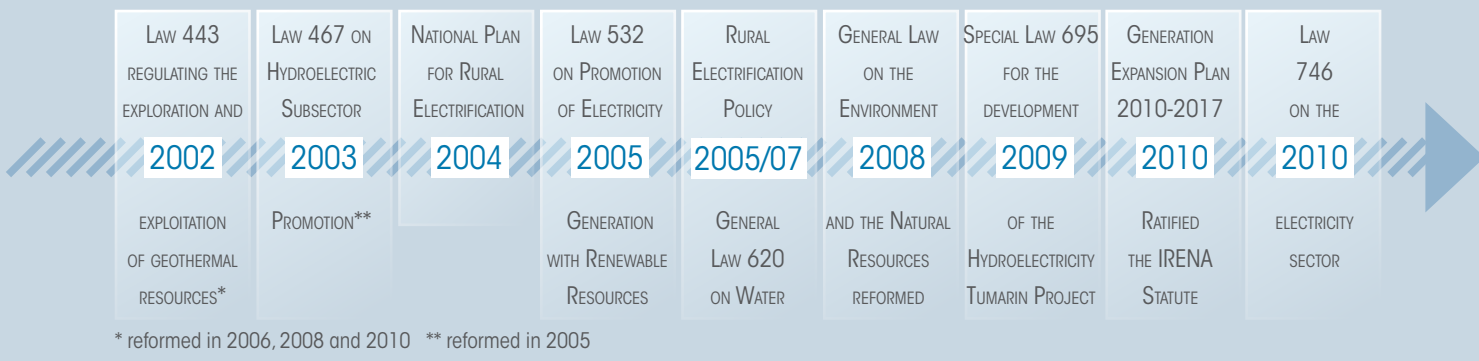
- 50.8% of electricity generation from renewables by 2013
- 72.6% of electricity generation from renewables by 2017

FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2009



*excluding electricity trade

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



WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2012: Ranked 118 out of 183

RENEWABLE ENERGY PROJECTS FROM THE GOVERNMENT AND PRIVATE SECTORS – NEW ADDITIONS UP TO 2017*:

- 117.1 MW of wind capacity (3 projects)
- 36 MW of geothermal capacity (1 project)
- 287.2 MW of hydro capacity (4 projects)

* These projects correspond to the Electricity Generation Expansion Plan - Scenario "A" until 2017. Other scenarios consider different sets of projects.

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: 4

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 prejudge 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 (1GWh = 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.

PANAMA



3.5 million Population (2010)
26.7 billion USD GDP (2010)
7,589 USD GDP per capita (2010)

FIGURE 1: GDP PER CAPITA FOR 2010

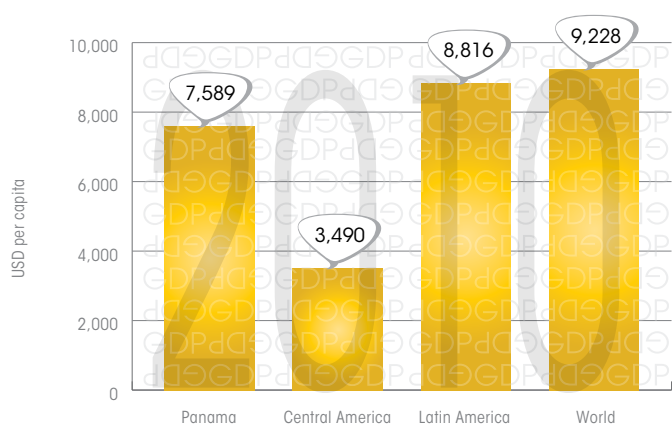
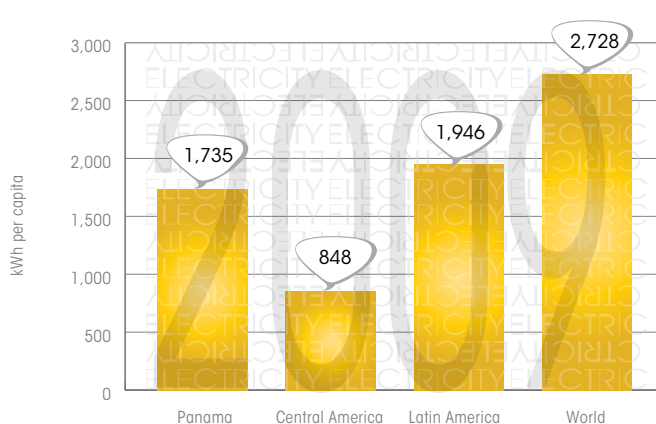


FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2009



Central America includes Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama. Latin America includes Argentina, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Guyana, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Suriname, Uruguay and Venezuela.

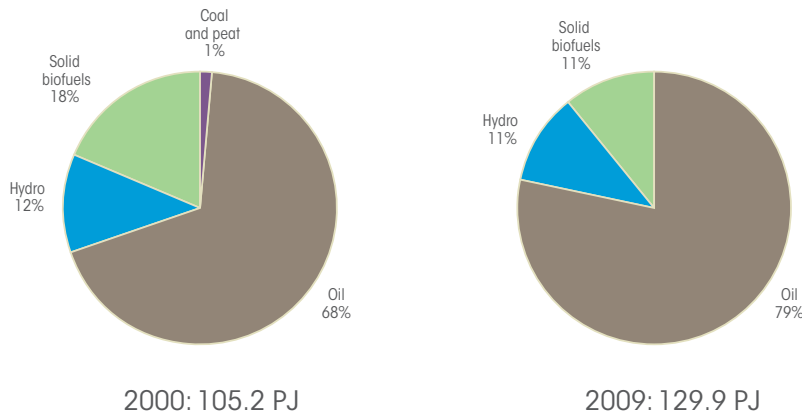
ENERGY NATIONAL PROFILE 2009

- Total Primary Energy Supply: 129.8 PJ - Of which renewables: 27.9 PJ (21.5%)
- Energy self-sufficiency: 21.5%
- Fuel imports: 1.7 billion USD (18.5% of total imports)
- Electricity generation: 6.9 TWh - Of which renewables: 3,916 GWh (56.4%)
- Electricity use per capita: 1,735 kWh
- Electrical capacity: 1,818.7 MW - Of which renewables: 878.9 MW (48.3%)
- Electricity access rate: 88.1%
- Share of population using solid fuels: 16%

TARGETS:

- Bioethanol blending mandate of 2/5/7/10% by 2013/14/15/16

FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2009



*excluding electricity trade

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



WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2012: Ranked 61 out of 183

RENEWABLE ENERGY PROJECTS FROM THE GOVERNMENT AND PRIVATE SECTORS:

- 195 MW of small hydro capacity by the end of 2013 (5 projects) and 159 MW announced (9 projects)
- 2.4 MW of solar photovoltaic capacity addition by mid 2012 (1 project)
- 100 MW of wind capacity addition by mid 2013 (2 projects) and 2,135 MW announced (18 projects)
- 7 MW of biomass-fired capacity addition announced (2 projects)

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: 8

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 (1GWh = 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.

PARAGUAY



6.5 million Population (2010)
18.3 billion USD GDP (2010)
2,840 USD GDP per capita (2010)

FIGURE 1: GDP PER CAPITA FOR 2010

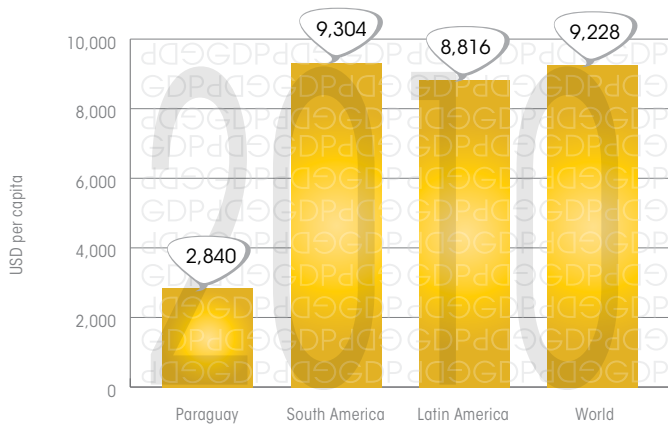
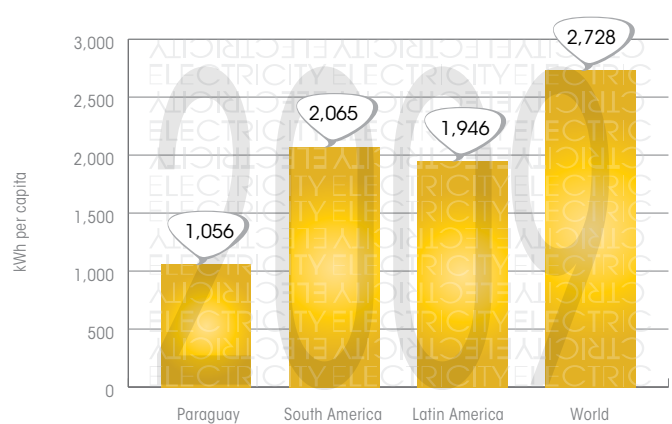


FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2009



South America includes Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Guyana, Paraguay, Peru, Suriname, Uruguay and Venezuela. Latin America includes Argentina, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Guyana, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Suriname, Uruguay and Venezuela.

ENERGY NATIONAL PROFILE 2009

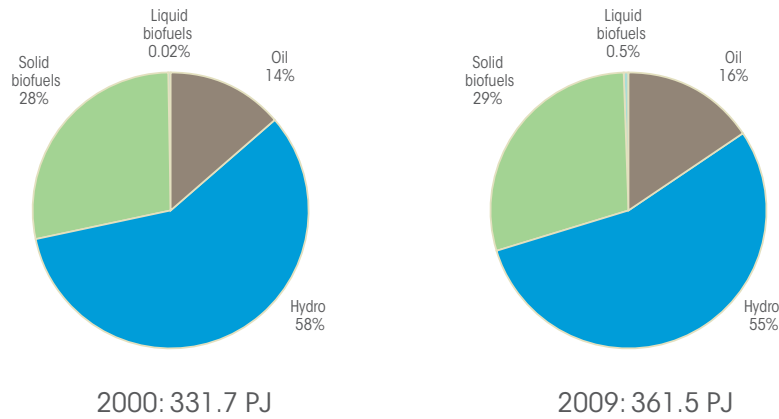
- Total Primary Energy Supply: 199.0 PJ - Of which renewables: 304.7 PJ (153.1%)*
- Energy self-sufficiency: 156.5%
- Fuel imports: 1.2 billion USD (11.9% of total imports)
- Electricity generation: 55.0 TWh - Of which renewables: 55.0 TWh (100.0%)
- Electricity use per capita: 1,056 kWh
- Electrical capacity: 8.8 GW - Of which renewables: 8.8 GW (99.9%)
- Electricity access rate: 96.7%
- Share of population using solid fuels: 52%

*This share includes the electricity produced from hydro that is exported.

TARGETS:

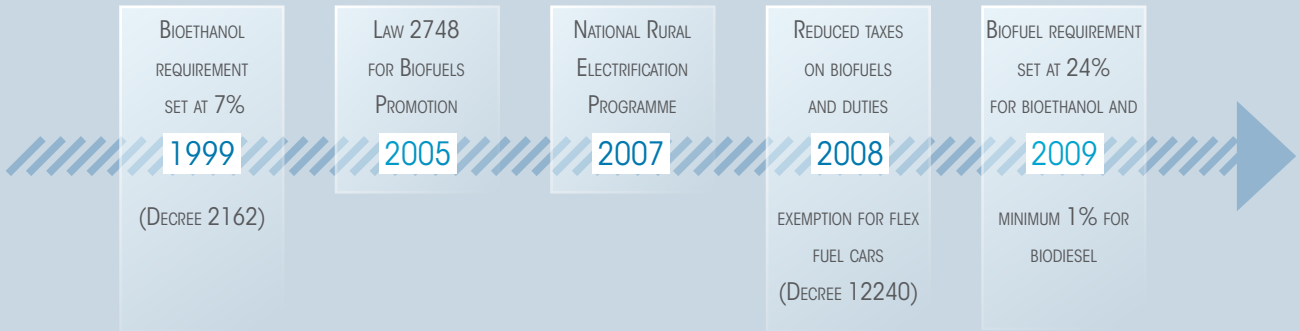
- No information available

FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2009



*excluding electricity trade

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



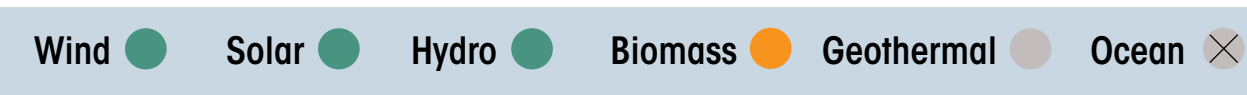
WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2012: Ranked 102 out of 183

RENEWABLE ENERGY PROJECTS FROM THE GOVERNMENT AND PRIVATE SECTORS:

- 298 million litres of biodiesel per year capacity addition announced (3 projects)

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: 0

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.

PERU



29.1 million Population (2010)
157.1 billion USD GDP (2010)
5,401USD GDP per capita (2010)

FIGURE 1: GDP PER CAPITA FOR 2010

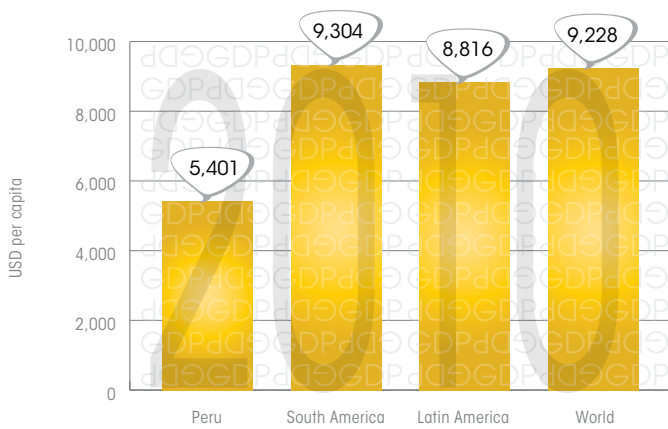
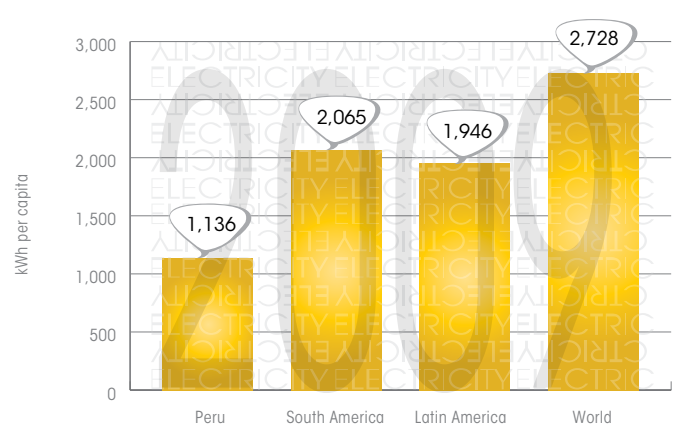


FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2009



South America includes Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Guyana, Paraguay, Peru, Suriname, Uruguay and Venezuela. Latin America includes Argentina, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Guyana, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Suriname, Uruguay and Venezuela.

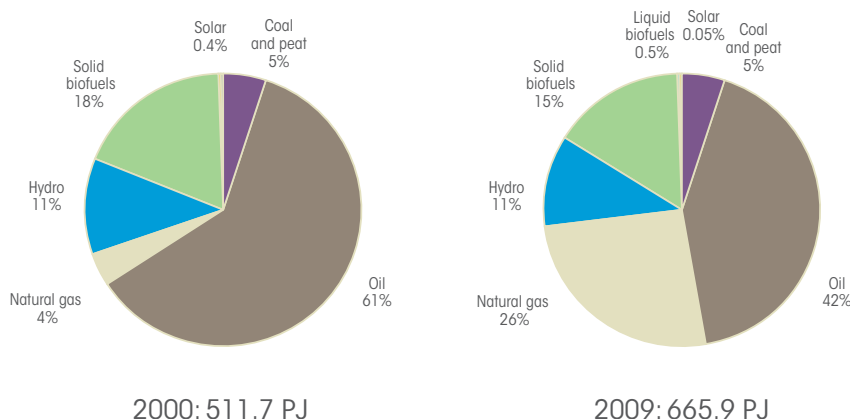
ENERGY NATIONAL PROFILE 2009

- Total Primary Energy Supply: 665.9 PJ - Of which renewables: 178.9 PJ (26.9%)
- Energy self-sufficiency: 95.7%
- Fuel imports: 4.2 billion USD (14.1% of total imports)
- Electricity generation: 35.4 TWh - Of which renewables: 20.9 TWh (59.0%)
- Electricity use per capita: 1,136 kWh
- Electrical capacity: 8.0 GW - Of which renewables: 3,274 MW (41.0%)
- Electricity access rate: 85.7%
- Share of population using solid fuels: 36%

TARGETS:

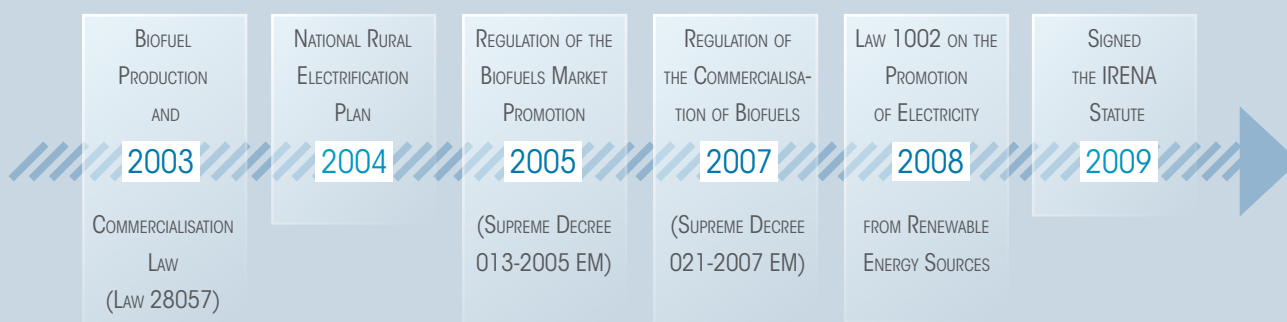
- No information available

FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2009



*excluding electricity trade

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



WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2012: Ranked 41 out of 183

RENEWABLE ENERGY PROJECTS FROM THE GOVERNMENT AND PRIVATE SECTORS:

- 113 MW of small hydro capacity addition by the end of 2014 (10 projects) and 356 MW announced (21 projects)
- 244 MW of wind capacity addition by the end of 2012 (6 projects) and 8,620 MW announced (62 projects)
- 283 million litres of bioethanol per year capacity addition announced (3 projects)
- 3.5 MW of biomass-fired capacity addition announced (2 projects)
- 100 MW of solar photovoltaic capacity addition announced (5 projects)

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: 20

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 (1GWh = 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.

SURINAME



525,000 Population (2010)
3.7 billion USD GDP (2010)
7,018 USD GDP per capita (2010)

FIGURE 1: GDP PER CAPITA FOR 2010

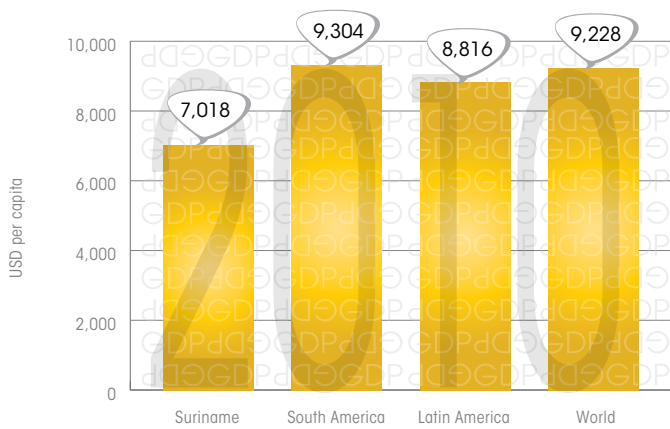
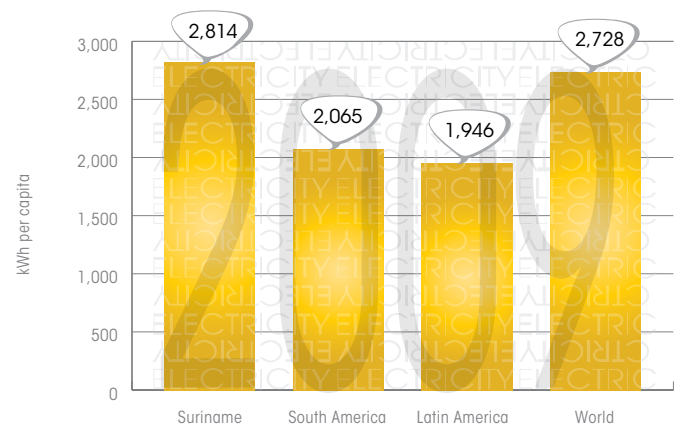


FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2009



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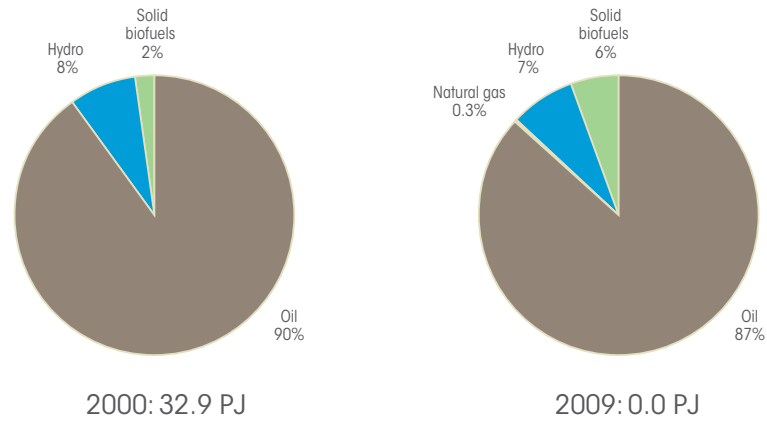
ENERGY NATIONAL PROFILE 2009

- Total Primary Energy Supply: 41.8 PJ - Of which renewables: 5.4 PJ (12.9%)
- Energy self-sufficiency: 86.4%
- Fuel imports: 264 million USD (18.3% of total imports)
- Electricity generation: 1,618 GWh - Of which renewables: 857.4 GWh (53.0%)
- Electricity use per capita: 2,814 kWh
- Electrical capacity: 389 MW - Of which renewables: 189 MW (48.6%)
- Electricity access rate: Not available
- Share of population using solid fuels: Not available

TARGETS:

- No information available

FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2009



*excluding electricity trade

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



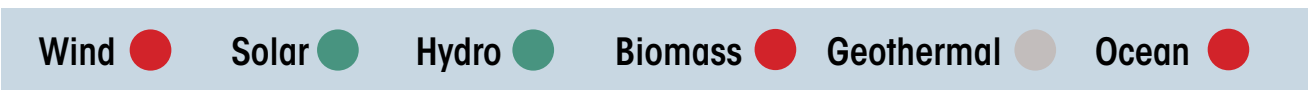
WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2012: Ranked 158 out of 183

RENEWABLE ENERGY PROJECTS FROM THE GOVERNMENT AND PRIVATE SECTORS:

- No information available

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: 0

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 prejudice 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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URUGUAY



3.4 million Population (2010)
40.3 billion USD GDP (2010)
11,996 USD GDP per capita (2010)

FIGURE 1: GDP PER CAPITA FOR 2010

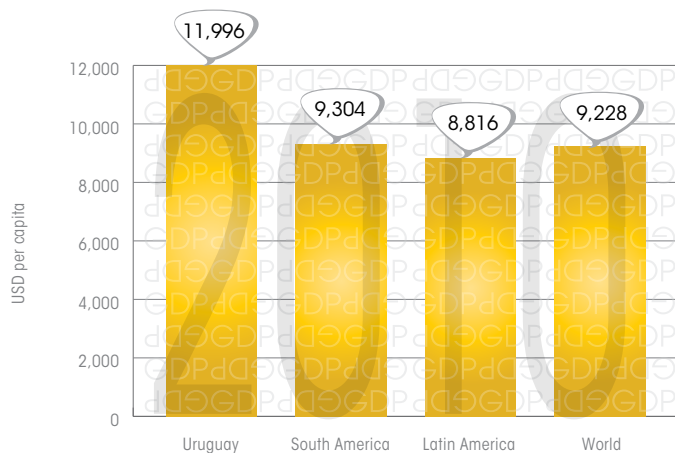
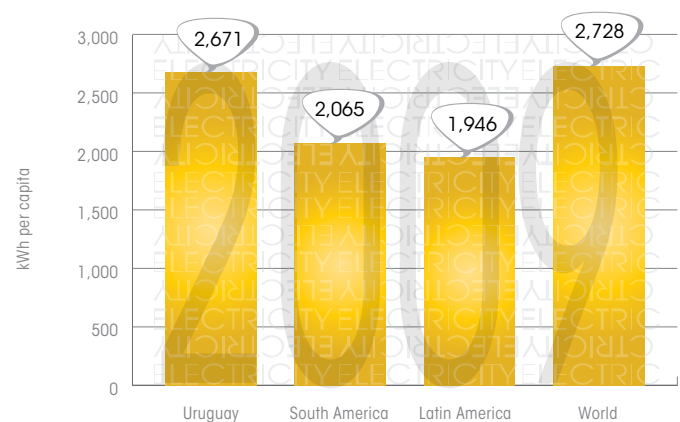


FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2009



South America includes Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Guyana, Paraguay, Peru, Suriname, Uruguay and Venezuela. Latin America includes Argentina, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Guyana, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Suriname, Uruguay and Venezuela.

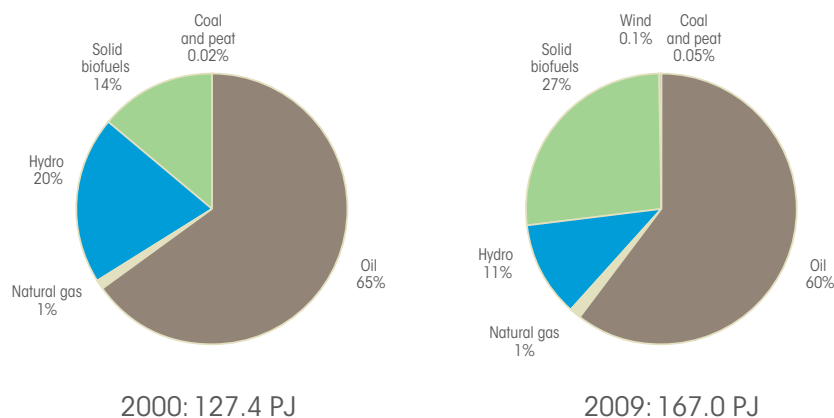
ENERGY NATIONAL PROFILE 2009

- Total Primary Energy Supply: 171.4 PJ - Of which renewables: 63.7 PJ (37.1%)
- Energy self-sufficiency: 37.1%
- Fuel imports: 1.6 billion USD (19.1% of total imports)
- Electricity generation: 8.9 TWh - Of which renewables: 6.1 TWh (68.7%)
- Electricity use per capita: 2,671 kWh
- Electrical capacity: 2,620 MW - Of which renewables: 1,743.8 MW (66.6%)
- Electricity access rate: 98.3%
- Share of population using solid fuels: < 5%

TARGETS:

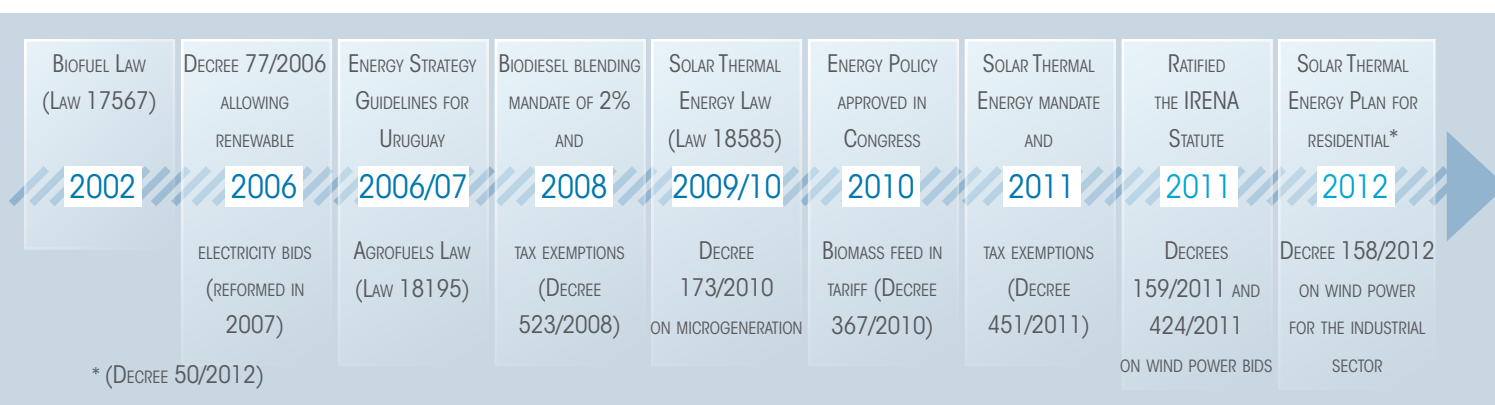
- Bioethanol blending mandate of 5% in 2015
- 500 MW of renewable capacity by 2015

FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2009



* excluding electricity trade

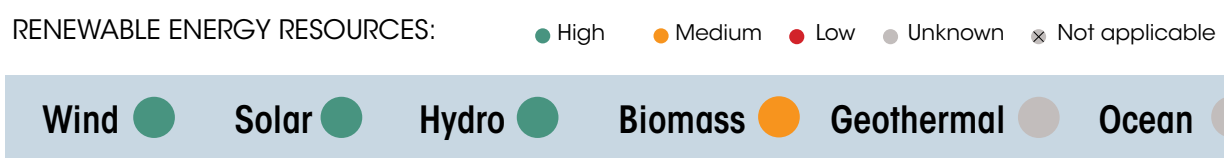
POLICIES IN PLACE TO PROMOTE RENEWABLE ENERGY SINCE THE RIO CONFERENCE OF 1992



WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2012: Ranked 90 out of 183

- RENEWABLE ENERGY PROJECTS FROM THE GOVERNMENT AND PRIVATE SECTORS (CAPACITY ADDITIONS):
- 70 million litres of bioethanol per year and 8 MW of biomass-fired by the end of 2012 (1 project)
 - 50 million litres of biodiesel per year by the end of 2013 (1 projects)
 - 200 MW of biomass-fired by mid 2013 (3 projects)
 - 400 MW of wind by mid 2014 (6 projects) and 800 MW announced (15 projects)
 - 5 MW of small hydropower by 2015 (3 projects)
 - 1MW MW of solar photovoltaic announced (2 projects)

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



Note: The information on resources should be taken as an indication only. It refers to a general trend of available resources, and does not prejudice 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 UN data; Share of fuel imports in total imports: World Trade Organisation; Electrical capacity: IEA, EIA; Electricity access rate: World Energy Outlook 2011 database (IEA); Share of population using solid fuels: World Health Organisation; Targets: REN21, IRENA; Policy/legislation: IEA, Reegle, 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 (1GWh = 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.

VENEZUELA



28.8 million Population (2010)
391.8 billion USD GDP (2010)
13,590 USD GDP per capita (2010)

FIGURE 1: GDP PER CAPITA FOR 2010

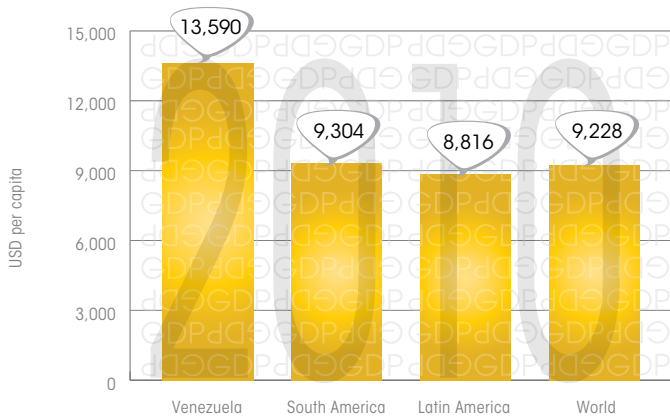
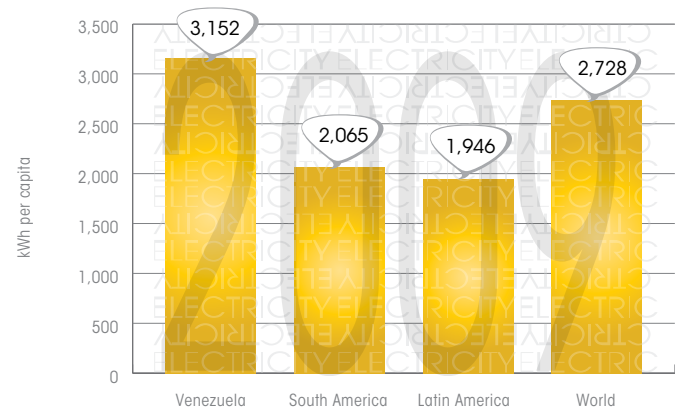


FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2009



South America includes Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Guyana, Paraguay, Peru, Suriname, Uruguay and Venezuela. Latin America includes Argentina, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Guyana, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Suriname, Uruguay and Venezuela.

ENERGY NATIONAL PROFILE 2009

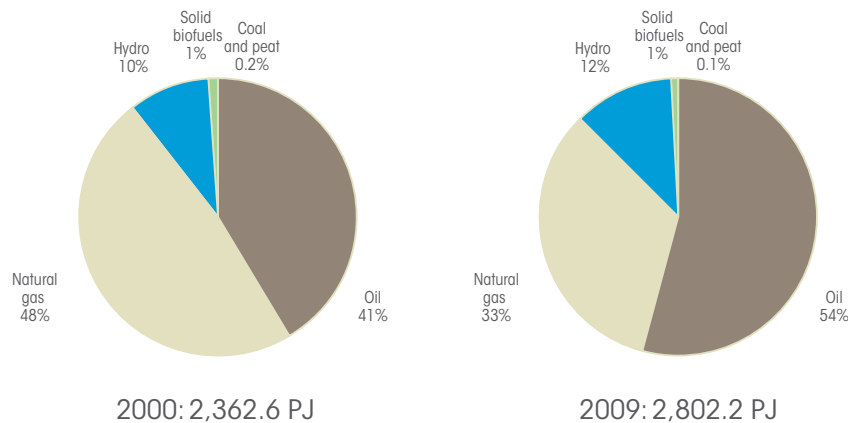
- Total Primary Energy Supply: 2,800.9 PJ - Of which renewables: 346.2 PJ (12.4%)
- Energy self-sufficiency: 304.2%
- Fuel imports: 289 million USD (0.7% of total imports)
- Electricity generation: 123.4 TWh - Of which renewables: 89.9 TWh (72.8%)
- Electricity use per capita: 3,152 kWh
- Electrical capacity: 24.8 GW - Of which renewables: 14.6 GW (58.9%)
- Electricity access rate: 99.0%
- Share of population using solid fuels: Not available

TARGETS:

- No information available

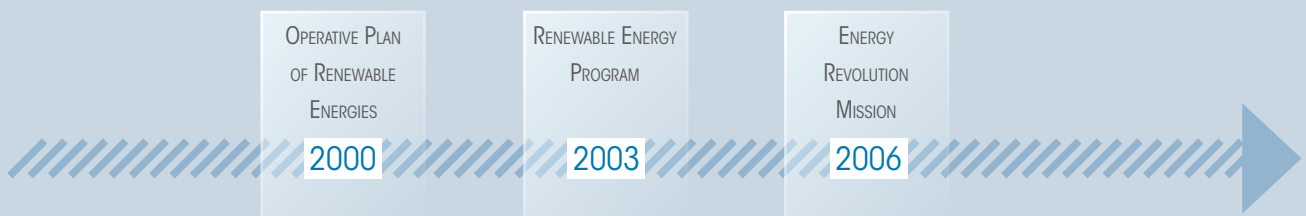
This Country Profile may contain advice, opinions and statements ("information") of various information providers. The International Renewable Energy Agency does not represent or endorse the accuracy or reliability of any advice, opinion, statement or other information provided by any information provider or any other person or entity. Reliance upon any such information shall be at the user's own risk. Neither the International Renewable Energy Agency, nor any of their respective agents, employees, information providers or content providers, shall be liable to any user or anyone else for any inaccuracy, error, omission, interruption, deletion, defect, alteration or use of any content herein, or for its timeliness or completeness, nor shall they be liable for any failure of performance, regardless of cause, or for any damages resulting therefrom. The information contained herein does not necessarily represent the views of the Members of the International Renewable Energy Agency. The designations employed and the presentation of materials herein do not imply the expression of any opinion whatsoever on the part of the Secretariat of the International Renewable Energy Agency concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. The term "country" as used in this material also refers, as appropriate, to territories or areas.

FIGURE 3: TOTAL PRIMARY ENERGY SUPPLY* IN 2000 AND 2009



* excluding electricity trade

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



WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2012: Ranked 177 out of 183

RENEWABLE ENERGY PROJECTS FROM THE GOVERNMENT AND PRIVATE SECTORS:

- 520 million litres of bioethanol per year capacity addition by the end of 2012 (4 projects)
- 13 million litres of bioethanol per year capacity addition announced (2 projects)
- 212 MW of wind capacity addition announced (5 projects)

NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: 0

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 prejudice 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 UN data; Share of fuel imports in total imports: World Trade Organisation; Electrical capacity: IEA, EIA; Electricity access rate: World Energy Outlook 2011 database (IEA); Share of population using solid fuels: World Health Organisation; Targets: REN21, IRENA; Policy/legislation: IEA, Reegle, 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 (1GWh = 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					



IRENA Secretariat
C67 Office Building, Khalidiyah (32nd) Street
P.O. Box 236, Abu Dhabi,
United Arab Emirates
www.irena.org

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