

RENEWABLE ENERGY COUNTRY PROFILES Middle East

November 2012 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 2009 until 2012, 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.

RENEWABLE ENERGY COUNTRY PROFILE

BAHRAIN



1.3 million Population (2010) 22.9 billion USD GDP (2010) 18,184 USD GDP per capita (2010)

FIGURE 1: GDP PER CAPITA FOR 2010

FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2009



The Middle East includes Bahrain, the Islamic Republic of Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, the Syrian Arab Republic, the United Arab Emirates and Yemen.

ENERGY NATIONAL PROFILE 2009

- Total Primary Energy Supply: 396.5 PJ Of which renewables: 0.0 PJ (0.0%)
- Energy self-sufficiency: 185.3%
- Fuel imports*: 224 million USD (2.2% of total imports)
- Electricity generation: 12.1 TWh Of which renewables: 0.0 GWh (0.0%)
- Electricity use per capita: 9,217 kWh
- Electrical capacity: 3,168 MW Of which renewables: 1 MW (0.0%)
- Electricity access rate: 99.4%
- Share of population using solid fuels: < 5%
- * 2010

TARGETS:

• No information available

This Country Profile may contain advice, opinions and statements (Information³) of various information providers. The International Renewable Energy Agency does not represent or endorse the occuracy or reliability of any advice, opinion, statement or other area or associated by any information providers are may use information information providers. The International Renewable Energy Agency does not represent or endorse the occuracy or reliability of any advice, opinion, statement or other area or any endores from a more advice. Depinion statement or other providers area or any such information ball be at the user's own risk. Networks the full belief for any failure of performance, regardless of cause, or for any damages resulting therefrom. The information contained herein dees not necessarily represent the views of the Manbers of the International Renewable Energy Agency does not represent or any failure of any failure of any damages resulting therefrom. The information contained herein does not necessarily represent the views of any openion whatsbeere on the International Renewable Energy Agency concerning the legal status of onary failure of any damages resulting of the Secretarial of the International Renewable Energy Agency concerning the legal status and in this material data refers. Sapproprinte, to terminolise, to terminolise or any administence on the scenaria of any opinion whatsbeere on the support of the Secretarial of the International Renewable Energy Agency concerning the legal status and the scenaria of any opinion whatsbeere on the support of the International Renewable Energy Agency concerning the legal status and the scenaria of any opinion whatsbeere on the support of the International Renewable Energy Agency concerning the legal status and the scenaria of any opinion whatsbeere on the support of the International Renewable Energy Agen

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



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



IIIIIIIIIIIIWORLD BANK EASE OF DOING BUSINESS INDEX FOR 2012: Ranked 38 out of 183

RENEWABLE ENERGY PROJECTS FROM THE GOVERNMENT AND PRIVATE SECTORS:

- 25 MW of waste-to-energy capacity addition announced (1 project)



Note: The information on resources should be taken as an indication only. It refers to a general frend 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, ElA; 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=10° kWh); TWh: terawatt-hour (1 TWh=10° GWh); PJ: petajoule; MW: megawatt; GW: gigawatt (1 GW=10° MW). Please also refer to the glossary for explanations on the terms used in the country profile.

RENEWABLE ENERGY COUNTRY PROFILE

ISLAMIC -REPUBLIC OF IRAN

74.0 million Population (2010) 363.2 billion USD GDP (2010) 4,909 USD GDP per capita (2010)

FIGURE 1: GDP PER CAPITA FOR 2010

FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2009



The Middle East includes Bahrain, the Islamic Republic of Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, the Syrian Arab Republic, the United Arab Emirates and Yemen.

ENERGY NATIONAL PROFILE 2009

- Total Primary Energy Supply: 8,913.1 PJ Of which renewables: 39.8 PJ (0.4%)
- Energy self-sufficiency: 160.4%
- Fuel imports*: 6.8 billion USD (10.5% of total imports)
- Electricity generation: 221.4 TWh Of which renewables: 7.5 TWh (3.4%)
- Electricity use per capita: 2,499 kWh
- Electrical capacity: 56.2 GW Of which renewables: 7.8 GW (13.9%)
- Electricity access rate: 98.4%
- Share of population using solid fuels: < 5%
- * 2010

TARGETS:

• 1,500 MW of wind capacity by 2013

This Country Profile may contain advice, opinions and statements ("Information") of various information provides. The Information Pagency does not represent or endorse the occuracy or reliability of any advice, applicing, statement or other information provides. The Information Provides are any information and any appropriate are any information and the provides are any information and any appropriate are any information and any appropriate are any information and any appropriate are any information and any approprime are any information and any appropriate are any information





WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2012: Ranked 144 out of 183

IIIIII RENEWABLE ENERGY PROJECTS FROM THE GOVERNMENT AND PRIVATE SECTORS:

- No information available
- RENEWABLE ENERGY: 1



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 (1GWh=10⁶ kWh); TWh: terawatt-hour (1TWh=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.



FIGURE 1: GDP PER CAPITA FOR 2010

FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2009



The Middle East includes Bahrain, the Islamic Republic of Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, the Syrian Arab Republic, the United Arab Emirates and Yemen.

ENERGY NATIONAL PROFILE 2009

- Total Primary Energy Supply: 1,360.4 PJ Of which renewables: 12.7 PJ (0.9%)
- Energy self-sufficiency: 381.4%
- Fuel imports*: 629 million USD (1.5% of total imports)
- Electricity generation: 45.6 TWh Of which renewables: 3,227 GWh (7.1%)
- Electricity use per capita: 1,054 kWh
- Electrical capacity: 9.2 GW Of which renewables: 2,514 MW (27.2%)
- Electricity access rate: 86.0%
- Share of population using solid fuels: 5%
- * 2010

TARGETS:

• No information available

This Country Profile may contain advice. opinions and statements (Information ') dvalues information providers. The International Renewable Energy Agency does not represent or endors the occuracy or reliability of any advice, apliano, statement or other providers are on provider or any other person or endity. Beliance upon any such information provides that upon any incomation councy, error, omission, interruption, deletion, delet, alteration of a use of any content the international Renewable Energy Agency, nor any of their respective agents, employees, information providers or any later are anyone elles for any later accuracy, error, omission, interruption, deletion, delet, alteration of a use of any content the internation Renewable Energy Agency, nor any of their respective agents, employees, information providers or another providers, and no providers or any later accuracy, error, omission, interruption, deletion, delet, alteration of a use of any content providers, error on the providers or content providers, and no excussed energy Agency, nor any of their respective agents of any plane of providers or content providers, and no providers or any later advice agents of any later accuracy error, origination, alternation and Renewable Energy Agency, nor any of their respective agents of any plane of any domises or the terrational Renewable Energy Agency and the presentation of materials herein do not imply the expression of any gain or whotsever on the part of the Secretarial of the International Renewable Energy Agency concerning the legislatius of any continue or their or a result of any domines or their material and their and the secretarial of any domines or a provider or any energy agency, and any other accuracy error, ending and ending and the secretarial of the International Renewable Energy Agency concerning the legislatius of any contract ending and their and concerning the delines or boundaries. The term "contry" or sub error of a concerning the delines or concerning the delines or concerning the de



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



RENEWABLE ENERGY PROJECTS FROM THE GOVERNMENT AND PRIVATE SECTORS:

- Electrification of 15 remote locations by hybrid wind/solar generating stations with a combined capacity of 50 MW



Sources: Population and GDP: World Bank; Energy data: IEA, IRENA analysis based on UN data; Share of tuel imports in total imports: World Trade Organisation; Electrical capacity: IEA, ElA; 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=10° kWh); TWh: terawatt-hour (1TWh=10° GWh); PJ: petajoule; MW: megawatt; GW: gigawatt (1 GW=10° MW).Please also refer to the glossary for explanations on the terms used in the country profile.

RENEWABLE ENERGY COUNTRY PROFILE

ISRAEL



7.6 million Population (2010) 217.4 billion USD GDP (2010) 28,519 USD GDP per capita (2010)

FIGURE 1: GDP PER CAPITA FOR 2010

FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2009



The Middle East includes Bahrain, the Islamic Republic of Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, the Syrian Arab Republic, the United Arab Emirates and Yemen.

ENERGY NATIONAL PROFILE 2009

- Total Primary Energy Supply: 901.3 PJ Of which renewables: 44.9 PJ (5.0%)
- Energy self-sufficiency: 15.2%
- Fuel imports*: 10.4 billion USD (17.1% of total imports)
- Electricity generation: 55.0 TWh Of which renewables: 97.0 GWh (0.2%)
- Electricity use per capita: 6,607 kWh
- Electrical capacity: 12.1 GW Of which renewables: 40 MW (0.3%)
- Electricity access rate: 99.7%
- Share of population using solid fuels: < 5%
- * 2010

IIIII TARGETS:

- 50% of final energy from renewables by 2020
- 5% of electricity generation from renewables by 2014
- 10% of electricity generation from renewables by 2020

This Country Profile may contain advice. opinions and statements (Information³) of various information providers. The International Renewable Energy Agency does not represent or endorse the occuracy or reliability of any advice. opinion, statement or their information providers. The International Renewable Energy Agency does not represent or endorse the occuracy or reliability of any advice. opinion, statement or shall be the late areas on an isk. Network the the International Renewable Energy Agency does not represent or endorse the occuracy or reliability of any advice. opinion, statement or shall be their on any user or anyone else for any incorcuracy, error, omission, interruption, deletion, deletio



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

INCENTIVES FOR	STATE SUBSIDY	Feed-in tariff	Ratified	Feed-in tariff	
RENEWABLE	FOR ELECTRICITY	FOR	THE IRENA	FOR	
ELECTRICITY	GENERATION	SOLAR PV	STATUTE	solar PV	
2002	2004	2009	2010	2011	
GENERATION	FROM WIND AND	AND WIND		AND WIND	
(RESOLUTION	SOLAR PV	ELECTRICITY		ELECTRICITY	
2264)				REVISED	

WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2012: Ranked 34 out of 183

RENEWABLE ENERGY PROJECTS FROM THE GOVERNMENT AND PRIVATE SECTORS:

- 50 MW of wind capacity addition by the end of 2013 (1 project)
- About 440 MW of wind capacity addition announced (5 projects)
- About 200 MW of solar photovoltaic capacity addition by 2015 (7 projects)
- 157 MW of solar photovoltaic capacity addition announced (9 projects)
- 370 MW of solar thermal capacity addition announced (2 projects)
- More than 32 MW of biomass-fired capacity addition announced (16 projects)
- 60 MW of marine energy capacity addition announced (2 projects)

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

IIIII RENEWABLE ENERGY RESOURCES:		 High 	e Medium	e Low	Unknown	⊗ No	t applicable			
	Wind 🔵	Solar 🔵	Hydro		Biomass 🧲	Ge	othermal		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 (1GWh=10° kWh); TWh: terawatt-hour (1TWh=10° GWh); PJ: petajoule; MW: megawatt; GW: gigawatt (1 GW=10° 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

RENEWABLE ENERGY COUNTRY PROFILE

JORDAN



6.0 million Population (2010) 26.4 billion USD GDP (2010) 4,370 USD GDP per capita (2010)

FIGURE 1: GDP PER CAPITA FOR 2010

FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2009



The Middle East includes Bahrain, the Islamic Republic of Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, the Syrian Arab Republic, the United Arab Emirates and Yemen.

ENERGY NATIONAL PROFILE 2009

- Total Primary Energy Supply: 312.3 PJ Of which renewables: 5.5 PJ (1.8%)
- Energy self-sufficiency: 3.9%
- Fuel imports*: 3.4 billion USD (21.9% of total imports)
- Electricity generation: 14.3 TWh Of which renewables: 69.0 GWh (0.5%)
- Electricity use per capita: 2,112 kWh
- Electrical capacity: 2,320 MW Of which renewables: 69 MW (3.0%)
- Electricity access rate: 99.9%
- Share of population using solid fuels: < 5%
- * 2010

TARGETS:

- 7% of primary energy from renewables by 2015
- 10% of primary energy from renewables by 2020
- 600 MW of wind capacity by 2015 and 1,200 MW by 2020
- 300 MW of solar photovoltaic capacity by 2015 and 600 MW in 2020
- 30 to 50 MW of waste-to-energy capacity

This Country Profile may contain advice, opinions and statements (Information ') of various information providers. The International Renewable Energy Agency does not represent or endors the occuracy or reliability of any advice, opinion, statement or others shall be information any activity Profile may control advice, opinion statement or shall be of the user's own risk. Network the Information providers are shall be information and activity Profile may incorrect international Renewable Energy Agency does not represent or endors the control advice, opinion, statement or others shall be information and activity and the other the International Renewable Energy Agency does not represent or endors the activity endors and the other and the other and the other the International Renewable Energy Agency does not represent or endors the activity endors and the other and the other



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

*excluding electricity trade

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



WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2012: Ranked 96 out of 183

RENEWABLE ENERGY PROJECTS FROM THE GOVERNMENT AND PRIVATE SECTORS:

- 100 MW of solar photovoltaic addition by the end of 2013 (3 projects)
- 100 MW of wind capacity addition by the end of 2014 (1 project)
- 150 MW of solar thermal capacity addition announced (5 projects)
- 200 MW of solar photovoltaic capacity addition announced (10 projects)
- 400 MW of wind capacity addition announced (5 projects)

RENEWABLE ENERGY: 2



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 (1GWh=10° kWh); TWh: terawatt-hour (1TWh=10° GWh); PJ: petajoule; MW: megawatt; GW: gigawatt (1 GW=10° 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



FIGURE 1: GDP PER CAPITA FOR 2010

FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2009



The Middle East includes Bahrain, the Islamic Republic of Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, the Syrian Arab Republic, the United Arab Emirates and Yemen.

ENERGY NATIONAL PROFILE 2009

- Total Primary Energy Supply: 1,263.3 PJ Of which renewables: 0.0 PJ (0.0%)
- Energy self-sufficiency: 431.6%
- Fuel imports*: 271 million USD (1.2% of total imports)
- Electricity generation: 53.2 TWh Of which renewables: 0.0 GWh (0.0%)
- Electricity use per capita: 17,610 kWh
- Electrical capacity: 10.9 GW Of which renewables: 0 MW (0.0%)
- Electricity access rate: 100.0%
- Share of population using solid fuels: < 5%
- * 2010

TARGETS:

• 5% of electricity generation from renewables by 2020

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 occuracy or reliability of any advice, opinion, statement or their information providers. The International Renewable Energy Agency does not represent or endorse the occuracy or reliability of any advice, opinion, statement or their information providers are on yone test on mice. Neither the International Renewable Energy Agency does not represent or endorse the occuracy or or entity field or any advice, opinion, statement or other information providers are on yone elles for any inaccuracy, error, crimission, interruption, detellan, detect, alteration of ruse of any content herein, or for its limeliness or completeness, nor shall her y be liable for any failure of performance, regardless of cause, or for any damages resulting theretow. The information contained herein does not necessarily represent the views of the Members of the International Renewable Energy Agency does not represent or any opinion whatsever on the part of the Screttoriat of the International Renewable Energy Agency does not represent or any opinion whatsever on the part of the Screttoriat of the International Renewable Energy Agency does not represent or any opinion whatsever on the part of the Screttoriat of the International Renewable Energy Agency does not represent or any opinion whatsever on the part of the Screttoriat of the International Renewable Energy Agency does not represent or any opinion whatsever on the part of the Screttoriat of the International Renewable Energy Agency does not represent or any opinion whatsever on the part of the Screttoriat of the International Renewable Energy Agency does not represent or any opinion whatsever on the part of the Screttoriat of the International Renewable Energy Agency does not represent or any opinion whatsever on the part of the Screttoriat of the International Renewable Energy Agency does not repr



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

*excluding electricity trade

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



WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2012: Ranked 67 out of 183

RENEWABLE ENERGY PROJECTS FROM THE GOVERNMENT AND PRIVATE SECTORS:

- 70 MW of renewable capacity addition planned: solar photovoltaic (10 MW), concentrating solar power (50 MW), wind (10 MW)



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, Electricity access rate: World Energy Outlook 2011 database (IEA); Share of population using

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=10° kWh); TWh: terawatt-hour (1TWh=10° GWh); PJ: petajoule; MW: megawatt; GW: gigawatt (1 GW=10° MW).Please also refer to the glossary for explanations on the terms used in the country profile.

RENEWABLE ENERGY COUNTRY PROFILE

LEBANON



4,2 million Population (2010) 39.0 billion USD GDP (2010) 9,227 USD GDP per capita (2010)

FIGURE 1: GDP PER CAPITA FOR 2010

FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2009



The Middle East includes Bahrain, the Islamic Republic of Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, the Syrian Arab Republic, the United Arab Emirates and Yemen.

ENERGY NATIONAL PROFILE 2009

- Total Primary Energy Supply: 275.9 PJ Of which renewables: 8.1 PJ (2.9%)
- Energy self-sufficiency: 2.8%
- Fuel imports*: 4.4 billion USD (23.9% of total imports)
- Electricity generation: 13.8 TWh Of which renewables: 622.0 GWh (4.5%)
- Electricity use per capita: 3,131 kWh
- Electrical capacity: 2,314 MW Of which renewables: 280 MW (12.1%)
- Electricity access rate: 99.9%
- Share of population using solid fuels: < 5%
- * 2010

TARGETS:

• 12% of electric and thermal supply from renewables by 2020

This Countly Profile may contain advice, opinions and statements ("information") of various information providers. The International Renewable Energy Agency does not represent or endorse the occuracy or reliability of any advice, opinion, statement or other information providers. The International Renewable Energy Agency does not represent or endorse the occuracy or reliability of any advice, opinion, statement or other information providers. The International Renewable Energy Agency does not represent or endorse the occuracy or reliability of any advice, opinion, statement or other information providers. The International Renewable Energy Agency does not represent or endorse the occuracy or reliability of any advice, opinion, statement or other information providers are on provider and the respective agency, encry of this environmentation providers are on provider and the respective agency encoremation providers. Shall be liable for any inacccuracy, error, omission, interruption, deletion, defect, alteration of or use of any content herein or for its timelines or completeness, nor shall they be liable for any failure of performance, regardless of cause, or for any damages resulting therefrom. The designations employed and the seerable international Renewable Energy Agency concerning the legal status at any country, territory, city or area or of its authorities, or concerning the delimitation of its functions or boundaries. The term "country" as used in this material also refers, as opportaine, to terminations are reason.



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



WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2012: Ranked 104 out of 183

RENEWABLE ENERGY PROJECTS FROM THE GOVERNMENT AND PRIVATE SECTORS:

- No information available
- RENEWABLE ENERGY: 0



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 (1GWh=10° kWh); TWh: terawatt-hour (1TWh=10° GWh); PJ: petajoule; MW: megawatt; GW: gigawatt (1 GW=10° MW).Please also refer to the glossary for explanations on the terms used in the country profile.



FIGURE 1: GDP PER CAPITA FOR 2010

FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2009



The Middle East includes Bahrain, the Islamic Republic of Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, the Syrian Arab Republic, the United Arab Emirates and Yemen.

ENERGY NATIONAL PROFILE 2009

- Total Primary Energy Supply: 624.4 PJ Of which renewables: 0.0 PJ (0.0%)
- Energy self-sufficiency: 450.6%
- Fuel imports*: 1.2 billion USD (6.2% of total imports)
- Electricity generation: 17.8 TWh Of which renewables: 0.0 GWh (0.0%)
- Electricity use per capita: 5,340 kWh
- Electrical capacity: 4,202 MW Of which renewables: 0 MW (0.0%)
- Electricity access rate: 98.0%
- Share of population using solid fuels: < 5%
- * 2010

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 endors the accuracy or reliability of any advice, opinion, statement or other the information providers. The International Renewable Energy Agency does not represent or endors the accuracy or reliability of any advice, opinion, statement or other shall be liable to any information providers are units and the presentation and the respective agents, negroides and the respective agents, endorse, since si



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



WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2012: Ranked 49 out of 183

IIIIIIII RENEWABLE ENERGY PROJECTS FROM THE GOVERNMENT AND PRIVATE SECTORS:

- 100-200 MW of solar photovoltaic capacity addition announced (1 project)



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=10° kWh); TWh: terawatt-hour (1TWh=10° GWh); PJ: petajoule; MW: megawatt; GW: gigawatt (1 GW=10° MW).Please also refer to the glossary for explanations on the terms used in the country profile.



FIGURE 1: GDP PER CAPITA FOR 2010

FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2009



The Middle East includes Bahrain, the Islamic Republic of Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, the Syrian Arab Republic, the United Arab Emirates and Yemen.

ENERGY NATIONAL PROFILE 2009

- Total Primary Energy Supply: 978.4 PJ Of which renewables: 0.0 PJ (0.0%)
- Energy self-sufficiency: 612.4%
- Fuel imports*: 140 million USD (0.6% of total imports)
- Electricity generation: 24.8 TWh Of which renewables: 0.0 GWh (0.0%)
- Electricity use per capita: 14,420 kWh
- Electrical capacity: 3,893 MW Of which renewables: 0 MW (0.0%)
- Electricity access rate: 98.7%
- Share of population using solid fuels: < 5%
- * 2010

IIII TARGETS:

• No information available as of mid-November 2012

This Countly Profile may contain advice, opinions and statements ("information") of various information providers. The International Renewable Energy Agency does not represent or endorse the occuracy or reliability of any advice, opinion, statement or other service and endorse being advices. The service advices advic



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



WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2012: Ranked 36 out of 183

IIIIIIII RENEWABLE ENERGY PROJECTS FROM THE GOVERNMENT AND PRIVATE SECTORS:

- 100 MW of solar photovoltaic capacity addition to be implemented by 2014



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=10° kWh); TWh: terawatt-hour (1TWh=10° GWh); PJ: petajoule; MW: megawatt; GW: gigawatt (1 GW=10° 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



FIGURE 1: GDP PER CAPITA FOR 2010

FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2009



The Middle East includes Bahrain, the Islamic Republic of Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, the Syrian Arab Republic, the United Arab Emirates and Yemen.

ENERGY NATIONAL PROFILE 2009

- Total Primary Energy Supply: 6,609.1 PJ Of which renewables: 0.2 PJ (0.0%)
- Energy self-sufficiency: 334.7%
- Fuel imports*: 17 million USD (0.0% of total imports)
- Electricity generation: 217.1 TWh Of which renewables: 0.0 GWh (0.0%)
- Electricity use per capita: 7,427 kWh
- Electrical capacity: 44.5 GW Of which renewables: 0 MW (0.0%)
- Electricity access rate: 99.0%
- Share of population using solid fuels: < 5%
- * 2010

TARGETS:

• 54 GW of renewable capacity by 2032: solar photovoltaic (16 GW), concentrating solar power (25 GW), wind (9 GW), waste-to-energy (3 GW), geothermal (1 GW)

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 providers. The International Renewable Energy Agency does not represent or endorse the accuracy or reliability of any advice, opinion, statement or other information providers. The International Renewable Energy Agency does not represent or endorse the accuracy or reliability of any advice, opinion, statement or other information providers. The International Renewable Energy Agency does not represent or endorse the accuracy or ror without a statements on Energy Agency does not represent or endorse the accuracy area content providers. Shall be liable for any user or anyone else for any advice, opinion wintatoever on the part of the Sacretaria of the International Renewable Energy Agency does not represent on a county, ettation, bit or antion efforts or advice.



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



WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2012: Ranked 12 out of 183

RENEWABLE ENERGY PROJECTS FROM THE GOVERNMENT AND PRIVATE SECTORS:

- 10 MW of solar photovoltaic capacity addition announced (1 project)
- RENEWABLE ENERGY: 0



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=10° kWh); TWh: terawatt-hour (1TWh=10° GWh); PJ: petajoule; MW: megawatt; GW: gigawatt (1 GW=10° MW).Please also refer to the glossary for explanations on the terms used in the country profile.

RENEWABLE ENERGY COUNTRY PROFILE

SYRIAN ARAB REPUBLIC

20.4 million Population (2010) **59.1 billion USD** GDP (2010) **2,893 USD** GDP per capita (2010)

FIGURE 1: GDP PER CAPITA FOR 2010

FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2009



The Middle East includes Bahrain, the Islamic Republic of Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, the Syrian Arab Republic, the United Arab Emirates and Yemen.

ENERGY NATIONAL PROFILE 2009

- Total Primary Energy Supply: 889.0 PJ Of which renewables: 7.0 PJ (0.8%)
- Energy self-sufficiency: 112.6%
- Fuel imports*: 1.9 billion USD (11.2% of total imports)
- Electricity generation: 43.3 TWh Of which renewables: 1,866 GWh (4.3%)
- Electricity use per capita: 1,603 kWh
- Electrical capacity: 8.2 GW Of which renewables: 1,250 MW (15.2%)
- Electricity access rate: 92.7%
- Share of population using solid fuels: < 5%
- * 2010

TARGETS:

• No information available

This Country Profile may contain advice, opinions and statements ("Information") of various information provides. The Information and the presson of entity Reliance upon a statements ("Information") of various information provides. The Information provides are and the presson of entity Reliance upon a content provides are and upon such information and ball be the user's own risk. Reliance upon a content provides are and upon such information and user and upon such information provides are and upon such information and and upon such information provides are and upon such information and and and upon such information and upon info



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



WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2012: Ranked 134 out of 183

IIIIIIII RENEWABLE ENERGY PROJECTS FROM THE GOVERNMENT AND PRIVATE SECTORS:

- 340 MW of wind capacity addition announced (4 projects)



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 (1GWh=10° kWh); TWh: terawatt-hour (1TWh=10° GWh); PJ: petajoule; MW: megawatt; GW: gigawatt (1 GW=10° 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



UNITED ARAB EMIRATES

7.5 million Population (2010) 297.6 billion USD GDP (2010) 39,625 USD GDP per capita (2010)

FIGURE 1: GDP PER CAPITA FOR 2010

FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2009



The Middle East includes Bahrain, the Islamic Republic of Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, the Syrian Arab Republic, the United Arab Emirates and Yemen.

ENERGY NATIONAL PROFILE 2009

- Total Primary Energy Supply: 2,526.8 PJ Of which renewables: 1.0 PJ (0.0%)
- Energy self-sufficiency: 279.7%
- Fuel imports*: 2.0 billion USD (1.3% of total imports)
- Electricity generation: 90.6 TWh Of which renewables: 0.0 GWh (0.0%)
- Electricity use per capita: 11,121 kWh
- Electrical capacity: 23.2 GW Of which renewables: 20 MW (0.0%)
- Electricity access rate: 100.0%
- Share of population using solid fuels: < 5%
- * 2010

IIIIIIIII TARGETS:

- Dubai: 5% of final energy from renewables by 2030
- Abu Dhabi: 7% of electricity generation capacity from renewables by 2020

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 occuracy or reliability of any advice. opinion, statement or other state or any information provides. The International Renewable Energy Agency does not represent or endorse the occuracy or reliability of any advice. opinion, statement or other state or any information provides are any information information provides. The International Renewable Energy Agency does not represent or endorse the occuracy or reliability of any advice. opinion, statement or other state of any incorcuracy, error, omission, interruption, deletion, deletination deletion, deletion, deletion, deletion, deletinat



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



IIIIIIIIII WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2012: Ranked 33 out of 183

IIIIII RENEWABLE ENERGY PROJECTS FROM THE GOVERNMENT AND PRIVATE SECTORS:

- 100 MW of solar thermal capacity addition by early 2013 (1 project)
- 13 MW of solar photovoltaic capacity addition by the end 2013 (1 project)
- 28.8 MW of wind capacity addition approved (1 project)
- 100 MW of waste-to-energy by the end of 2016 announced (1 project)
- 100 MW of solar photovoltaic capacity addition announced (1 project)

IIIIII NUMBER OF REGISTERED CLEAN DEVELOPMENT MECHANISM PROJECTS FOCUSING ON RENEWABLE ENERGY: 3



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 (1GWh=10° kWh); TWh: terawatt-hour (1TWh=10° GWh); PJ: petajoule; MW: megawatt; GW: gigawatt (1 GW=10° 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



FIGURE 1: GDP PER CAPITA FOR 2010

FIGURE 2: ELECTRICITY USE PER CAPITA FOR 2009



The Middle East includes Bahrain, the Islamic Republic of Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, the Syrian Arab Republic, the United Arab Emirates and Yemen.

ENERGY NATIONAL PROFILE 2009

- Total Primary Energy Supply: 308.3 PJ Of which renewables: 4.3 PJ (1.4%)
- Energy self-sufficiency: 206.7%
- Fuel imports*: 772 million USD (8.0% of total imports)
- Electricity generation: 6.7 TWh Of which renewables: 0.0 GWh (0.0%)
- Electricity use per capita: 219 kWh
- Electrical capacity: 1,330 MW Of which renewables: 0 MW (0.0%)
- Electricity access rate: 39.6%
- Share of population using solid fuels: 36%
- * 2010

TARGETS:

• 15% of electricity generation from renewables by 2025

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 occuracy or reliability of any advice, opinion, statement or their information providers. The International Renewable Energy Agency does not represent or endorse the occuracy or reliability of any advice, opinion, statement or shall be their user on mysice. Historica information providers are not present the respective agency, nare any of their respective agency, nare any of their sequelute agency, and any of their sequelute agency agency their sequelute agency agency and any agency their sequelute agency and any agency the elements on of the international Renewable Energy Agency and the presentation of any opinion whatsoever on the part of the Secretariat of the International Renewable Energy Agency and the tormation and their internation of any opinion whatsoever on the part of the Secretariat of the International Renewable Energy Agency concerning the legal shalls of any country, territory, city or area or is authorities, or concerning the telemation of list tortiles or boundaries. The term country's used in this material also refers, a supportive, to terminional country or respective agency agency the secretariat of the International Renewable Energy Agency Concerning the telemation of list tortiles or tournations. The terminional Renewable Energy Agency Concerning the telemational Renewable Energy Agency Concerning the telematical as a production and the secretaria of th



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



WORLD BANK EASE OF DOING BUSINESS INDEX FOR 2012: Ranked 99 out of 183

RENEWABLE ENERGY PROJECTS FROM THE GOVERNMENT AND PRIVATE SECTORS:

- 60 MW of wind capacity addition announced (1 project)



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=10° kWh); TWh: terawatt-hour (1TWh=10° GWh); PJ: petajoule; MW: megawatt; GW: gigawatt (1 GW=10° MW).Please also refer to the glossary for explanations on the terms used in the country profile.

GLOSSARY



] - 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 reduction credits which can be traded and sold, and used by industrialised countries to a 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 horizon- tal irra- diation 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. agricul- ture, 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 be- tween 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 hori- zontal irra- diation 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. agricul- ture, 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

Copyright 2012