



# O&G R

volume 2

World Gas and Renewables Review 2018



# World Gas and Renewables Review 2018





I am glad to present the announced **second volume** of the **World Oil, Gas and Renewables Review 2018**. After our focus of July on oil and the refining industry, we now provide figures and statistics on natural gas, biofuels and modern renewables (wind and solar).

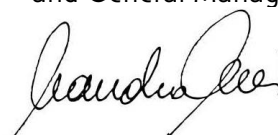
The key findings from the World Gas and Renewables Review are:

- Gas demand has been strong in 2017 (+3.3%), well above the average growth rates of the last decade. Consumption grew in all the regions, especially in Asia-Pacific and China where *Battle for Blue Skies* policies supported coal-to-gas switch. Europe kept growing for the third year in a row with a robust +4.9%.
- Australian production, thanks to LNG contributions, recorded a tremendous increase (+21%) while United States is still the world's largest natural gas producer even if its 2017 production increase was marginal (+0.7%).
- It is also important to highlight the strong increase of Egyptian production (+23%). Egypt overtook Nigeria becoming the second main African producer (after Algeria) thanks to Zohr field start-up.
- Renewables, despite still giving a modest contribution to power generation, have grown rapidly in recent years, accompanied by sharp cost reductions. Solar photovoltaic, in particular, recorded huge capacity additions (+30%).
- As a whole, wind and solar installed generation capacity account now for more than 40% of all renewables and about 13% of all power sources.

Natural gas and renewables are assuming a progressively greater role in the energy panorama accompanying the transition to a less carbon-intensive and more sustainable energy system.

We hope that once again this edition of the World Oil, Gas and Renewables Review gives detailed tools for interpreting the dynamics of the world energy market and provides a useful source of information for both specialists in the sector and all other readers.

**Claudio Descalzi**  
Chief Executive Officer  
and General Manager





## Introduction

List of Countries	VI
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Notes and Methods	VIII
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## Natural Gas – Supply and Demand

<b>Reserves</b>	<b>2</b>	<b>LNG – Liquefaction and Regasification Capacity</b>	<b>44</b>
Areas and Aggregates	2	Liquefaction Capacity – Countries	44
The World Top 10 Reserves Holders	3	Liquefaction Capacity – Cluster of Companies	45
Countries	4	Regasification Capacity – Countries	46
Cluster of Companies	7	Regasification Capacity – Cluster of Companies	47

<b>Production</b>	<b>8</b>	<b>Natural Gas Balance – Italy</b>	<b>48</b>
Areas and Aggregates	8		
The World Top 10 Producers	9	<b>Natural Gas Prices</b>	<b>49</b>
Countries	10		
Cluster of Companies	12		

## Renewables

<b>Reserves/Production Ratio</b>	<b>13</b>	<b>Solar Resources Map (Global Horizontal Irradiance)</b>	<b>52</b>
Areas and Aggregates	13		
The World Top 10 Producers Ranked by Reserves/Production Ratio	14	<b>Solar Photovoltaic Power Capacity</b>	<b>53</b>
Countries	15	Areas and Aggregates	53
		The World Top 10 Countries	54
			55

<b>Consumption</b>	<b>17</b>	<b>Solar Photovoltaic Power Generation</b>	<b>58</b>
Areas and Aggregates	17	Areas and Aggregates	58
The World Top 10 Consumers	18	The World Top 10 Countries	59
Countries	19		60

<b>Per Capita Consumption</b>	<b>21</b>	<b>Concentrated Solar Power Capacity</b>	<b>62</b>
Areas and Aggregates	21	Areas and Aggregates	62
The World Top 10 Consumers Ranked by Per Capita Consumption Ratio	22	The World Top 10 Countries	63
Countries	23		64

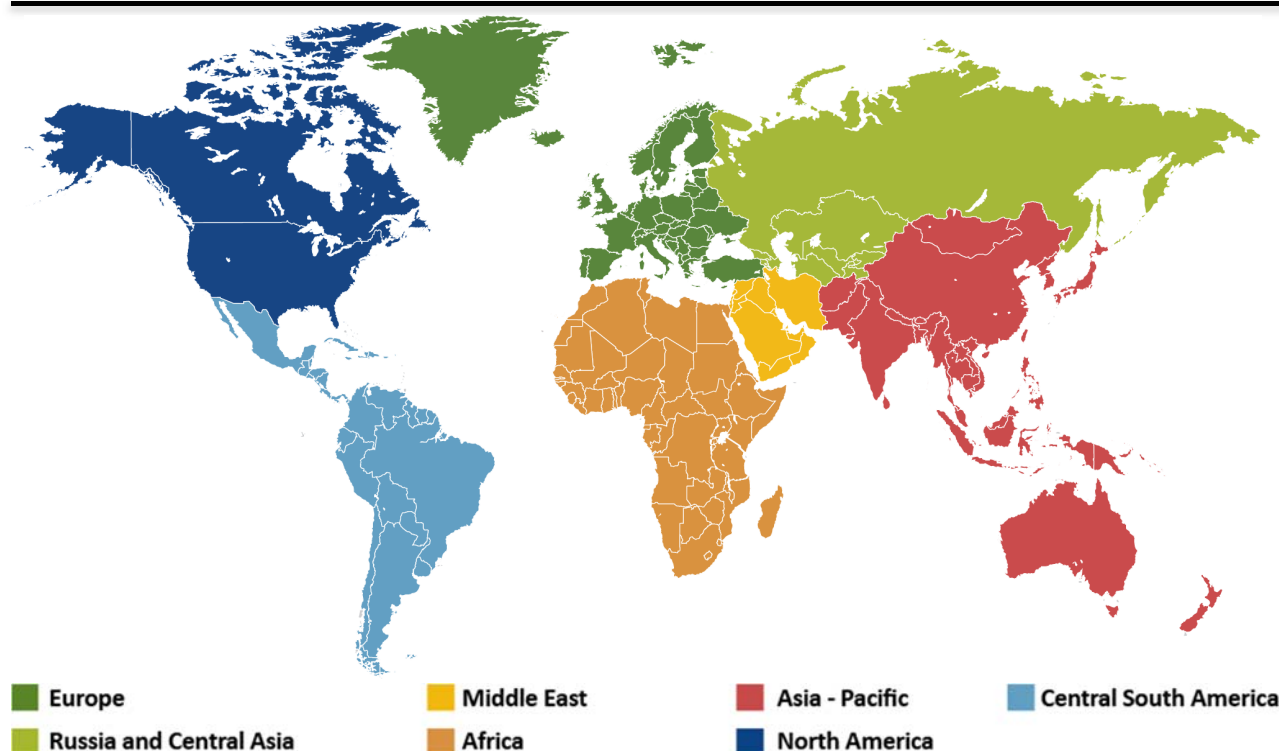
<b>Production/Consumption Ratio</b>	<b>26</b>	<b>Concentrated Solar Power Generation</b>	<b>65</b>
Areas and Aggregates	26	Areas and Aggregates	65
The World Top 10 Producers Ranked by Production/Consumption Ratio	27	The World Top 5 Countries	66
Countries	28		67

## Natural Gas – Trade and Prices

<b>Exports</b>	<b>32</b>	<b>Wind Resources Map (Average Wind Speed)</b>	<b>68</b>
The World Top 10 Exporters	32	<b>Wind Power Capacity</b>	<b>69</b>
Countries	33	Areas and Aggregates	69
		The World Top 10 Countries	70
			71

<b>Imports</b>	<b>35</b>	<b>Wind Power Generation</b>	<b>73</b>
The World Top 10 Importers	35	Areas and Aggregates	73
Countries	36	The World Top 10 Countries	74
Imports by Country of Origin – Pipeline and LNG 2017	38		75
Imports by Country of Origin – Pipeline 2017	40		
Imports by Country of Origin – LNG 2017	42	<b>Biofuels Production</b>	<b>77</b>

<b>Traded Gas</b>	<b>43</b>
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### List of Countries:

- **Europe:** Albania, Austria, Belarus, Belgium, Bosnia Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Gibraltar, Greece, Hungary, Iceland, Ireland, Italy, Kosovo, Latvia, Lithuania, Luxembourg, Macedonia, Malta, Moldova, Montenegro, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine and United Kingdom.
- **Russia and Central Asia:** Russia, Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan.
- **Middle East:** Bahrain, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syria, United Arab Emirates and Yemen.
- **Africa:** Algeria, Angola, Benin, Cameroon, Chad, Congo, Côte d'Ivoire, Dem. Rep. Congo, Egypt, Equatorial Guinea, Ethiopia, Gabon, Ghana, Kenya, Libya, Madagascar, Mauritania, Morocco, Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, Sierra Leone, Somalia, South Africa, Sudan, Tanzania, Tunisia, Uganda, Zambia and Zimbabwe.
- **Asia - Pacific:** Afghanistan, Australia, Bangladesh, Brunei, China, East Timor, Hong Kong, India, Indonesia, Japan, Malaysia, Mongolia, Myanmar, Nepal, New Zealand, North Korea, Pakistan, Papua New Guinea, Philippines, Singapore, South Korea, Sri Lanka, Taiwan, Thailand and Vietnam.
- ■ **Americas:** North America, Central South America.
- **North America:** Canada and the United States.
- **Central South America:** Argentina, Barbados, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Mexico, Netherlands Antilles, Nicaragua, Panama, Paraguay, Peru, Suriname, Trinidad and Tobago, Uruguay and Venezuela.
- **European Union:** Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and United Kingdom.
- **OECD:** Australia, Austria, Belgium, Canada, Chile, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Latvia, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovakia, Slovenia, South Korea, Spain, Sweden, Switzerland, Turkey, United Kingdom and United States.
- **OPEC:** Algeria, Angola, Ecuador, Equatorial Guinea, Gabon, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates and Venezuela.
- **MENA (Middle East and North Africa):** Bahrain, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syria, United Arab Emirates, Yemen and Algeria, Egypt, Libya, Morocco, Tunisia.

This Review adopts the most commonly used names for countries and not necessarily the official name.

The names used do not in any way indicate the opinion of Eni on the legal status of countries, territories, cities or areas mentioned. The term "country" is used to indicate, when necessary, also a territory or area. Borders between countries are indicated on the maps and do not imply judgement of any kind or the position of Eni with regard to current international disputes.

This Review has been prepared by the Scenarios, Strategic Options & Investor Relations Department.



## Notes and Methods

## Natural Gas

## Renewables

The sources of the data are: Cedigaz, DECC, EIA DOE, Enerdata, International Energy Agency (IEA), International Renewable Energy Agency (IRENA), IHS Global Insight, Italian Ministry for Economic Development, Norwegian Petroleum Directorate, Oil & Gas Journal, OPEC, Wood MacKenzie and other official sources..

Blank spaces in the tables indicate that the figure was not available, zero indicates a figure that is not significant (except for the two chapters **"Imports by Country of Origin"** and **"LNG Liquefaction and Regasification Capacity"** in the section "Natural Gas" and for the whole section "Renewables").

Total may differ from the sum of the individual figures as a result of rounding up/down.

Percentages have been calculated before rounding.

Data for Sudan also include South Sudan.

In all the chapters of natural gas, in some countries figures may include natural gas from non conventional sources and others sources of supply.

The figures for **"Reserves"** of natural gas refer to proven reserves as at 31<sup>st</sup> December. The figures for other chapters indicate annual averages.

In the chapters **"Production"**, **"Consumption"**, **"Exports"** and **"Imports"** of natural gas, figures are assessed by using the same calorific value per cubic metre (39 MJ/cm, GCV), in order to make data among countries comparable.

In the chapter **"Production"** of natural gas, the figures concern traded production and do not include quantities of flared, dispersed or re-injected gas.

In the chapter **"Imports"** of natural gas, the figure reported as total imports for a single country may differ from the sum of "Imports by LNG and pipeline" for the same country, because of the different sources and different calorific attached to the cubic metre. The imports of liquefied natural gas cover only the dry marketable equivalent after regasification.

In all the chapters, the list of the "The world top 10 or 5..." is drawn up by ordering the countries on the basis of the last available year. In the chapters **"Reserves/Production Ratio"** and **"Production/Consumption Ratio"** of natural gas, the list of the "The world top 10..." is drawn up by selecting the largest producers in the last available year and ordering them on the basis of the value of the reserves/production and production/consumption ratio. In the chapter **"Per Capita Consumption"** of natural gas, the list of the world top is drawn up by selecting the largest consumers in the last available year and ordering them by the value of per capita consumption.





# Natural Gas - Supply and Demand

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Reserves

Production

Reserves/Production Ratio

Consumption

Per Capita Consumption

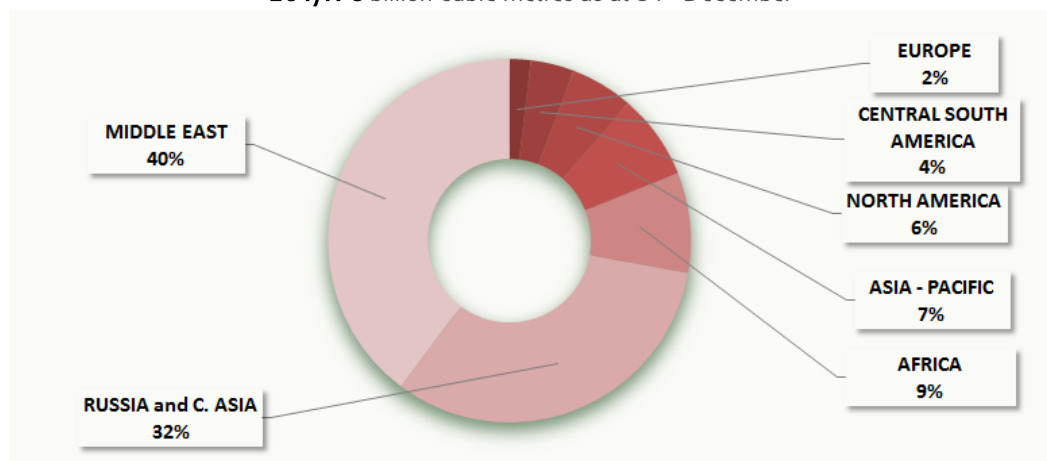
Production/Consumption Ratio

### Areas and Aggregates<sup>(\*)</sup>

(billion cubic metres as at 31<sup>st</sup> December)

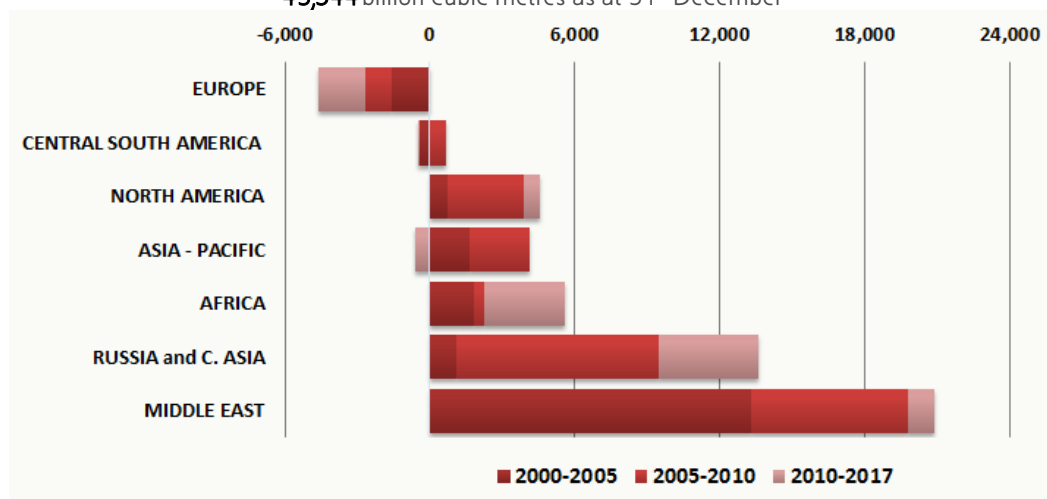
	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)	CAGR (2017-2000)
Europe	8,432	6,875	5,790	4,265	4,049	3,807	-6.0%	-4.6%
Russia and Central Asia	51,507	52,618	60,949	64,915	65,257	65,072	-0.3%	1.4%
Middle East	59,211	72,493	78,946	79,193	80,140	80,060	-0.1%	1.8%
Africa	12,370	14,167	14,629	17,370	17,817	17,951	0.8%	2.2%
Asia - Pacific	11,772	13,399	15,874	15,611	15,313	15,259	-0.3%	1.5%
Americas	14,342	14,621	18,451	18,772	19,069	19,030	-0.2%	1.7%
- North America	6,704	7,416	10,598	10,880	11,216	11,250	0.3%	3.1%
- Central South America	7,638	7,205	7,853	7,892	7,853	7,780	-0.9%	0.1%
<b>World</b>	<b>157,634</b>	<b>174,172</b>	<b>194,639</b>	<b>200,126</b>	<b>201,644</b>	<b>201,178</b>	<b>-0.2%</b>	<b>1.4%</b>
European Union	3,470	2,668	1,998	1,445	1,314	1,205	-8.2%	-6.0%
MENA	66,562	80,448	87,223	87,354	88,436	88,356	-0.1%	1.7%
OECD	7,107	5,638	4,651	3,805	3,604	3,378	-6.3%	-4.3%
NON OECD	150,527	168,535	189,987	196,320	198,040	197,799	-0.1%	1.6%
OPEC	71,894	86,780	94,532	94,912	95,953	95,951	0.0%	1.7%
NON OPEC	85,739	87,392	100,107	105,214	105,691	105,227	-0.4%	1.2%

**World Natural Gas Reserves (2017)**  
201,178 billion cubic metres as at 31<sup>st</sup> December



**World Natural Gas Reserves Growth (2000-2017)**

43,544 billion cubic metres as at 31<sup>st</sup> December



<sup>(\*)</sup> Data source: Eni's estimates on Enerdata *Global Energy Market and CO<sub>2</sub> Data* and other official data sources.



# Natural Gas - Supply and Demand

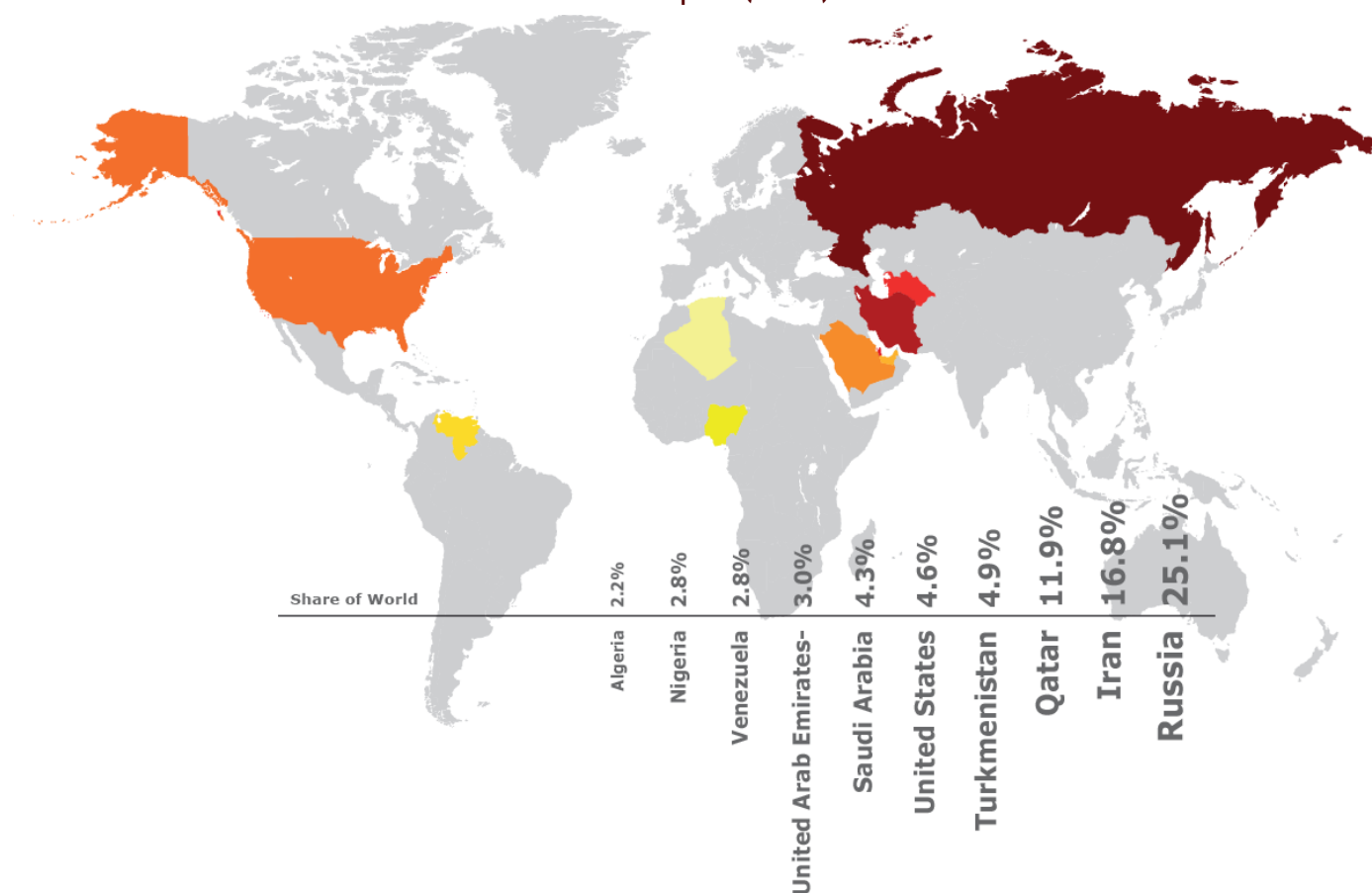
## Reserves

### The World Top 10 Reserves Holders<sup>(\*)</sup>

(billion cubic metres as at 31<sup>st</sup> December)

	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)	CAGR (2017-2000)
Russia	43,809	44,860	46,000	50,249	50,660	50,551	-0.2%	0.8%
Iran	26,000	27,580	33,090	33,500	33,721	33,810	0.3%	1.6%
Qatar	14,443	25,636	25,201	24,299	24,073	23,861	-0.9%	3.0%
Turkmenistan	2,680	2,680	10,000	9,870	9,838	9,805	-0.3%	7.9%
United States	5,021	5,784	8,621	8,709	9,119	9,210	1.0%	3.6%
Saudi Arabia	6,301	6,900	8,016	8,588	8,619	8,715	1.1%	1.9%
United Arab Emirates	6,060	6,060	6,091	6,091	6,091	6,091	0.0%	0.0%
Venezuela	4,152	4,315	5,525	5,702	5,740	5,707	-0.6%	1.9%
Nigeria	4,106	5,152	5,178	5,284	5,475	5,627	2.8%	1.9%
Algeria	4,523	4,504	4,504	4,504	4,504	4,504	0.0%	0.0%
<b>The World Top 10</b>	<b>117,096</b>	<b>133,471</b>	<b>152,225</b>	<b>156,796</b>	<b>157,840</b>	<b>157,880</b>	<b>0.0%</b>	<b>1.8%</b>
Rest of the World	40,538	40,701	42,413	43,330	43,804	43,297	-1.2%	0.4%
<b>World</b>	<b>157,634</b>	<b>174,172</b>	<b>194,639</b>	<b>200,126</b>	<b>201,644</b>	<b>201,178</b>	<b>-0.2%</b>	<b>1.4%</b>

The World Top 10 (2017)



<sup>(\*)</sup> Data source: Eni's estimates on Enerdata *Global Energy Market and CO<sub>2</sub> Data* and other official data sources.

# Natural Gas - Supply and Demand

## Reserves

### Countries<sup>(\*)</sup>

(billion cubic metres as at 31<sup>st</sup> December)

	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)	CAGR (2017-2000)
<b>Europe</b>	<b>8,432</b>	<b>6,875</b>	<b>5,790</b>	<b>4,265</b>	<b>4,049</b>	<b>3,807</b>	<b>-6.0%</b>	<b>-4.6%</b>
Albania	1	0	0	0	0	0	0.0%	-10.0%
Austria	26	21	15	9	8	8	-1.2%	-6.7%
Belarus	2	1	1	1	1	1	0.0%	-4.0%
Bulgaria	6	3	5	4	4	4	-7.0%	-2.4%
Croatia	29	30	25	11	10	9	-10.0%	-6.7%
Czech Republic	4	3	3	3	3	3	-9.9%	-1.7%
Denmark	144	122	101	80	77	72	-6.5%	-4.0%
France	8	7	5	9	9	9	3.4%	0.7%
Germany	264	178	87	46	42	37	-12.1%	-10.9%
Greece	1	1	1	1	1	1	0.0%	0.0%
Hungary	32	21	12	9	7	6	-17.8%	-9.4%
Ireland	34	25	25	30	30	30	0.0%	-0.7%
Italy (**)	199	117	66	49	38	45	17.2%	-8.4%
Moldova	20	20	20	20	20	20	0.0%	0.0%
Netherlands	1,684	1,431	1,236	825	740	664	-10.3%	-5.3%
Norway	3,841	3,108	2,762	2,461	2,388	2,263	-5.2%	-3.1%
Poland	119	106	71	61	58	56	-3.8%	-4.3%
Romania	202	143	110	103	99	92	-7.4%	-4.5%
Serbia and Montenegro	25	10	8	6	6	6	0.0%	-7.8%
Slovakia	7	6	5	5	5	4	-12.3%	-3.1%
Slovenia	0	0	1	1	1	1	0.0%	
Spain	5	3	3	3	3	3	-11.8%	-3.1%
Turkey	4	8	6	6	6	6	-4.8%	2.4%
Ukraine	1,040	1,030	969	314	304	296	-2.6%	-7.1%
United Kingdom	735	481	253	207	187	171	-8.7%	-8.2%

	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)	CAGR (2017-2000)
<b>Russia and Central Asia</b>	<b>51,507</b>	<b>52,618</b>	<b>60,949</b>	<b>64,915</b>	<b>65,257</b>	<b>65,072</b>	<b>-0.3%</b>	<b>1.4%</b>
Russia	43,809	44,860	46,000	50,249	50,660	50,551	-0.2%	0.8%
Armenia	165	165	18	18	18	18	0.0%	-12.2%
Azerbaijan	1,275	1,275	1,317	1,284	1,277	1,269	-0.6%	0.0%
Georgia	1	1	1	1	1	1	0.0%	-4.0%
Kazakhstan	1,840	1,900	1,950	1,907	1,898	1,885	-0.7%	0.1%
Kyrgyzstan	1	1	1	1	1	1	0.0%	-4.0%
Tajikistan	1	1	1	1	1	1	0.0%	-4.0%
Turkmenistan	2,680	2,680	10,000	9,870	9,838	9,805	-0.3%	7.9%
Uzbekistan	1,735	1,735	1,661	1,585	1,564	1,542	-1.4%	-0.7%

	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)	CAGR (2017-2000)
<b>Middle East</b>	<b>59,211</b>	<b>72,493</b>	<b>78,946</b>	<b>79,193</b>	<b>80,140</b>	<b>80,060</b>	<b>-0.1%</b>	<b>1.8%</b>
Bahrain	110	90	92	92	92	92	0.0%	-1.0%
Iran	26,000	27,580	33,090	33,500	33,721	33,810	0.3%	1.6%
Iraq	3,109	3,170	3,158	3,158	3,820	3,744	-2.0%	1.1%
Israel	45	45	215	206	465	488	4.9%	15.1%
Jordan	7	6	6	6	6	6	0.0%	-0.9%
Kuwait	1,557	1,572	1,784	1,784	1,784	1,784	0.0%	0.8%
Oman	859	670	520	705	705	705	0.0%	-1.2%
Qatar	14,443	25,636	25,201	24,299	24,073	23,861	-0.9%	3.0%
Saudi Arabia	6,301	6,900	8,016	8,588	8,619	8,715	1.1%	1.9%
Syria	241	285	285	285	285	285	0.0%	1.0%
United Arab Emirates	6,060	6,060	6,091	6,091	6,091	6,091	0.0%	0.0%
Yemen	479	479	488	479	479	479	0.0%	0.0%

(\*) Data source: Eni's estimates on Enerdata *Global Energy Market and CO<sub>2</sub> Data* and other official data sources.

(\*\*) Data source: Italian Ministry for Economic Development.

# Natural Gas - Supply and Demand

## Reserves

### Countries<sup>(\*)</sup>

(billion cubic metres as at 31<sup>st</sup> December)

	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)	CAGR (2017-2000)
<b>Africa</b>	<b>12,370</b>	<b>14,167</b>	<b>14,629</b>	<b>17,370</b>	<b>17,817</b>	<b>17,951</b>	<b>0.8%</b>	<b>2.2%</b>
Algeria	4,523	4,504	4,504	4,504	4,504	4,504	0.0%	0.0%
Angola	269	270	310	316	440	422	-3.9%	2.7%
Benin	1	1	1	0	0	0		-100.0%
Cameroon	102	165	155	153	152	151	-0.7%	2.3%
Chad	0	0	1	1	1	1	0.0%	
Congo	122	130	127	112	111	109	-1.8%	-0.7%
Côte d'Ivoire	28	31	27	22	21	20	-4.3%	-2.0%
Dem. Rep. Congo	1	1	0	0	0	0		-100.0%
Egypt	1,433	1,920	2,210	2,086	2,221	2,221	0.0%	2.6%
Equatorial Guinea	17	91	145	145	145	145	0.0%	13.4%
Ethiopia	25	25	28	28	28	28	0.0%	0.7%
Gabon	33	30	28	25	26	26	0.0%	-1.5%
Ghana	24	24	27	55	55	58	5.5%	5.3%
Libya	1,314	1,491	1,495	1,505	1,505	1,505	0.0%	0.8%
Madagascar	2	2	2	2	2	2	0.0%	0.0%
Mauritania	0	0	28	28	28	28	0.0%	
Morocco	3	3	3	1	1	1	0.0%	-6.3%
Mozambique	62	61	75	2,830	2,830	2,830	0.0%	25.2%
Namibia	85	70	70	70	70	70	0.0%	-1.1%
Nigeria	4,106	5,152	5,178	5,284	5,475	5,627	2.8%	1.9%
Senegal	11	11	10	2	2	2	0.0%	-9.5%
Somalia	6	6	6	6	6	6	0.0%	0.0%
South Africa	17	29	12	3	3	3	7.1%	-9.7%
Sudan	85	85	85	85	85	85	0.0%	0.0%
Tanzania	23	28	37	37	37	37	0.0%	2.8%
Tunisia	78	37	65	65	65	65	0.0%	-1.1%
Uganda	0	0	0	5	5	5	0.0%	

	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)	CAGR (2017-2000)
<b>Asia - Pacific</b>	<b>11,772</b>	<b>13,399</b>	<b>15,874</b>	<b>15,611</b>	<b>15,313</b>	<b>15,259</b>	<b>-0.3%</b>	<b>1.5%</b>
Afghanistan	100	100	100	99	99	99	-0.1%	-0.1%
Australia	2,203	2,428	3,759	3,205	3,193	3,175	-0.6%	2.2%
Bangladesh	306	407	354	385	588	568	-3.4%	3.7%
Brunei	366	333	301	258	252	240	-4.8%	-2.5%
China	1,269	1,690	2,244	2,644	2,716	2,732	0.6%	4.6%
India	821	1,162	1,210	1,313	1,288	1,351	4.9%	3.0%
Indonesia	2,608	2,659	3,068	2,865	2,841	2,810	-1.1%	0.4%
Japan	40	39	37	31	29	28	-4.4%	-2.1%
Malaysia	2,189	2,346	2,334	2,842	2,470	2,471	0.0%	0.7%
Myanmar	489	687	724	484	368	360	-2.2%	-1.8%
New Zealand	57	62	52	56	50	50	-0.4%	-0.8%
Pakistan	677	852	810	723	711	699	-1.7%	0.2%
Papua New Guinea	3	3	263	216	238	226	-5.0%	28.2%
Philippines	108	100	86	71	69	66	-4.3%	-2.9%
South Korea	0	3	1	1	1	1	0.0%	
Taiwan	6	4	4	3	3	3	8.7%	-3.8%
Thailand	360	304	300	207	193	181	-6.2%	-4.0%
Vietnam	170	220	228	207	203	199	-2.0%	0.9%

<sup>(\*)</sup> Data source: Eni's estimates on Enerdata *Global Energy Market and CO<sub>2</sub> Data* and other official data sources.

# Natural Gas - Supply and Demand

## Reserves

### Countries<sup>(\*)</sup>

(billion cubic metres as at 31<sup>st</sup> December)

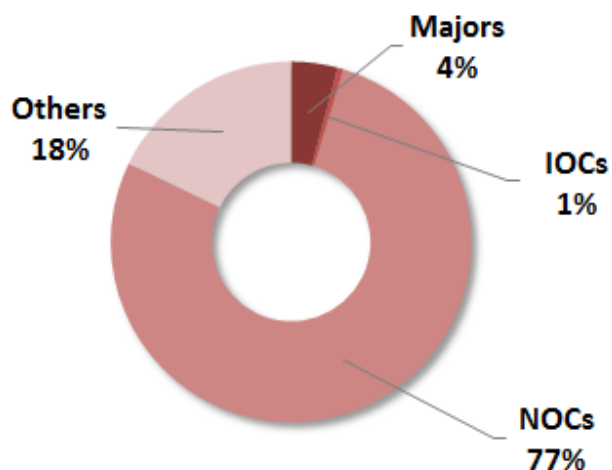
	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)	CAGR (2017-2000)
<b>Americas</b>	<b>14,342</b>	<b>14,621</b>	<b>18,451</b>	<b>18,772</b>	<b>19,069</b>	<b>19,030</b>	<b>-0.2%</b>	<b>1.7%</b>
Argentina	778	439	359	350	337	343	1.9%	-4.7%
Barbados	0	2	2	2	0	0	0.0%	
Bolivia	675	710	281	305	310	303	-2.3%	-4.6%
Brazil	221	306	417	429	378	370	-2.1%	3.1%
Canada	1,683	1,632	1,977	2,171	2,097	2,040	-2.7%	1.1%
Chile	17	13	8	6	5	5	-5.7%	-7.1%
Colombia	129	113	153	123	114	110	-3.5%	-0.9%
Cuba	18	17	14	9	8	7	-12.5%	-5.4%
Ecuador	10	9	7	11	11	11	0.0%	0.6%
Mexico	835	412	353	257	208	208	0.0%	-7.9%
Peru	245	338	353	399	456	470	3.1%	3.9%
Trinidad and Tobago	557	531	381	300	286	246	-14.0%	-4.7%
United States	5,021	5,784	8,621	8,709	9,119	9,210	1.0%	3.6%
Venezuela	4,152	4,315	5,525	5,702	5,740	5,707	-0.6%	1.9%

<sup>(\*)</sup> Data source: Eni's estimates on Enerdata *Global Energy Market and CO<sub>2</sub> Data* and other official data sources.

Cluster of Companies(\*)

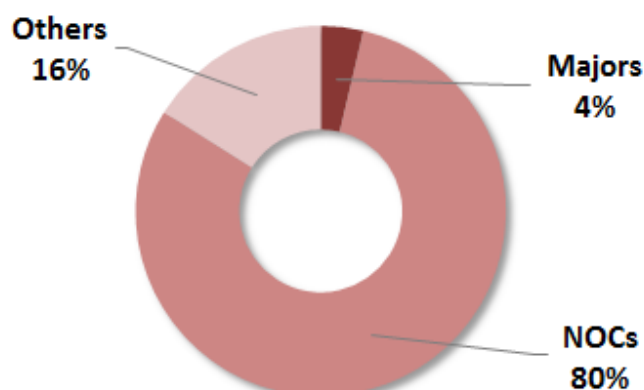
2000

World: 157,634 billion cubic metres as at 31<sup>st</sup> December



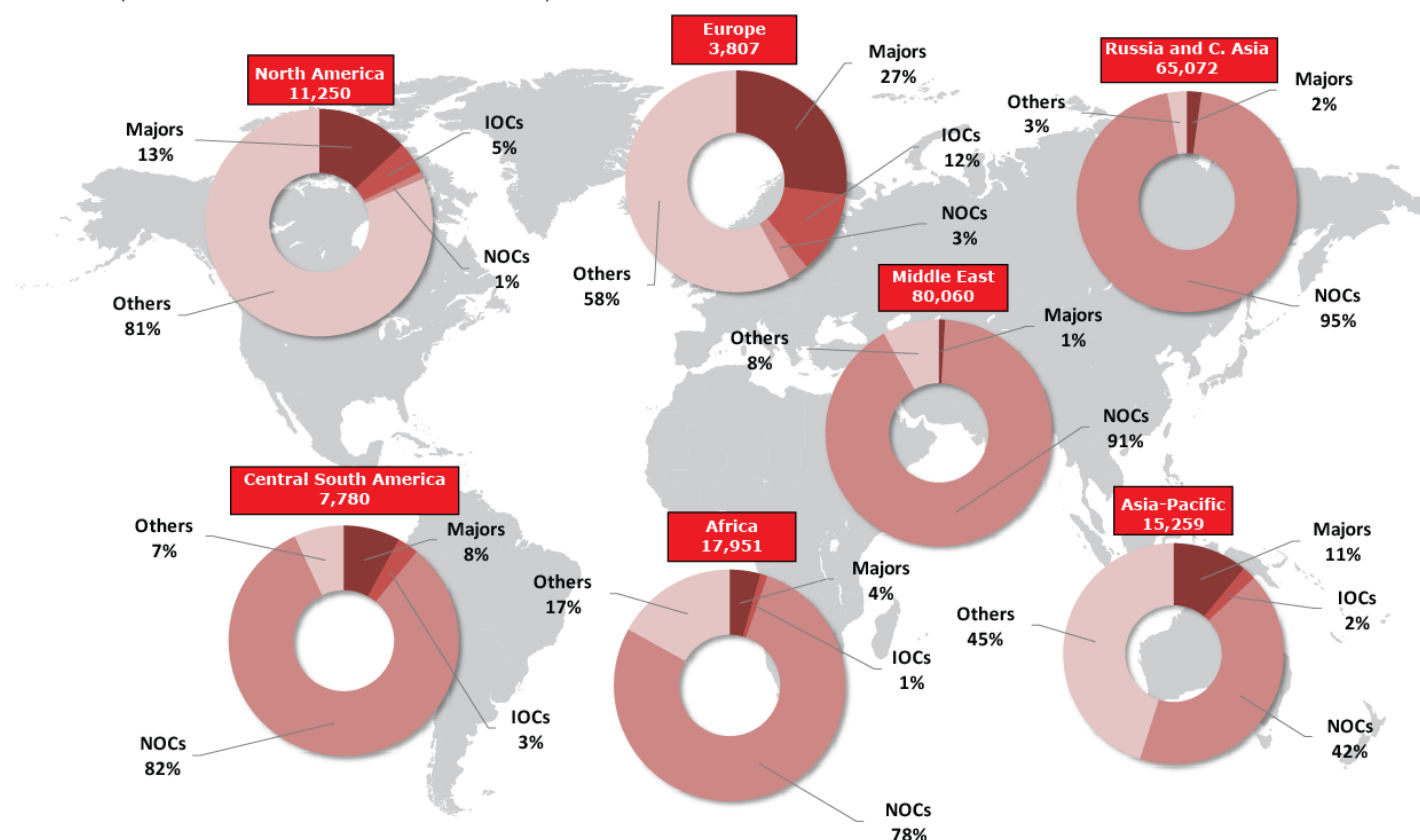
2017

World: 201,178 billion cubic metres as at 31<sup>st</sup> December



2017

(billion cubic metres as at 31<sup>st</sup> December)



(\*) **Majors:** ExxonMobil, BP, Shell, Chevron, Total, Eni, Equinor, ConocoPhillips, Anadarko, Marathon Oil, Apache.

**IOCs:** BG, BHP Billiton, OMV, Repsol, Woodside Petroleum.

**NOCs:** ADNOC, Bahrain NOC, Bashneft, CNOOC, CNPC-PetroChina, CPC Taiwan, Dubai Petroleum, Ecopetrol, EGPC, Gazprom, INOC, Israel NOC, KazMunaiGaz, KNOG, KPC, Libyan NOC, Lukoil, MEDCO Energy, MOGE, Morocco NOC, Mubadala - Abu Dhabi, NIOC, NNPC, Novatek, Oil India, ONGC, Pakistan Oil Field, Pakistan Petroleum, PDO, PdVSA, Pemex, Pertamina, Petrobras, Petronas, PetroVietnam, PGNiG, PTTEP, QP, Rosneft, Saudi Aramco, Sinopec, SOCAR Azerbaijan, Sonangol, Sonatrach, Surgutneftegas, Syria Petroleum, Tatneft, Turkmengas, Uzbekneftegas, YPF.



# Natural Gas - Supply and Demand

## Production

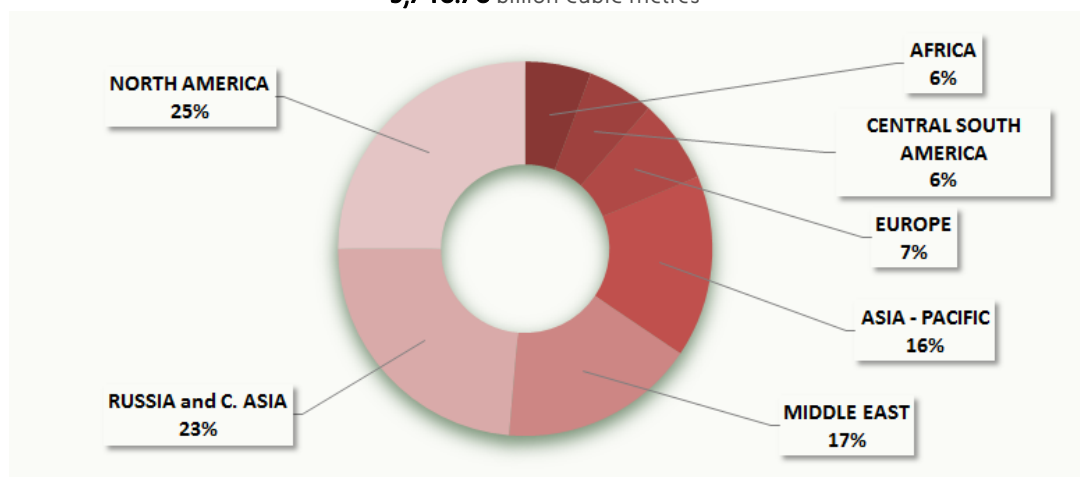
### Areas and Aggregates<sup>(\*)</sup>

(billion cubic metres)

	2000	2005	2010	2015	2016	2017	Δ y/y 2017-2016)	CAGR (2017-2000)
Europe	324.98	336.79	322.65	269.57	269.19	271.13	0.7%	-1.1%
Russia and Central Asia	676.67	759.70	792.93	826.39	835.13	884.75	5.9%	1.6%
Middle East	196.19	302.55	470.03	592.81	614.92	634.72	3.2%	7.2%
Africa	124.58	186.31	208.16	197.31	202.31	214.13	5.8%	3.2%
Asia - Pacific	288.35	370.65	484.67	535.85	558.46	590.02	5.7%	4.3%
Americas	853.22	870.52	960.17	1,144.39	1,137.65	1,154.03	1.4%	1.8%
- North America	710.20	686.81	748.27	925.55	922.61	937.94	1.7%	1.6%
- Central South America	143.02	183.70	211.91	218.84	215.04	216.09	0.5%	2.5%
<b>World</b>	<b>2,463.99</b>	<b>2,826.51</b>	<b>3,238.62</b>	<b>3,566.31</b>	<b>3,617.66</b>	<b>3,748.78</b>	<b>3.6%</b>	<b>2.5%</b>
European Union	250.27	227.25	190.02	128.04	127.94	122.94	-3.9%	-4.1%
MENA	304.77	457.04	631.36	729.72	758.90	785.70	3.5%	5.7%
OECD	1,086.15	1,084.81	1,156.87	1,289.52	1,303.18	1,332.91	2.3%	1.2%
NON OECD	1,377.84	1,741.70	2,081.74	2,276.79	2,314.48	2,415.87	4.4%	3.4%
OPEC	299.27	412.41	568.70	693.63	725.66	746.31	2.8%	5.5%
NON OPEC	2,164.72	2,414.10	2,669.91	2,872.68	2,892.00	3,002.47	3.8%	1.9%

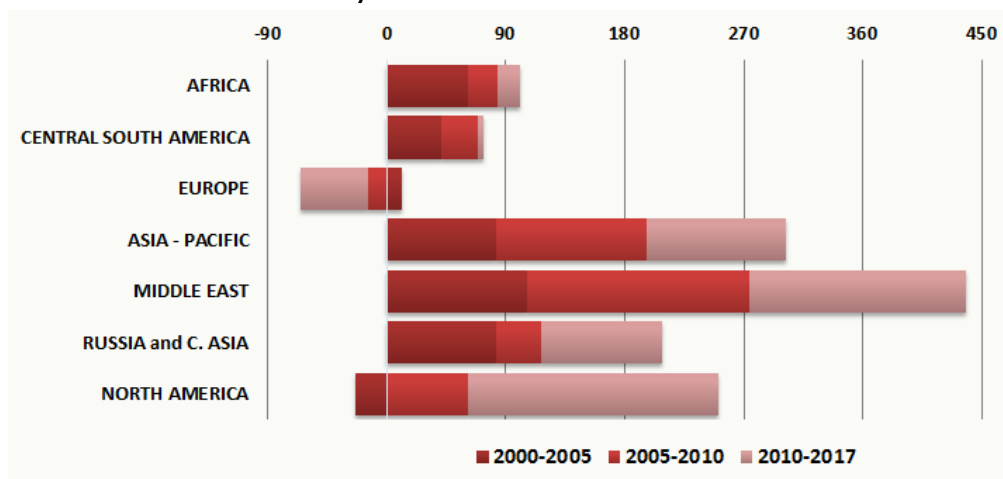
### World Natural Gas Production (2017)

3,748.78 billion cubic metres



### World Natural Gas Production Growth (2000-2017)

1,284.79 billion cubic metres



<sup>(\*)</sup> Data source: Eni's calculations. The original data are from IEA Extended Balances © OECD/International Energy Agency, 2018. Data have been converted by Eni using a unified gross calorific value of 39 MJ/cm.

# Natural Gas - Supply and Demand

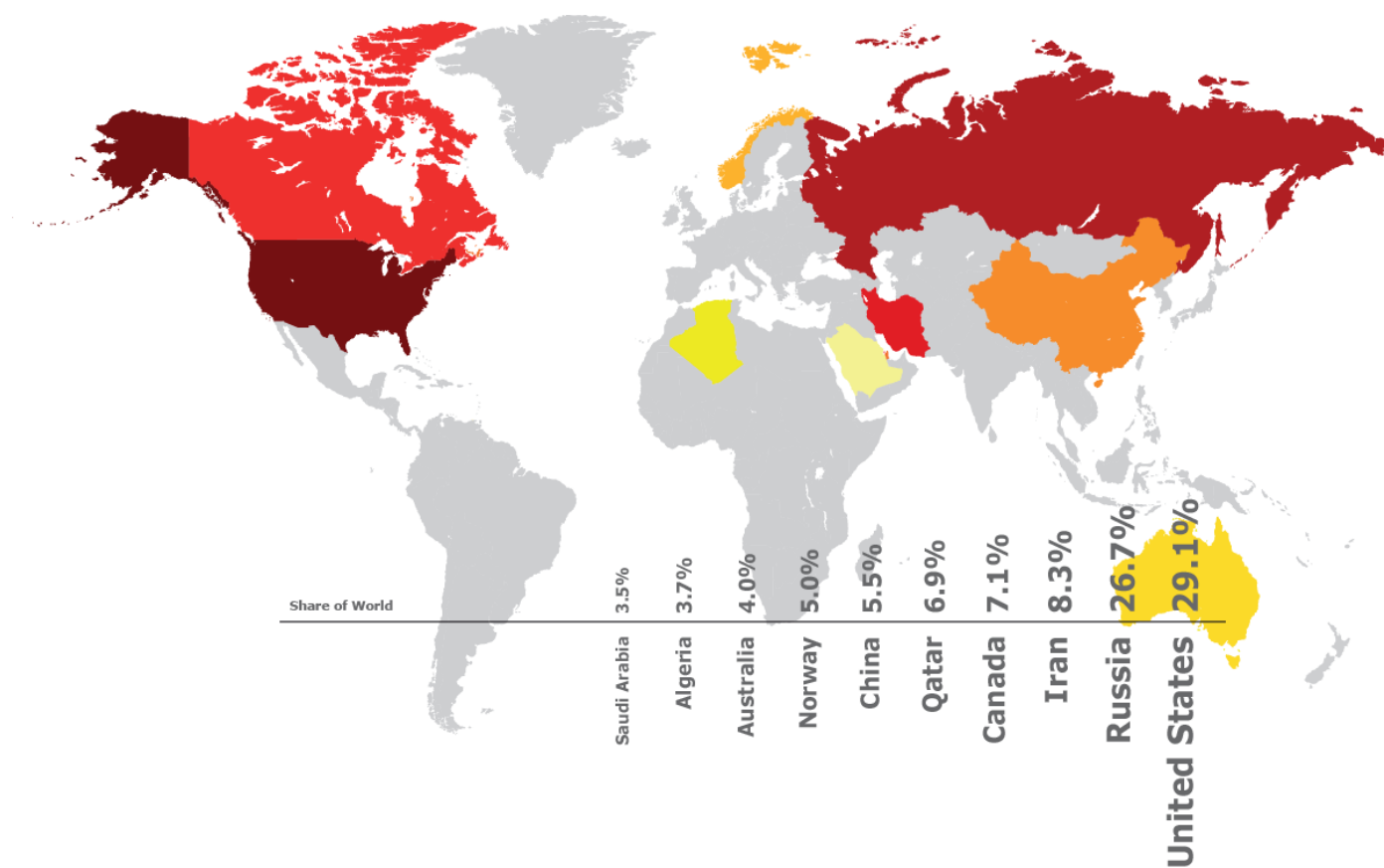
## Production

### The World Top 10 Producers<sup>(\*)</sup>

(billion cubic metres)

	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)	CAGR (2017-2000)
United States	533.21	502.92	590.28	759.54	748.39	753.51	0.7%	2.1%
Russia	561.59	615.40	644.41	625.52	642.31	691.94	7.7%	1.2%
Iran	59.47	99.57	145.21	185.79	201.70	215.75	7.0%	7.9%
Canada	176.99	183.89	157.98	166.01	174.22	184.44	5.9%	0.2%
Qatar	25.99	47.56	128.01	177.07	179.34	179.47	0.1%	12.0%
China	27.16	49.24	95.64	134.39	136.64	141.45	3.5%	10.2%
Norway	55.21	89.52	113.00	122.70	122.09	129.13	5.8%	5.1%
Australia	34.05	37.41	53.06	67.26	86.51	104.81	21.1%	6.8%
Algeria	83.33	90.20	85.86	85.21	96.11	95.79	-0.3%	0.8%
Saudi Arabia	36.72	54.84	71.46	85.03	88.48	91.76	3.7%	5.5%
<b>The World Top 10</b>	<b>1,593.73</b>	<b>1,770.56</b>	<b>2,084.91</b>	<b>2,408.53</b>	<b>2,475.79</b>	<b>2,588.03</b>	<b>4.5%</b>	<b>2.9%</b>
Rest of the World	870.26	1,055.95	1,153.70	1,157.79	1,141.88	1,160.75	1.7%	1.7%
<b>World</b>	<b>2,463.99</b>	<b>2,826.51</b>	<b>3,238.62</b>	<b>3,566.31</b>	<b>3,617.66</b>	<b>3,748.78</b>	<b>3.6%</b>	<b>2.5%</b>

### The World Top (2017)



<sup>(\*)</sup> Data source: the original data are from *IEA Extended Balances* © OECD/International Energy Agency, 2018. Data have been converted by Eni using a unified gross calorific value of 39 MJ/cm.

# Natural Gas - Supply and Demand

## Production

### Countries<sup>(\*)</sup>

(billion cubic metres)

	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)	CAGR (2017-2000)
<b>Europe</b>	<b>324.98</b>	<b>336.79</b>	<b>322.65</b>	<b>269.57</b>	<b>269.19</b>	<b>271.13</b>	<b>0.7%</b>	<b>-1.1%</b>
Albania	0.01	0.01	0.01	0.03	0.04	0.04	2.9%	8.5%
Austria	1.85	1.59	1.67	1.24	1.16	1.24	7.0%	-2.3%
Belarus	0.22	0.19	0.16	0.17	0.17	0.20	22.3%	-0.5%
Bulgaria	0.01	0.46	0.07	0.10	0.09	0.08	-14.3%	10.5%
Croatia	1.62	2.22	2.64	1.75	1.63	1.46	-10.6%	-0.6%
Czech Republic	0.20	0.18	0.24	0.24	0.21	0.22	4.4%	0.6%
Denmark	8.84	11.19	8.76	4.94	4.84	5.18	7.1%	-3.1%
France	1.80	1.08	0.77	0.02	0.02	0.02	-22.2%	-24.1%
Germany	18.85	17.10	13.26	7.56	7.82	6.82	-12.7%	-5.8%
Greece	0.05	0.02	0.01	0.01	0.01	0.01	-10.0%	-8.7%
Hungary	2.95	2.78	2.67	1.63	1.70	1.68	-1.4%	-3.3%
Ireland	1.14	0.55	0.27	0.13	2.96	3.40	14.7%	6.6%
Italy	16.25	11.79	8.21	6.62	5.65	5.41	-4.3%	-6.3%
Netherlands	62.94	67.02	77.21	47.06	45.43	39.62	-12.8%	-2.7%
Norway	55.21	89.52	113.00	122.70	122.09	129.13	5.8%	5.1%
Poland	3.95	4.63	4.41	4.39	4.24	4.14	-2.2%	0.3%
Romania	13.08	11.57	10.28	10.48	9.29	10.58	13.9%	-1.2%
Serbia	0.74	0.27	0.37	0.54	0.50	0.46	-7.4%	-2.8%
Slovakia	0.16	0.15	0.10	0.09	0.09	0.10	11.7%	-2.5%
Slovenia	0.01	0.00	0.01	0.00	0.00	0.01	75.0%	0.9%
Spain	0.18	0.17	0.05	0.06	0.06	0.04	-35.4%	-8.8%
Turkey	0.63	0.88	0.67	0.37	0.36	0.35	-3.3%	-3.4%
Ukraine	17.90	18.66	18.42	17.70	18.10	18.00	-0.6%	0.0%
United Kingdom	116.38	94.72	59.39	41.71	42.72	42.92	0.5%	-5.7%

	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)	CAGR (2017-2000)
<b>Russia and Central Asia</b>	<b>676.67</b>	<b>759.70</b>	<b>792.93</b>	<b>826.39</b>	<b>835.13</b>	<b>884.75</b>	<b>5.9%</b>	<b>1.6%</b>
Russia	561.59	615.40	644.41	625.52	642.31	691.94	7.7%	1.2%
Azerbaijan	5.45	5.54	16.69	19.27	18.75	18.21	-2.9%	7.4%
Georgia	0.07	0.02	0.01	0.01	0.01	0.01	0.0%	-12.3%
Kazakhstan	9.09	18.88	29.35	39.80	41.82	42.07	0.6%	9.4%
Kyrgyzstan	0.03	0.03	0.02	0.03	0.03	0.03	0.0%	-1.2%
Tajikistan	0.04	0.03	0.02	0.00	0.00	0.00	-33.3%	-15.0%
Turkmenistan	45.59	61.21	44.02	81.33	77.51	77.51	0.0%	3.2%
Uzbekistan	54.80	58.59	58.41	60.43	54.70	54.97	0.5%	0.0%

	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)	CAGR (2017-2000)
<b>Middle East</b>	<b>196.19</b>	<b>302.55</b>	<b>470.03</b>	<b>592.81</b>	<b>614.92</b>	<b>634.72</b>	<b>3.2%</b>	<b>7.2%</b>
Bahrain	8.17	9.97	12.61	14.51	14.35	14.74	2.7%	3.5%
Iran	59.47	99.57	145.21	185.79	201.70	215.75	7.0%	7.9%
Iraq	3.07	1.77	5.00	6.77	7.45	7.61	2.2%	5.5%
Israel	0.01	1.57	3.19	8.06	9.05	9.34	3.2%	49.9%
Jordan	0.25	0.21	0.16	0.12	0.10	0.10	-3.5%	-5.4%
Kuwait	9.36	11.99	11.43	16.48	16.85	16.66	-1.1%	3.5%
Oman	10.81	21.38	28.35	33.74	34.44	35.26	2.4%	7.2%
Qatar	25.99	47.56	128.01	177.07	179.34	179.47	0.1%	12.0%
Saudi Arabia	36.72	54.84	71.46	85.03	88.48	91.76	3.7%	5.5%
Syria	5.51	5.90	8.64	4.16	3.63	3.62	0.0%	-2.4%
United Arab Emirates	36.84	47.80	49.55	58.15	59.02	59.89	1.5%	2.9%
Yemen	0.00	0.00	6.42	2.93	0.51	0.51	0.0%	

<sup>(\*)</sup> Data source: the original data are from *IEA Extended Balances* © OECD/International Energy Agency, 2018. Data have been converted by Eni using a unified gross calorific value of 39 MJ/cm.

# Natural Gas - Supply and Demand

## Production

### Countries(\*)

(billion cubic metres)

	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)	CAGR (2017-2000)
<b>Africa</b>	<b>124.58</b>	<b>186.31</b>	<b>208.14</b>	<b>197.31</b>	<b>202.31</b>	<b>214.13</b>	<b>5.8%</b>	<b>3.2%</b>
Algeria	83.33	90.20	85.86	85.21	96.11	95.79	-0.3%	0.8%
Angola	0.56	0.63	0.72	0.75	1.67	3.02	81.2%	10.5%
Cameroon	0.00	0.00	0.31	0.49	0.53	0.53	0.0%	
Congo	0.00	0.02	0.10	0.27	0.25	0.25	-0.5%	
Côte d'Ivoire	1.51	1.49	1.58	2.01	2.25	2.25	-0.1%	2.4%
Egypt	17.22	50.86	55.36	37.33	35.43	43.68	23.3%	5.6%
Gabon	0.12	0.15	0.32	0.53	0.53	0.53	-0.2%	9.1%
Ghana	0.00	0.00	0.00	0.71	0.63	0.63	0.0%	
Libya	5.73	11.01	16.38	11.30	9.65	8.86	-8.1%	2.6%
Morocco	0.05	0.04	0.05	0.08	0.07	0.07	1.6%	2.9%
Mozambique	0.00	2.23	3.20	4.88	4.98	5.20	4.3%	63.7%
Nigeria	12.14	23.59	31.71	42.57	39.27	41.91	6.7%	7.6%
Senegal	0.00	0.02	0.03	0.02	0.02	0.02	0.0%	18.9%
South Africa	1.67	2.13	1.50	1.22	1.10	1.10	0.0%	-2.4%
Tanzania	0.00	0.40	0.77	0.87	0.83	0.83	-0.1%	
Tunisia	2.25	2.38	3.67	3.00	2.72	2.58	-5.2%	0.8%
Others Africa	0.00	1.16	6.57	6.04	6.26	6.87	9.8%	66.4%

	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)	CAGR (2017-2000)
<b>Asia - Pacific</b>	<b>288.35</b>	<b>370.65</b>	<b>484.67</b>	<b>535.85</b>	<b>558.46</b>	<b>590.02</b>	<b>5.7%</b>	<b>4.3%</b>
Australia	34.05	37.41	53.06	67.26	86.51	104.81	21.1%	6.8%
Bangladesh	8.81	12.90	19.84	25.21	27.56	27.55	0.0%	6.9%
Brunei	11.29	11.93	12.25	11.23	10.83	11.97	10.5%	0.3%
China	27.16	49.24	95.64	134.39	136.64	141.45	3.5%	10.2%
India	27.52	30.94	51.26	31.25	30.92	31.54	2.0%	0.8%
Indonesia	72.97	78.24	89.24	78.13	77.02	77.38	0.5%	0.3%
Japan	2.73	3.45	3.83	2.84	2.92	3.06	4.6%	0.7%
Malaysia	50.77	66.06	60.85	69.01	68.27	75.08	10.0%	2.3%
Myanmar	6.17	12.29	12.14	17.62	19.10	18.52	-3.0%	6.7%
New Zealand	6.03	3.85	4.60	4.82	5.05	5.00	-1.0%	-1.1%
Pakistan	19.89	30.59	32.19	30.09	29.88	29.87	0.0%	2.4%
Philippines	0.01	3.22	3.64	3.43	3.93	3.89	-1.0%	41.4%
South Korea	0.00	0.53	0.58	0.20	0.16	0.36	121.0%	
Taiwan	0.71	0.52	0.28	0.32	0.28	0.23	-17.3%	-6.5%
Thailand	18.66	22.08	29.50	30.77	30.18	29.63	-1.8%	2.8%
Vietnam	1.34	7.14	9.69	11.39	11.32	10.41	-8.0%	12.8%
Others Asia - Pacific	0.24	0.26	6.07	17.88	17.89	19.29	7.8%	29.3%

	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)	CAGR (2017-2000)
<b>Americas</b>	<b>853.22</b>	<b>870.52</b>	<b>960.17</b>	<b>1,144.39</b>	<b>1,137.65</b>	<b>1,154.03</b>	<b>1.4%</b>	<b>1.8%</b>
Argentina	40.95	47.63	42.20	40.04	42.90	44.54	3.8%	0.5%
Bolivia	4.80	12.24	14.66	21.68	20.66	20.07	-2.8%	8.8%
Brazil	7.24	11.01	14.90	23.71	23.96	27.10	13.1%	8.1%
Canada	176.99	183.89	157.98	166.01	174.22	184.44	5.9%	0.2%
Chile	1.91	1.92	1.85	1.01	1.21	1.23	1.4%	-2.6%
Colombia	6.51	7.30	11.24	12.38	11.43	11.42	0.0%	3.4%
Cuba	0.54	0.70	1.02	1.18	1.12	1.12	-0.1%	4.4%
Ecuador	0.00	0.33	0.51	0.67	0.71	0.62	-12.6%	
Mexico	39.83	45.88	50.80	41.00	36.31	30.88	-14.9%	-1.5%
Peru	0.59	1.94	9.10	15.14	16.77	18.77	12.0%	22.6%
Trinidad and Tobago	14.54	31.61	42.75	38.16	34.54	35.36	2.4%	5.4%
United States	533.21	502.92	590.28	759.54	748.39	753.51	0.7%	2.1%
Venezuela	26.07	23.11	22.86	23.84	25.42	24.95	-1.8%	-0.3%
Others Americas	0.04	0.03	0.03	0.02	0.02	0.02	-5.9%	-4.0%

(\*) Data source: the original data are from *IEA Extended Balances* © OECD/International Energy Agency, 2018. Data have been converted by Eni using a unified gross calorific value of 39 MJ/cm.

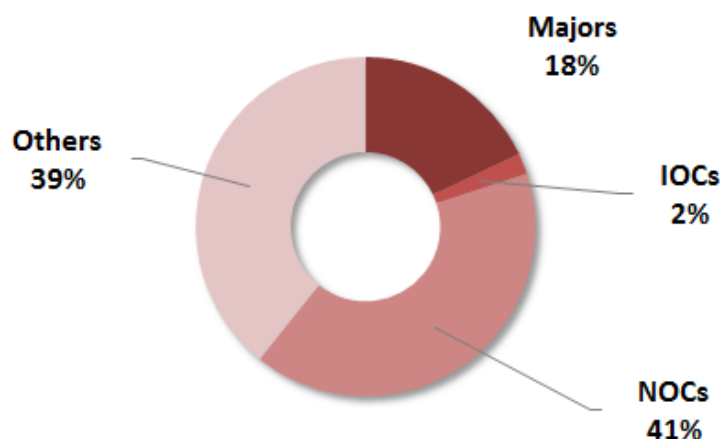
# Natural Gas - Supply and Demand

## Production

Cluster of Companies<sup>(\*)</sup>

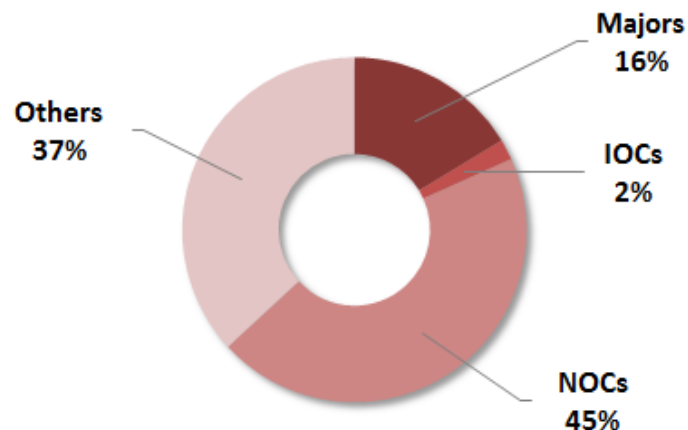
2000

World: 2,463.99 billion cubic metres



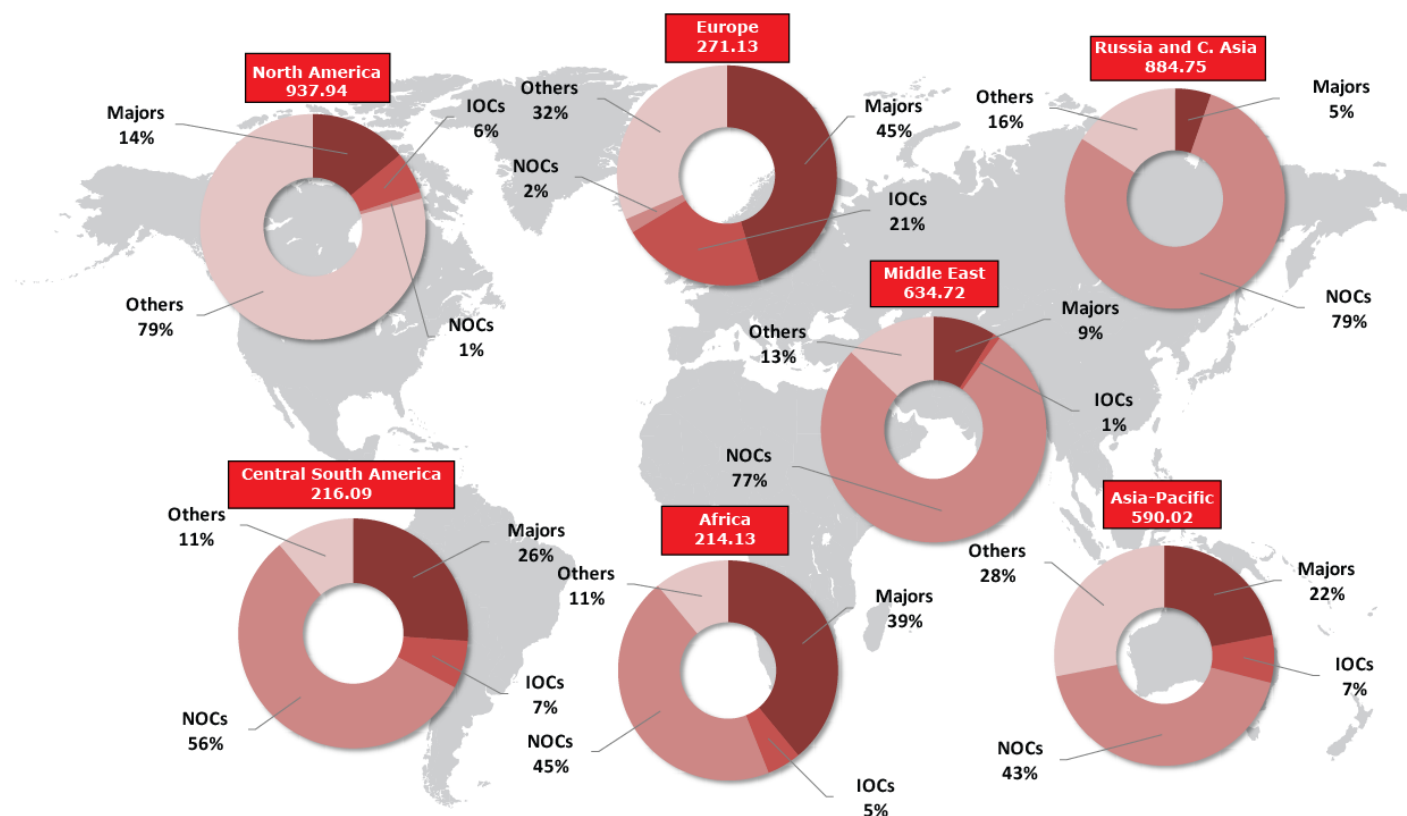
2017

World: 3,748.78 billion cubic metres



2017

(billion cubic metres)



<sup>(\*)</sup> **Majors:** ExxonMobil, BP, Shell, Chevron, Total, Eni, Equinor, ConocoPhillips, Anadarko, Marathon Oil, Apache.

**IOCs:** BG, BHP Billiton, OMV, Repsol, Woodside Petroleum.

**NOCs:** ADNOC, Bahrain NOC, Bashneft, CNOOC, CNPC-PetroChina, CPC Taiwan, Dubai Petroleum, Ecopetrol, EGPC, Gazprom, INOC, Israel NOC, KazMunaiGaz, KNOC, KPC, Libyan NOC, Lukoil, MEDCO Energy, MOGE, Morocco NOC, Mubadala - Abu Dhabi, NIOC, NNPC, Novatek, Oil India, ONGC, Pakistan Oil Field, Pakistan Petroleum, PDO, PdVSA, Pemex, Pertamina, Petrobras, Petronas, PetroVietnam, PGNiG, PTTEP, QP, Rosneft, Saudi Aramco, Sinopec, SOCAR Azerbaijan, Sonangol, Sonatrach, Surgutneftegas, Syria Petroleum, Tatneft, Turkmenogas, Uzbekneftegas, YPF.



# Natural Gas - Supply and Demand

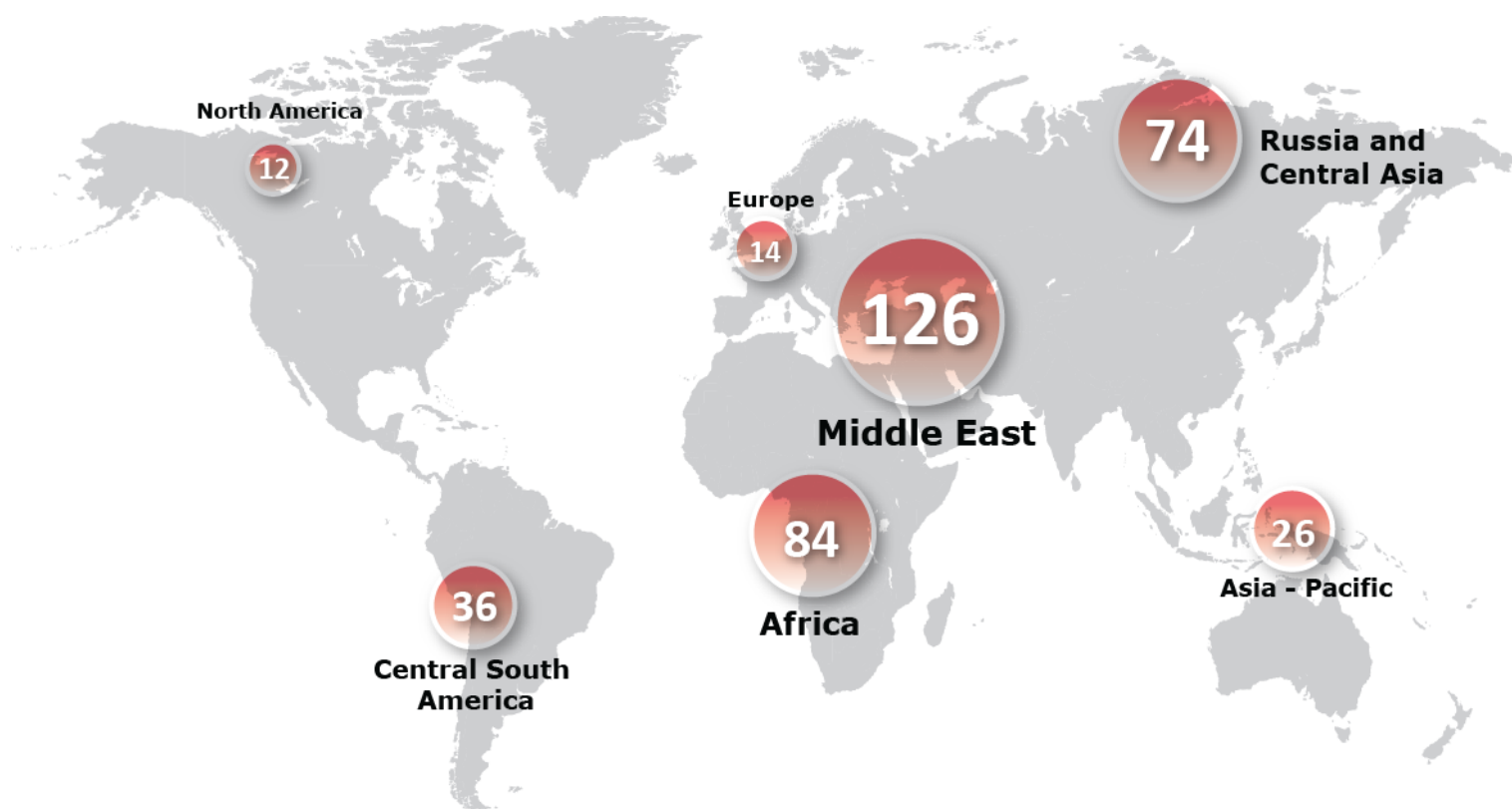
Reserves/Production Ratio

Areas and Aggregates<sup>(\*)</sup>  
(years)

	2000	2005	2010	2015	2016	2017
Europe	26	20	18	16	15	14
Russia and Central Asia	76	69	77	79	78	74
Middle East	302	240	168	134	130	126
Africa	99	76	70	88	88	84
Asia - Pacific	41	36	33	29	27	26
Americas	17	17	19	16	17	16
- North America	9	11	14	12	12	12
- Central South America	53	39	37	36	37	36
<b>World</b>	<b>64</b>	<b>62</b>	<b>60</b>	<b>56</b>	<b>56</b>	<b>54</b>
European Union	14	12	11	11	10	10
MENA	218	176	138	120	117	112
OECD	7	5	4	3	3	3
NON OECD	109	97	91	86	86	82
OPEC	240	210	166	137	132	129
NON OPEC	40	36	37	37	37	35

## Reserves/Production Ratio (2017)

World: 54 years



<sup>(\*)</sup> Data source: Eni's calculations. The original data are from Enerdata *Global Energy Market & CO<sub>2</sub> Data*, IEA *Extended Balances* © OECD/ International Energy Agency, 2018 and other official data sources.

# Natural Gas - Supply and Demand

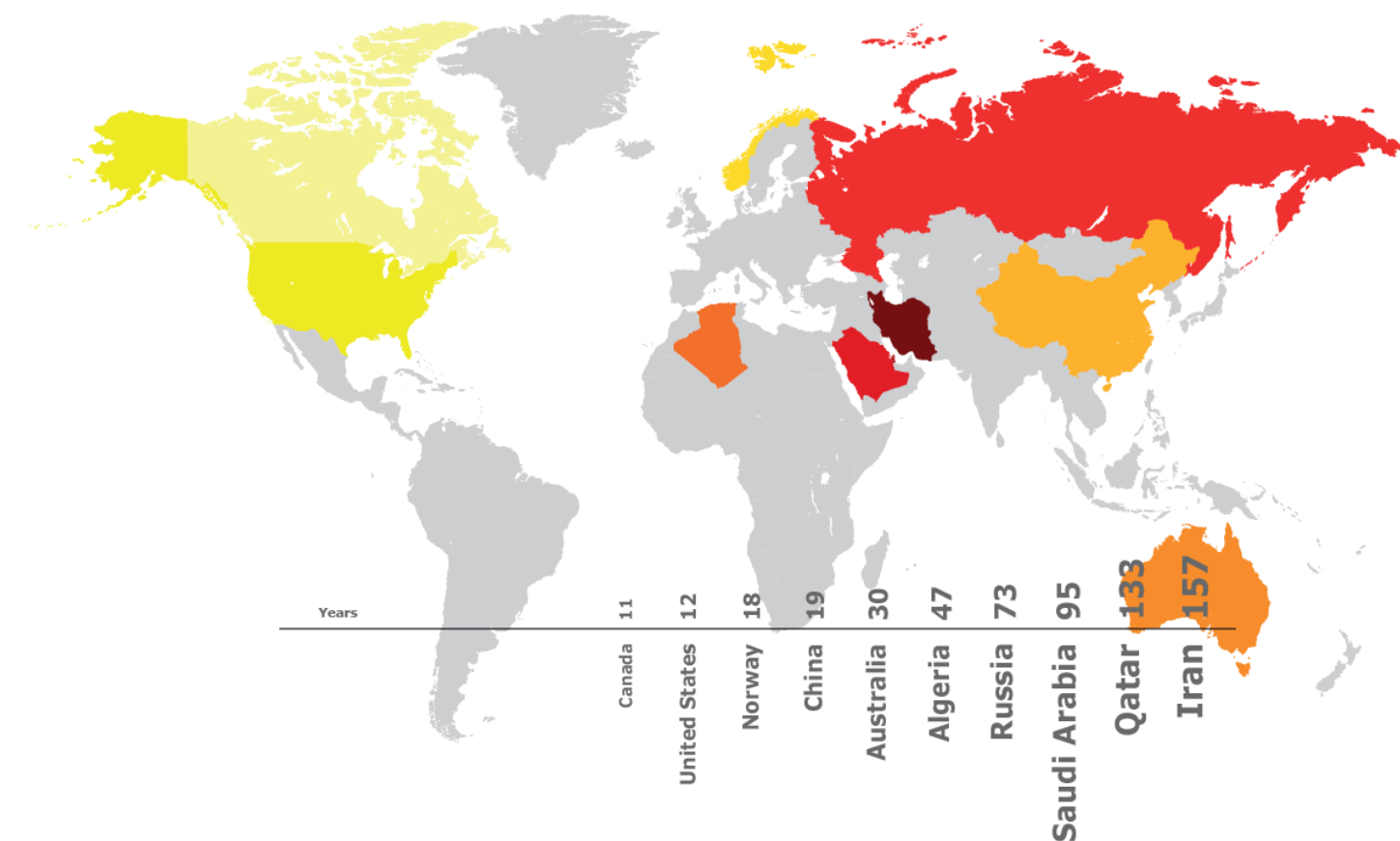
Reserves/Production Ratio

## The World Top 10 Producers Ranked/Production Ratio<sup>(\*)</sup>

(years)

	2000	2005	2010	2015	2016	2017
Iran	437	277	228	180	167	157
Qatar	556	539	197	137	134	133
Saudi Arabia	172	126	112	101	97	95
Russia	78	73	71	80	79	73
Algeria	54	50	52	53	47	47
Australia	65	65	71	48	37	30
China	47	34	23	20	20	19
Norway	70	35	24	20	20	18
United States	9	12	15	11	12	12
Canada	10	9	13	13	12	11

## The World Top 10 (2017)



<sup>(\*)</sup> Data source: Eni's calculations. The original data are from Enerdata *Global Energy Market & CO<sub>2</sub> Data*, IEA *Extended Balances* © OECD/ International Energy Agency, 2018 and other official data sources.

# Natural Gas - Supply and Demand

Reserves/Production Ratio

## Countries<sup>(\*)</sup>

(years)

	2000	2005	2010	2015	2016	2017
<b>Europe</b>	<b>26</b>	<b>20</b>	<b>18</b>	<b>16</b>	<b>15</b>	<b>14</b>
Austria	14	13	9	7	7	6
Croatia	18	13	9	6	6	6
Denmark	16	11	12	16	16	14
France	4	6	6	386	405	539
Germany	14	10	7	6	5	5
Hungary	11	8	5	5	4	4
Ireland	30	45	94	237	10	9
Italy <sup>(**)</sup>	12	10	8	7	7	8
Netherlands	27	21	16	18	16	17
Norway	70	35	24	20	20	18
Poland	30	23	16	14	14	14
Romania	15	12	11	10	11	9
Serbia and Montenegro	34	35	23	12	13	14
Slovakia	43	39	50	50	50	39
Slovenia	0	0	140	279	210	120
Spain	29	20	54	54	59	81
Turkey	6	9	9	17	17	17
Ukraine	58	55	53	18	17	16
United Kingdom	6	5	4	5	4	4

	2000	2005	2010	2015	2016	2017
<b>Russia and Central Asia</b>	<b>76</b>	<b>69</b>	<b>77</b>	<b>79</b>	<b>78</b>	<b>74</b>
Russia	78	73	71	80	79	73
Azerbaijan	234	230	79	67	68	70
Georgia	15	56	168	42	70	70
Kazakhstan	202	101	66	48	45	45
Kyrgyzstan	31	40	44	17	19	19
Tajikistan	26	38	44	140	140	210
Turkmenistan	59	44	227	121	127	127
Uzbekistan	32	30	28	26	29	28

	2000	2005	2010	2015	2016	2017
<b>Middle East</b>	<b>302</b>	<b>240</b>	<b>168</b>	<b>134</b>	<b>130</b>	<b>126</b>
Bahrain	13	9	7	6	6	6
Iran	437	277	228	180	167	157
Iraq	1,013	1,787	632	466	513	492
Israel	4,715	29	67	26	51	52
Jordan	28	28	37	50	58	61
Kuwait	166	131	156	108	106	107
Oman	79	31	18	21	20	20
Qatar	556	539	197	137	134	133
Saudi Arabia	172	126	112	101	97	95
Syria	44	48	33	69	79	79
United Arab Emirates	165	127	123	105	103	102
Yemen			76	163	932	932

<sup>(\*)</sup> Data source: Eni's calculations. The original data are from Enerdata *Global Energy Market & CO<sub>2</sub> Data*, IEA *Extended Balances* © OECD/ International Energy Agency, 2018 and other official data sources.

# Natural Gas - Supply and Demand

Reserves/Production Ratio

## Countries<sup>(\*)</sup>

(years)

	2000	2005	2010	2015	2016	2017
<b>Africa</b>	<b>99</b>	<b>76</b>	<b>70</b>	<b>88</b>	<b>88</b>	<b>84</b>
Algeria	54	50	52	53	47	47
Angola	484	426	430	421	264	140
Cameroon			502	311	286	284
Côte d'Ivoire	19	21	17	11	9	9
Egypt	83	38	40	56	63	51
Gabon	271	206	87	47	48	48
Ghana				77	87	91
Libya	229	135	91	133	156	170
Morocco	66	74	56	13	14	14
Mozambique		27	23	580	568	545
Nigeria	338	218	163	124	139	134
Senegal		659	399	84	88	88
South Africa	10	14	8	2	3	3
Tanzania		70	48	42	45	45
Tunisia	35	16	18	22	24	25

	2000	2005	2010	2015	2016	2017
<b>Asia - Pacific</b>	<b>41</b>	<b>36</b>	<b>33</b>	<b>29</b>	<b>27</b>	<b>26</b>
Australia	65	65	71	48	37	30
Bangladesh	35	32	18	15	21	21
Brunei	32	28	25	23	23	20
China	47	34	23	20	20	19
India	30	38	24	42	42	43
Indonesia	36	34	34	37	37	36
Japan	15	11	10	11	10	9
Malaysia	43	36	38	41	36	33
Myanmar	79	56	60	27	19	19
New Zealand	9	16	11	12	10	10
Pakistan	34	28	25	24	24	23
Philippines		31	24	21	18	17
South Korea		6	2	5	7	3
Taiwan	8	8	13	9	10	13
Thailand	19	14	10	7	6	6
Vietnam	127	31	24	18	18	19

	2000	2005	2010	2015	2016	2017
<b>Americas</b>	<b>17</b>	<b>17</b>	<b>19</b>	<b>16</b>	<b>17</b>	<b>16</b>
Argentina	19	9	9	9	8	8
Bolivia	141	58	19	14	15	15
Brazil	31	28	28	18	16	14
Canada	10	9	13	13	12	11
Chile	7	4	3	0	0	0
Colombia	20	15	14	10	10	10
Cuba	33	24	14	8	7	6
Ecuador		27	14	16	15	18
Mexico	21	9	7	6	6	7
Peru	416	174	39	26	27	25
Trinidad and Tobago	38	17	9	8	8	7
United States	9	12	15	11	12	12
Venezuela	159	187	242	239	226	229

<sup>(\*)</sup> Data source: Eni's calculations. The original data are from Enerdata *Global Energy Market & CO<sub>2</sub> Data*, IEA *Extended Balances* © OECD/ International Energy Agency, 2018 and other official data sources.

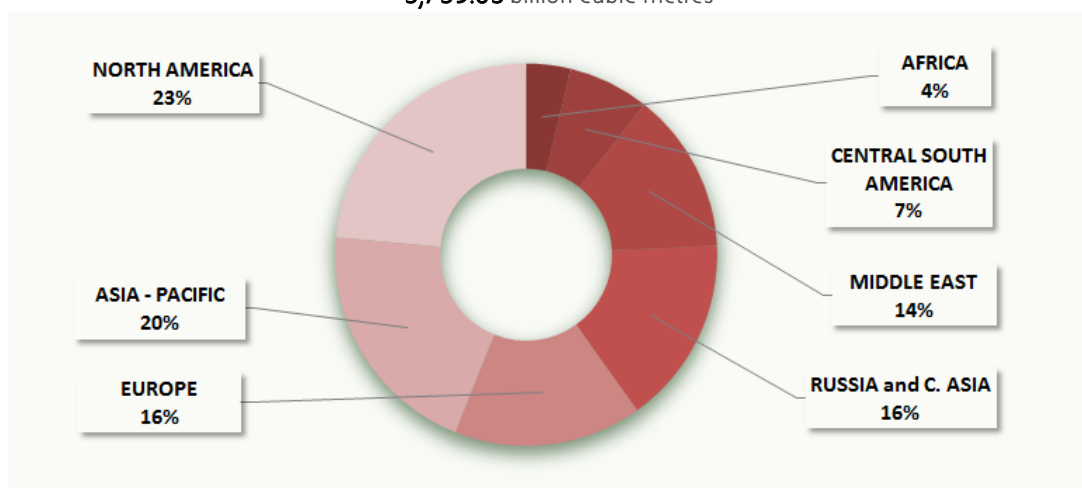
### Areas and Aggregates<sup>(\*)</sup>

(billion cubic metres)

	2000	2005	2010	2015	2016	2017	$\Delta$ y/y (2017-2016)	CAGR (2017-2000)
Europe	591.29	670.51	675.37	539.46	566.96	594.97	4.9%	0.0%
Russia and Central Asia	460.80	510.54	561.90	549.43	557.74	593.15	6.3%	1.5%
Middle East	173.49	255.10	371.48	476.38	495.42	509.28	2.8%	6.5%
Africa	56.30	88.01	105.21	127.25	137.76	141.02	2.4%	5.6%
Asia - Pacific	306.63	408.86	580.02	693.18	722.20	763.59	5.7%	5.5%
Americas	883.47	881.54	969.45	1,126.06	1,140.56	1,137.01	-0.3%	1.5%
- North America	742.04	701.37	757.29	875.75	891.94	880.35	-1.3%	1.0%
- Central South America	141.43	180.17	212.16	250.31	248.63	256.67	3.2%	3.6%
<b>World</b>	<b>2,471.98</b>	<b>2,814.56</b>	<b>3,263.44</b>	<b>3,511.77</b>	<b>3,620.64</b>	<b>3,739.03</b>	<b>3.3%</b>	<b>2.5%</b>
European Union	472.42	531.01	533.98	426.78	456.53	478.01	4.7%	0.1%
MENA	219.06	325.17	455.65	572.94	602.67	620.81	3.0%	6.3%
OECD	1,387.34	1,448.50	1,578.55	1,640.13	1,694.61	1,710.98	1.0%	1.2%
NON OECD	1,084.64	1,366.06	1,684.88	1,871.65	1,926.03	2,028.05	5.3%	3.7%
OPEC	211.65	292.06	393.89	509.02	528.16	537.94	1.9%	5.6%
NON OPEC	2,260.33	2,522.50	2,869.55	3,002.75	3,092.48	3,201.09	3.5%	2.1%

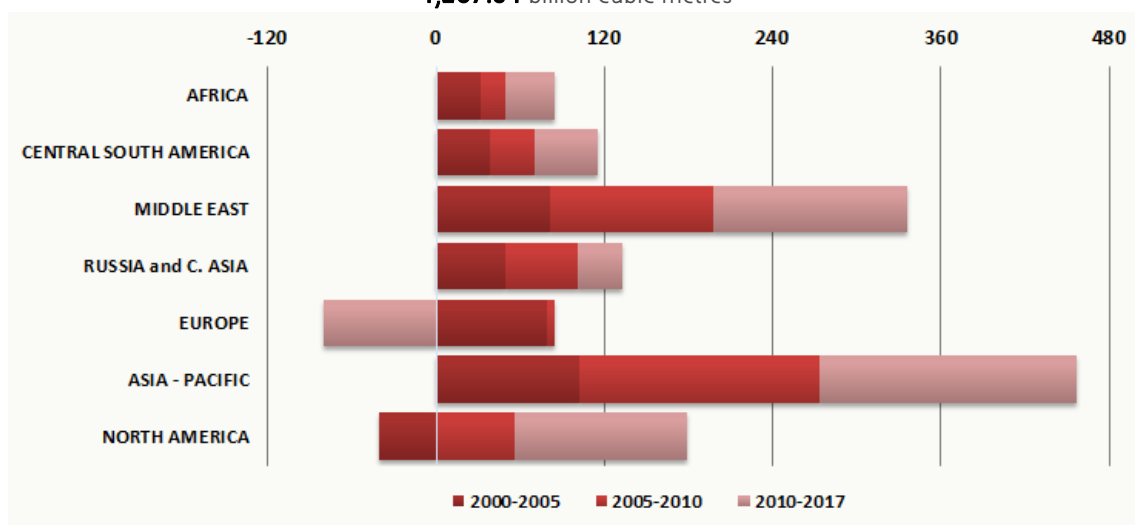
### World Natural Gas Consumption (2017)

3,739.03 billion cubic metres



### World Natural Gas Consumption Growth (2000-2017)

1,267.04 billion cubic metres



<sup>(\*)</sup> Data source: Eni's calculations. The original data are from IEA Extended Balances © OECD/International Energy Agency, 2018. Data have been converted by Eni using a unified gross calorific value of 39 MJ/cm.

# Natural Gas - Supply and Demand

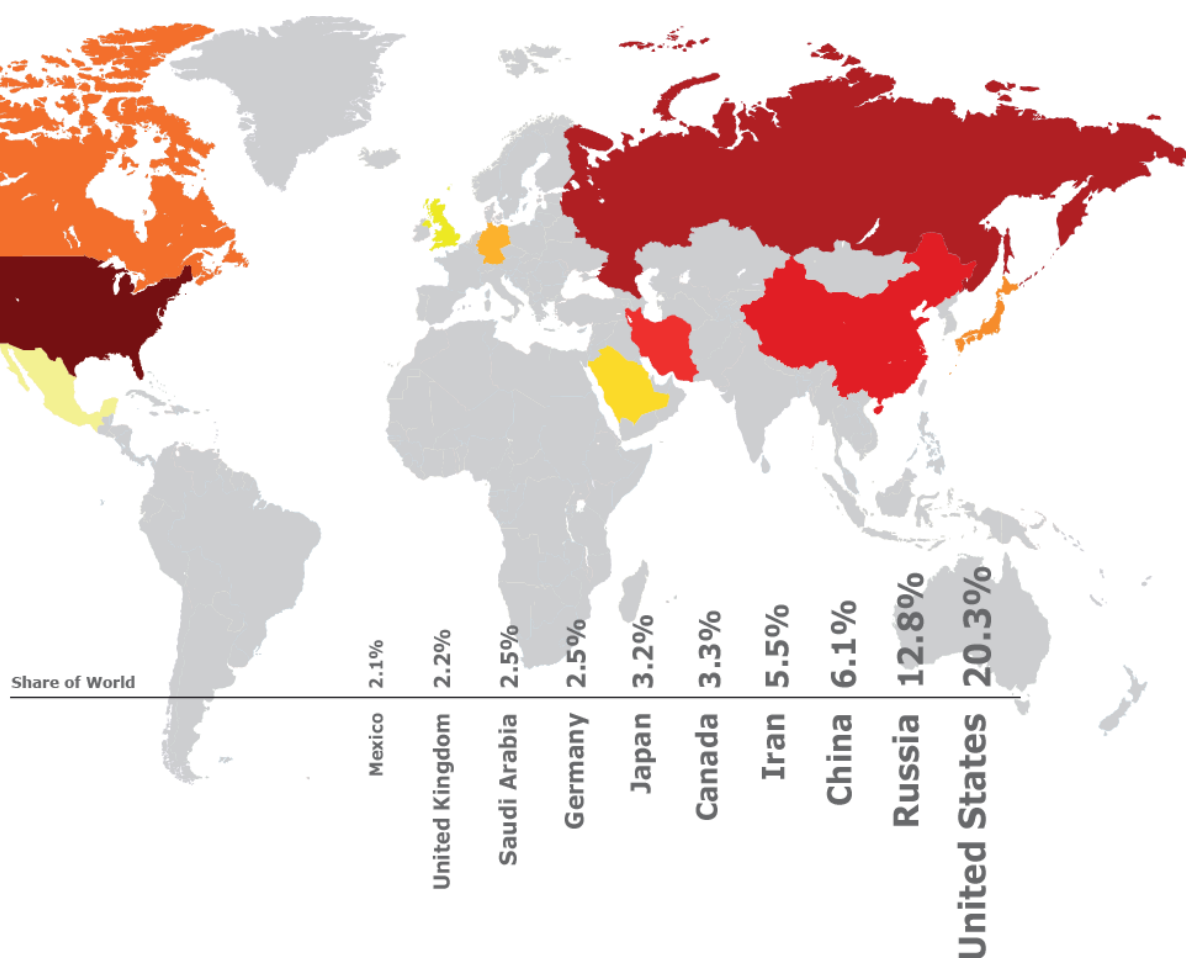
## Consumption

### The World Top 10 Consumers (\*)

(billion cubic metres)

	2000	2005	2010	2015	2016	2017	$\Delta$ y/y (2017-2016)	CAGR (2017-2000)
United States	653.45	605.11	663.40	771.60	778.89	757.98	-2.7%	0.9%
Russia	380.58	417.16	457.57	434.55	442.98	479.50	8.2%	1.4%
China	24.76	46.28	106.63	189.20	203.74	227.58	11.7%	13.9%
Iran	62.79	100.02	145.72	185.28	198.47	206.34	4.0%	7.2%
Canada	88.59	96.26	93.89	104.15	113.05	122.37	8.2%	1.9%
Japan	78.30	84.29	102.45	119.55	121.32	120.37	-0.8%	2.6%
Germany	85.72	92.79	90.55	77.73	83.90	92.30	10.0%	0.4%
Saudi Arabia	36.72	54.84	71.46	85.03	88.48	91.76	3.7%	5.5%
United Kingdom	104.27	101.97	101.19	73.61	82.80	81.09	-2.1%	-1.5%
Mexico	42.33	55.01	64.71	77.14	78.96	80.25	1.6%	3.8%
<b>The World Top 10</b>	<b>1,557.50</b>	<b>1,653.72</b>	<b>1,897.58</b>	<b>2,117.85</b>	<b>2,192.58</b>	<b>2,259.52</b>	<b>3.1%</b>	<b>2.2%</b>
Rest of the World	914.48	1,160.84	1,365.86	1,393.92	1,428.07	1,479.50	3.6%	2.9%
<b>World</b>	<b>2,471.98</b>	<b>2,814.56</b>	<b>3,263.44</b>	<b>3,511.77</b>	<b>3,620.64</b>	<b>3,739.03</b>	<b>3.3%</b>	<b>2.5%</b>

### The World Top 10 (2017)



(\*) Data source: the original data are from *IEA Extended Balances* © OECD/International Energy Agency, 2018. Data have been converted by Eni using a unified gross calorific value of 39 MJ/cm.

# Natural Gas - Supply and Demand

## Consumption

### Countries<sup>(\*)</sup>

(billion cubic metres)

	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)	CAGR (2017-2000)
<b>Europe</b>	<b>591.29</b>	<b>670.51</b>	<b>675.37</b>	<b>539.46</b>	<b>566.96</b>	<b>594.97</b>	<b>4.9%</b>	<b>0.0%</b>
Albania	0.01	0.01	0.01	0.03	0.04	0.04	2.9%	8.5%
Austria	7.86	9.65	9.69	8.20	8.57	9.30	8.5%	1.0%
Belarus	16.98	20.18	21.60	18.89	18.77	19.04	1.4%	0.7%
Belgium	15.95	17.59	19.98	16.66	17.06	17.15	0.6%	0.4%
Bosnia Herzegovina	0.24	0.36	0.24	0.21	0.22	0.24	7.6%	0.0%
Bulgaria	3.50	3.35	2.74	3.10	3.21	3.30	2.8%	-0.3%
Croatia	2.64	2.83	3.14	2.48	2.59	3.05	17.9%	0.9%
Czech Republic	8.95	9.19	9.63	7.73	8.37	8.59	2.6%	-0.2%
Denmark	5.31	5.25	5.28	3.40	3.43	3.27	-4.8%	-2.8%
Estonia	0.79	0.95	0.67	0.47	0.51	0.49	-4.9%	-2.8%
Finland	4.09	4.30	4.58	2.67	2.46	2.28	-7.1%	-3.4%
France	42.67	48.94	50.84	41.80	45.68	45.89	0.5%	0.4%
Germany	85.72	92.79	90.55	77.73	83.90	92.30	10.0%	0.4%
Greece	2.03	2.81	3.86	3.19	4.16	5.02	20.5%	5.5%
Hungary	11.52	14.43	11.71	8.94	9.58	10.19	6.4%	-0.7%
Ireland	4.10	4.14	5.60	4.48	5.06	5.15	1.7%	1.3%
Italy	69.12	84.29	81.19	65.98	69.29	73.43	6.0%	0.4%
Latvia	1.30	1.62	1.74	1.31	1.32	1.21	-8.5%	-0.4%
Lithuania	2.46	2.95	2.97	2.47	2.20	2.47	12.4%	0.0%
Luxembourg	0.80	1.40	1.43	0.92	0.85	0.83	-2.3%	0.2%
Macedonia	0.06	0.08	0.11	0.13	0.21	0.27	29.0%	8.8%
Malta	0.00	0.00	0.00	0.00	0.00	0.30		
Moldova	2.54	2.85	2.76	2.54	2.56	2.36	-8.1%	-0.4%
Netherlands	41.76	42.14	47.80	34.15	35.82	37.04	3.4%	-0.7%
Norway	4.94	4.86	7.49	7.29	6.60	4.83	-26.9%	-0.1%
Poland	11.88	14.60	15.28	16.43	17.46	18.38	5.3%	2.6%
Portugal	2.43	4.47	5.36	4.86	5.13	6.70	30.6%	6.2%
Romania	16.32	16.61	12.87	10.64	10.75	11.73	9.2%	-1.9%
Serbia	1.83	2.32	2.21	2.09	2.26	2.52	11.8%	1.9%
Slovakia	6.89	7.02	5.97	4.63	4.65	4.64	-0.1%	-2.3%
Slovenia	0.99	1.11	1.03	0.79	0.84	0.88	4.7%	-0.7%
Spain	18.16	35.60	37.14	29.27	29.87	32.54	8.9%	3.5%
Sweden	0.93	1.01	1.75	0.86	0.98	0.80	-17.8%	-0.8%
Switzerland	2.90	3.32	3.59	3.40	3.57	3.59	0.4%	1.3%
Turkey	15.08	27.19	37.45	46.98	45.65	52.64	15.3%	7.6%
Ukraine	74.29	78.34	65.91	31.11	30.54	31.44	2.9%	-4.9%
United Kingdom	104.27	101.97	101.19	73.61	82.80	81.09	-2.1%	-1.5%
	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)	CAGR (2017-2000)
<b>Russia and Central Asia</b>	<b>460.80</b>	<b>510.54</b>	<b>561.90</b>	<b>549.43</b>	<b>557.74</b>	<b>593.15</b>	<b>6.3%</b>	<b>1.5%</b>
Russia	380.58	417.16	457.57	434.55	442.98	479.50	8.2%	1.4%
Armenia	1.34	1.60	1.54	2.10	2.19	2.32	6.2%	3.3%
Azerbaijan	5.76	9.66	9.37	11.43	11.21	11.24	0.3%	4.0%
Georgia	1.14	1.27	1.21	2.41	2.26	2.30	1.8%	4.2%
Kazakhstan	7.84	14.87	26.62	32.76	34.27	34.40	0.4%	9.1%
Kyrgyzstan	0.68	0.74	0.29	0.27	0.29	0.29	0.0%	-5.0%
Tajikistan	0.75	0.64	0.19	0.00	0.00	0.00	-33.3%	-28.7%
Turkmenistan	13.01	17.00	20.69	25.47	25.47	23.75	-6.7%	3.6%
Uzbekistan	49.71	47.61	44.41	40.44	39.07	39.35	0.7%	-1.4%
	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)	CAGR (2017-2000)
<b>Middle East</b>	<b>173.49</b>	<b>255.10</b>	<b>371.48</b>	<b>476.38</b>	<b>495.42</b>	<b>509.28</b>	<b>2.8%</b>	<b>6.5%</b>
Bahrain	8.17	10.04	12.61	14.51	14.35	14.74	2.7%	3.5%
Iran	62.79	100.02	145.72	185.28	198.47	206.34	4.0%	7.2%
Iraq	3.07	1.77	5.00	6.77	7.45	7.61	2.2%	5.5%
Israel	0.01	1.57	5.25	8.22	9.39	9.83	4.7%	50.4%
Jordan	0.25	1.65	2.73	2.32	4.04	4.19	3.5%	17.9%
Kuwait	9.36	11.99	14.15	20.37	21.68	21.64	-0.2%	5.1%
Lebanon	0.00	0.00	0.25	0.00	0.00	0.00		
Oman	6.43	8.88	17.78	25.15	25.16	25.32	0.6%	8.4%
Qatar	11.30	16.43	27.36	51.85	50.08	51.54	2.9%	9.3%
Saudi Arabia	36.72	54.84	71.46	85.03	88.48	91.76	3.7%	5.5%
Syria	5.51	5.90	9.31	4.16	3.63	3.62	0.0%	-2.4%
United Arab Emirates	29.88	42.02	58.88	71.74	72.18	72.18	0.0%	5.3%
Yemen	0.00	0.00	0.98	0.99	0.51	0.51	0.0%	

<sup>(\*)</sup> Data source: the original data are from *IEA Extended Balances* © OECD/International Energy Agency, 2018. Data have been converted by Eni using a unified gross calorific value of 39 MJ/cm.



# Natural Gas - Supply and Demand

## Consumption

### Countries<sup>(\*)</sup>

(billion cubic metres)

	2000	2005	2010	2015	2016	2017	$\Delta$ y/y (2017-2016)	CAGR (2017-2000)
<b>Africa</b>	<b>56.30</b>	<b>88.01</b>	<b>105.19</b>	<b>127.25</b>	<b>137.76</b>	<b>141.02</b>	<b>2.4%</b>	<b>5.6%</b>
Algeria	20.09	24.49	27.82	41.06	41.35	41.05	-0.7%	4.3%
Angola	0.56	0.63	0.72	0.75	0.78	0.72	-7.5%	1.5%
Cameroon	0.00	0.00	0.31	0.49	0.53	0.53	0.0%	
Congo	0.00	0.02	0.10	0.27	0.25	0.25	-0.5%	
Côte d'Ivoire	1.51	1.49	1.58	2.01	2.25	2.25	-0.1%	2.4%
Egypt	17.22	35.77	42.72	43.87	53.47	58.61	9.6%	7.5%
Gabon	0.12	0.15	0.32	0.53	0.53	0.53	-0.2%	9.1%
Ghana	0.00	0.00	0.42	1.27	0.74	0.74	0.0%	
Libya	4.95	5.68	6.88	4.38	4.97	4.14	-16.7%	-1.0%
Morocco	0.05	0.45	0.68	1.21	1.23	1.22	-0.8%	21.4%
Mozambique	0.00	0.02	0.08	0.91	0.80	0.90	13.0%	47.7%
Nigeria	6.87	10.75	10.53	16.92	16.60	15.39	-7.3%	4.9%
Senegal	0.00	0.02	0.03	0.02	0.02	0.02	0.0%	18.9%
South Africa	1.67	3.29	4.62	5.20	5.28	5.42	2.8%	7.2%
Tanzania	0.00	0.40	0.77	0.87	0.83	0.83	-0.1%	
Tunisia	3.26	3.69	6.07	6.03	6.22	6.50	4.5%	4.1%
Others Africa	0.00	1.16	1.54	1.45	1.89	1.90	0.6%	54.3%
	2000	2005	2010	2015	2016	2017	$\Delta$ y/y (2017-2016)	CAGR (2017-2000)
<b>Asia - Pacific</b>	<b>306.63</b>	<b>408.86</b>	<b>580.02</b>	<b>693.18</b>	<b>722.20</b>	<b>763.59</b>	<b>5.7%</b>	<b>5.5%</b>
Australia	23.00	22.63	33.93	38.45	41.21	41.21	0.0%	3.5%
Bangladesh	8.81	12.90	19.84	25.21	27.56	27.55	0.0%	6.9%
Brunei	2.21	2.19	3.19	2.55	2.78	3.65	31.2%	3.0%
China	24.76	46.28	106.63	189.20	203.74	227.58	11.7%	13.9%
Hong Kong	2.93	2.61	3.74	3.17	3.25	3.24	-0.3%	0.6%
India	27.52	37.95	64.90	51.56	56.11	57.49	2.4%	4.4%
Indonesia	31.69	34.92	46.32	45.17	46.64	47.62	2.1%	2.4%
Japan	78.30	84.29	102.45	119.55	121.32	120.37	-0.8%	2.6%
Malaysia	29.50	38.02	37.22	44.78	42.67	47.13	10.5%	2.8%
Myanmar	1.43	2.73	1.53	3.61	4.21	4.34	3.0%	6.8%
New Zealand	6.04	3.85	4.45	4.88	5.02	5.08	1.1%	-1.0%
Pakistan	19.89	30.60	32.18	30.07	29.88	34.84	16.6%	3.4%
Philippines	0.01	3.22	3.64	3.43	3.93	3.89	-1.0%	41.4%
Singapore	1.33	6.65	8.61	10.19	10.44	10.96	5.0%	13.2%
South Korea	20.29	32.66	46.09	46.94	49.29	51.55	4.6%	5.6%
Taiwan	6.63	10.57	15.85	17.65	18.43	21.45	16.4%	7.2%
Thailand	20.72	30.93	39.33	45.04	44.07	44.90	1.9%	4.7%
Vietnam	1.34	5.60	9.69	11.39	11.32	10.41	-8.0%	12.8%
Others Asia - Pacific	0.24	0.26	0.44	0.33	0.33	0.33	-0.4%	1.8%
	2000	2005	2010	2015	2016	2017	$\Delta$ y/y (2017-2016)	CAGR (2017-2000)
<b>Americas</b>	<b>883.47</b>	<b>881.54</b>	<b>969.45</b>	<b>1,126.06</b>	<b>1,140.56</b>	<b>1,137.01</b>	<b>-0.3%</b>	<b>1.5%</b>
Argentina	36.31	42.73	45.32	51.24	53.27	54.90	3.1%	2.5%
Bolivia	2.80	2.35	2.98	4.10	4.52	4.63	2.5%	3.0%
Brazil	9.44	19.95	27.47	42.01	35.61	37.75	6.0%	8.5%
Canada	88.59	96.26	93.89	104.15	113.05	122.37	8.2%	1.9%
Chile	6.21	8.11	5.33	4.75	5.19	5.35	3.2%	-0.9%
Colombia	6.51	7.30	9.82	12.04	11.44	11.43	-0.1%	3.4%
Cuba	0.54	0.70	1.02	1.18	1.12	1.12	-0.1%	4.4%
Dominican Republic	0.00	0.28	0.82	1.16	1.04	1.16	12.0%	
Ecuador	0.00	0.33	0.51	0.67	0.71	0.62	-12.6%	
Jamaica	0.00	0.00	0.00	0.00	0.00	0.20		
Mexico	42.33	55.01	64.71	77.14	78.96	80.25	1.6%	3.8%
Peru	0.59	1.94	6.56	9.41	9.90	12.25	23.8%	19.5%
Trinidad and Tobago	10.22	17.54	21.90	20.68	19.69	20.66	4.9%	4.2%
United States	653.45	605.11	663.40	771.60	778.89	757.98	-2.7%	0.9%
Uruguay	0.04	0.11	0.08	0.05	0.06	0.06	0.0%	3.1%
Venezuela	26.07	23.11	24.86	24.21	25.42	24.95	-1.8%	-0.3%
Others Americas	0.38	0.71	0.80	1.68	1.71	1.32	-22.8%	7.6%

<sup>(\*)</sup> Data source: the original data are from IEA *Extended Balances* © OECD/International Energy Agency, 2018. Data have been converted by Eni using a unified gross calorific value of 39 MJ/cm.



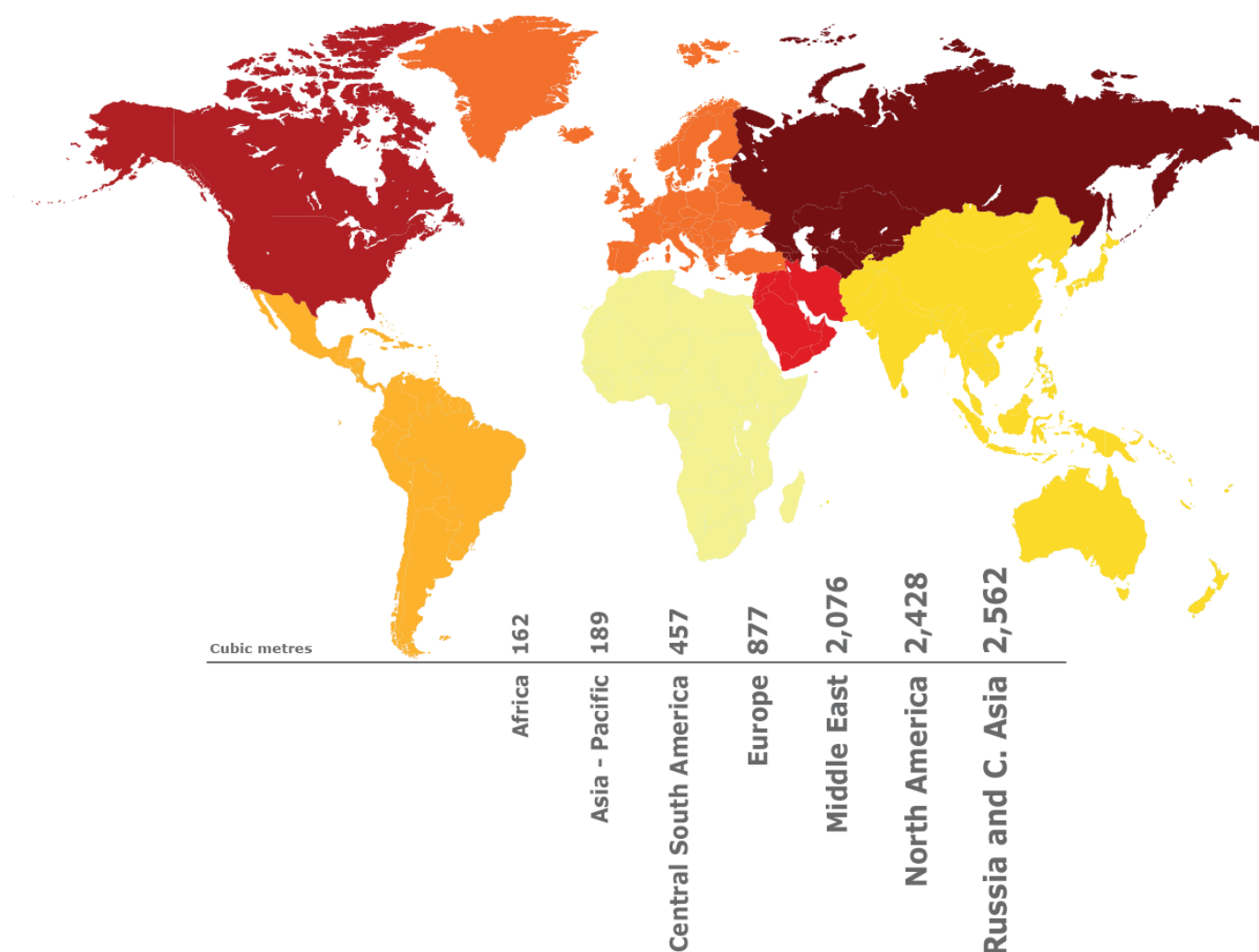
# Natural Gas - Supply and Demand

Per Capita Consumption

Areas and Aggregates<sup>(\*)</sup>  
(cubic metres)

	2000	2005	2010	2015	2016	2017
Europe	921	1,028	1,017	801	839	877
Russia and Central Asia	2,115	2,338	2,526	2,398	2,421	2,562
Middle East	1,034	1,360	1,739	2,011	2,054	2,076
Africa	98	136	144	154	163	162
Asia - Pacific	91	114	154	175	181	189
Americas	1,120	1,055	1,099	1,217	1,222	1,207
- North America	2,367	2,134	2,201	2,451	2,478	2,428
- Central South America	298	381	415	457	448	457
<b>World</b>	<b>429</b>	<b>460</b>	<b>503</b>	<b>512</b>	<b>523</b>	<b>534</b>
European Union	969	1,072	1,061	841	897	937
MENA	700	945	1,189	1,355	1,400	1,418
OECD	1,209	1,219	1,282	1,293	1,328	1,333
NON OECD	235	277	321	335	341	355
OPEC	640	791	946	1,088	1,104	1,101
NON OPEC	416	439	473	470	480	492

Per Capita Consumption (2017)



<sup>(\*)</sup> Data source: Eni's calculations. The original data are from IEA Extended Balances © OECD/International Energy Agency, 2018 and IHS Global Insight.

# Natural Gas - Supply and Demand

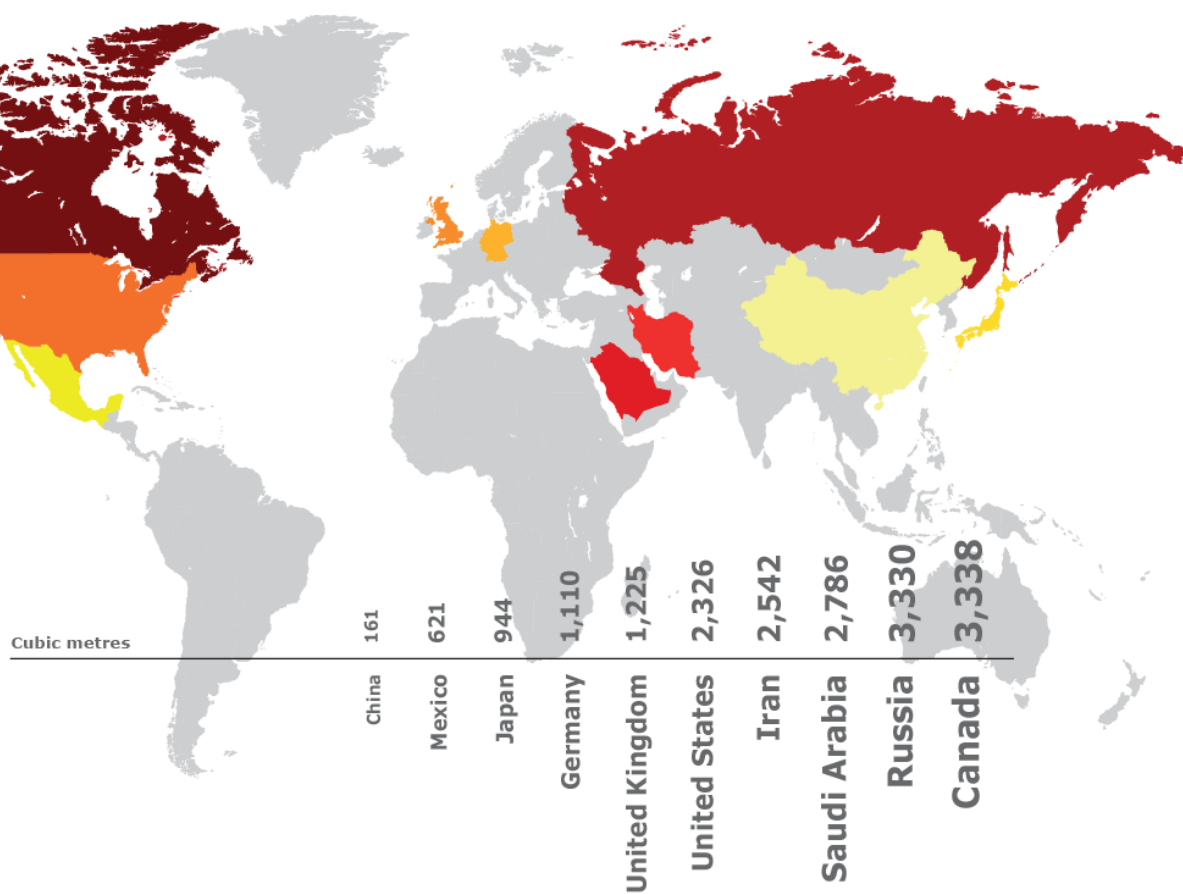
## Per Capita Consumption

### The World Top 10 Consumers Ranked by Per Capita Consumption<sup>(\*)</sup>

(cubic metres)

	2000	2005	2010	2015	2016	2017
Canada	2,891	2,989	2,765	2,909	3,122	3,338
Russia	2,600	2,905	3,196	3,020	3,077	3,330
Saudi Arabia	1,768	2,294	2,606	2,694	2,741	2,786
Iran	949	1,420	1,954	2,335	2,472	2,542
United States	2,311	2,041	2,139	2,400	2,406	2,326
United Kingdom	1,769	1,691	1,598	1,126	1,259	1,225
Germany	1,052	1,141	1,128	952	1,017	1,110
Japan	614	657	797	934	950	944
Mexico	416	507	552	613	619	621
China	19	35	78	135	145	161

### The World Top 10 (2017)



<sup>(\*)</sup> Data source: Eni's calculations. The original data are from *IEA Extended Balances* © OECD/International Energy Agency, 2018 and IHS Global Insight.

# Natural Gas - Supply and Demand

## Per Capita Consumption

### Countries<sup>(\*)</sup>

(cubic metres)

	2000	2005	2010	2015	2016	2017
<b>Europe</b>	<b>921</b>	<b>1,028</b>	<b>1,017</b>	<b>801</b>	<b>839</b>	<b>877</b>
Albania	4	4	5	11	15	15
Austria	974	1,169	1,152	945	983	1,065
Belarus	1,709	2,097	2,280	1,991	1,980	2,010
Belgium	1,551	1,667	1,826	1,476	1,502	1,501
Bosnia Herzegovina	63	95	64	60	63	68
Bulgaria	437	435	371	431	449	465
Croatia	595	646	725	586	615	729
Czech Republic	870	896	914	729	789	809
Denmark	994	968	950	598	601	570
Estonia	564	704	504	354	389	371
Finland	789	818	853	487	446	413
France	716	799	807	649	706	706
Germany	1,052	1,141	1,128	952	1,017	1,110
Greece	183	248	337	285	372	449
Hungary	1,127	1,430	1,179	913	982	1,048
Ireland	1,065	983	1,210	952	1,071	1,081
Italy	1,206	1,433	1,359	1,109	1,166	1,237
Latvia	546	719	823	657	670	620
Lithuania	703	883	952	841	756	854
Luxembourg	1,836	3,064	2,812	1,618	1,468	1,415
Macedonia	32	37	54	64	101	130
Malta	0	0	0	0	0	706
Moldova	696	792	774	715	722	664
Netherlands	2,622	2,575	2,865	2,016	2,109	2,174
Norway	1,099	1,048	1,533	1,401	1,257	910
Poland	308	380	399	429	457	482
Portugal	234	424	503	467	495	648
Romania	738	775	630	535	543	596
Serbia	243	312	303	294	320	359
Slovakia	1,276	1,300	1,105	851	854	852
Slovenia	496	555	503	382	405	423
Spain	444	808	794	631	645	702
Sweden	104	111	186	88	99	81
Switzerland	405	448	458	409	425	424
Turkey	238	400	518	600	574	652
Ukraine	1,524	1,674	1,444	694	684	708
United Kingdom	1,769	1,691	1,598	1,126	1,259	1,225

	2000	2005	2010	2015	2016	2017
<b>Russia and Central Asia</b>	<b>2,115</b>	<b>2,338</b>	<b>2,526</b>	<b>2,398</b>	<b>2,421</b>	<b>2,562</b>
Russia	2,600	2,905	3,196	3,020	3,077	3,330
Armenia	435	536	535	720	748	793
Azerbaijan	709	1,131	1,037	1,189	1,153	1,144
Georgia	241	282	286	609	575	587
Kazakhstan	521	957	1,623	1,846	1,905	1,890
Kyrgyzstan	139	145	54	47	48	47
Tajikistan	120	93	25	0	0	0
Turkmenistan	2,880	3,576	4,067	4,577	4,498	4,125
Uzbekistan	2,001	1,796	1,553	1,305	1,243	1,233

<sup>(\*)</sup> Data source: Eni's calculations. The original data are from IEA *Extended Balances* © OECD/International Energy Agency, 2018 and IHS Global Insight.

# Natural Gas - Supply and Demand

## Per Capita Consumption

### Countries<sup>(\*)</sup>

(cubic metres)

	2000	2005	2010	2015	2016	2017
<b>Middle East</b>	<b>1,034</b>	<b>1,360</b>	<b>1,739</b>	<b>2,011</b>	<b>2,054</b>	<b>2,076</b>
Bahrain	12,289	11,293	10,161	10,577	10,071	9,874
Iran	949	1,420	1,954	2,335	2,472	2,542
Iraq	130	66	162	187	200	199
Israel	2	237	708	1,019	1,147	1,182
Jordan	50	289	380	253	428	431
Kuwait	4,562	5,265	4,721	5,174	5,351	5,231
Lebanon	0	0	58	0	0	0
Oman	2,835	3,534	5,846	5,989	5,685	5,461
Qatar	19,077	18,999	15,374	20,893	19,488	19,528
Saudi Arabia	1,768	2,294	2,606	2,694	2,741	2,786
Syria	336	322	443	222	197	198
United Arab Emirates	9,472	9,176	7,119	7,837	7,786	7,679
Yemen	0	0	41	37	19	18

	2000	2005	2010	2015	2016	2017
<b>Africa</b>	<b>98</b>	<b>136</b>	<b>144</b>	<b>154</b>	<b>163</b>	<b>162</b>
Algeria	644	736	770	1,030	1,018	994
Angola	34	32	31	27	27	24
Cameroon	0	0	15	22	23	22
Congo	0	6	23	55	50	48
Côte d'Ivoire	91	81	78	87	95	93
Egypt	246	466	508	468	559	601
Gabon	99	106	207	304	298	290
Ghana	0	0	17	46	26	26
Libya	924	981	1,115	702	790	649
Morocco	2	15	21	35	35	34
Mozambique	0	1	3	32	28	30
Nigeria	56	77	66	93	89	81
Senegal	0	1	2	2	1	1
South Africa	36	67	90	94	94	96
Tanzania	0	10	17	16	15	14
Tunisia	336	365	570	535	546	564
Others Africa	0	8	9	7	9	9

<sup>(\*)</sup> Data source: Eni's calculations. The original data are from *IEA Extended Balances* © OECD/International Energy Agency, 2018 and IHS Global Insight.

# Natural Gas - Supply and Demand

## Per Capita Consumption

### Countries<sup>(\*)</sup>

(cubic metres)

	2000	2005	2010	2015	2016	2017
<b>Asia - Pacific</b>	<b>91</b>	<b>114</b>	<b>154</b>	<b>175</b>	<b>181</b>	<b>189</b>
Australia	1,206	1,118	1,534	1,615	1,708	1,685
Bangladesh	67	90	130	156	169	167
Brunei	6,623	6,005	8,217	6,106	6,580	8,524
China	19	35	78	135	145	161
Hong Kong	439	382	532	437	445	440
India	26	33	53	39	42	43
Indonesia	150	154	191	175	179	180
Japan	614	657	797	934	950	944
Malaysia	1,272	1,482	1,324	1,458	1,368	1,490
Myanmar	31	56	31	69	80	81
New Zealand	1,564	931	1,018	1,057	1,077	1,078
Pakistan	144	199	189	159	155	177
Philippines	0	37	39	34	38	37
Singapore	341	1,480	1,696	1,842	1,857	1,920
South Korea	428	671	930	928	970	1,011
Taiwan	304	468	686	751	782	908
Thailand	329	473	585	656	640	650
Vietnam	17	66	110	122	120	109
Others Asia - Pacific	7	6	9	6	6	6
	2000	2005	2010	2015	2016	2017

<b>Americas</b>	<b>1,120</b>	<b>1,055</b>	<b>1,099</b>	<b>1,217</b>	<b>1,222</b>	<b>1,207</b>
Argentina	980	1,092	1,099	1,180	1,215	1,240
Bolivia	335	258	301	382	415	419
Brazil	54	107	140	204	171	180
Canada	2,891	2,989	2,765	2,909	3,122	3,338
Chile	407	502	314	267	290	296
Colombia	161	169	214	250	235	233
Cuba	49	62	90	103	98	98
Dominican Republic	0	30	83	110	97	108
Ecuador	0	24	34	41	43	37
Jamaica	0	0	0	0	0	70
Mexico	416	507	552	613	619	621
Peru	23	70	223	300	312	381
Trinidad and Tobago	8,058	13,524	16,489	15,203	14,427	15,093
United States	2,311	2,041	2,139	2,400	2,406	2,326
Uruguay	11	32	23	16	18	18
Venezuela	1,065	863	856	777	805	780
Others Americas	52	94	105	221	224	172

<sup>(\*)</sup> Data source: Eni's calculations. The original data are from *IEA Extended Balances* © OECD/International Energy Agency, 2018 and IHS Global Insight.

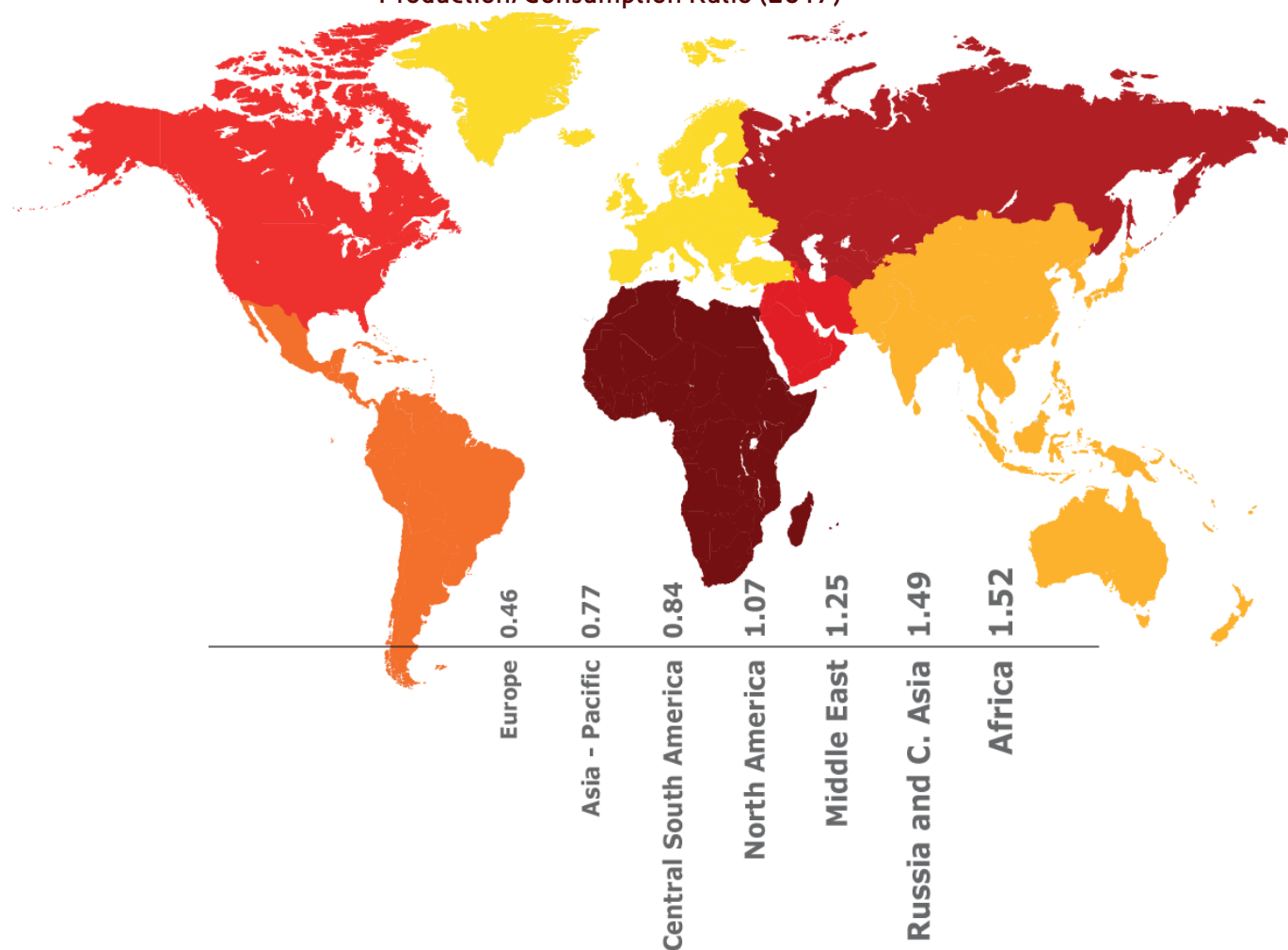
# Natural Gas - Supply and Demand

Production/Consumption Ratio

Areas and Aggregates<sup>(\*)</sup>

	2000	2005	2010	2015	2016	2017
Europe	0.55	0.50	0.48	0.50	0.47	0.46
Russia and Central Asia	1.47	1.49	1.41	1.50	1.50	1.49
Middle East	1.13	1.19	1.27	1.24	1.24	1.25
Africa	2.21	2.12	1.98	1.55	1.47	1.52
Asia - Pacific	0.94	0.91	0.84	0.77	0.77	0.77
Americas	0.97	0.99	0.99	1.02	1.00	1.01
- North America	0.96	0.98	0.99	1.06	1.03	1.07
- Central South America	1.01	1.02	1.00	0.87	0.86	0.84
<b>World</b>	<b>1.00</b>	<b>1.00</b>	<b>0.99</b>	<b>1.02</b>	<b>1.00</b>	<b>1.00</b>
European Union	0.53	0.43	0.36	0.30	0.27	0.26
MENA	1.39	1.41	1.39	1.27	1.23	1.27
OECD	0.78	0.75	0.73	0.79	0.76	0.78
NON OECD	1.27	1.28	1.24	1.21	1.19	1.19
OPEC	1.41	1.41	1.44	1.36	1.34	1.39
NON OPEC	0.96	0.96	0.93	0.95	0.93	0.94

Production/Consumption Ratio (2017)



<sup>(\*)</sup> Data source: Eni's calculations. The original data are from IEA Extended Balances © OECD/International Energy Agency, 2018.

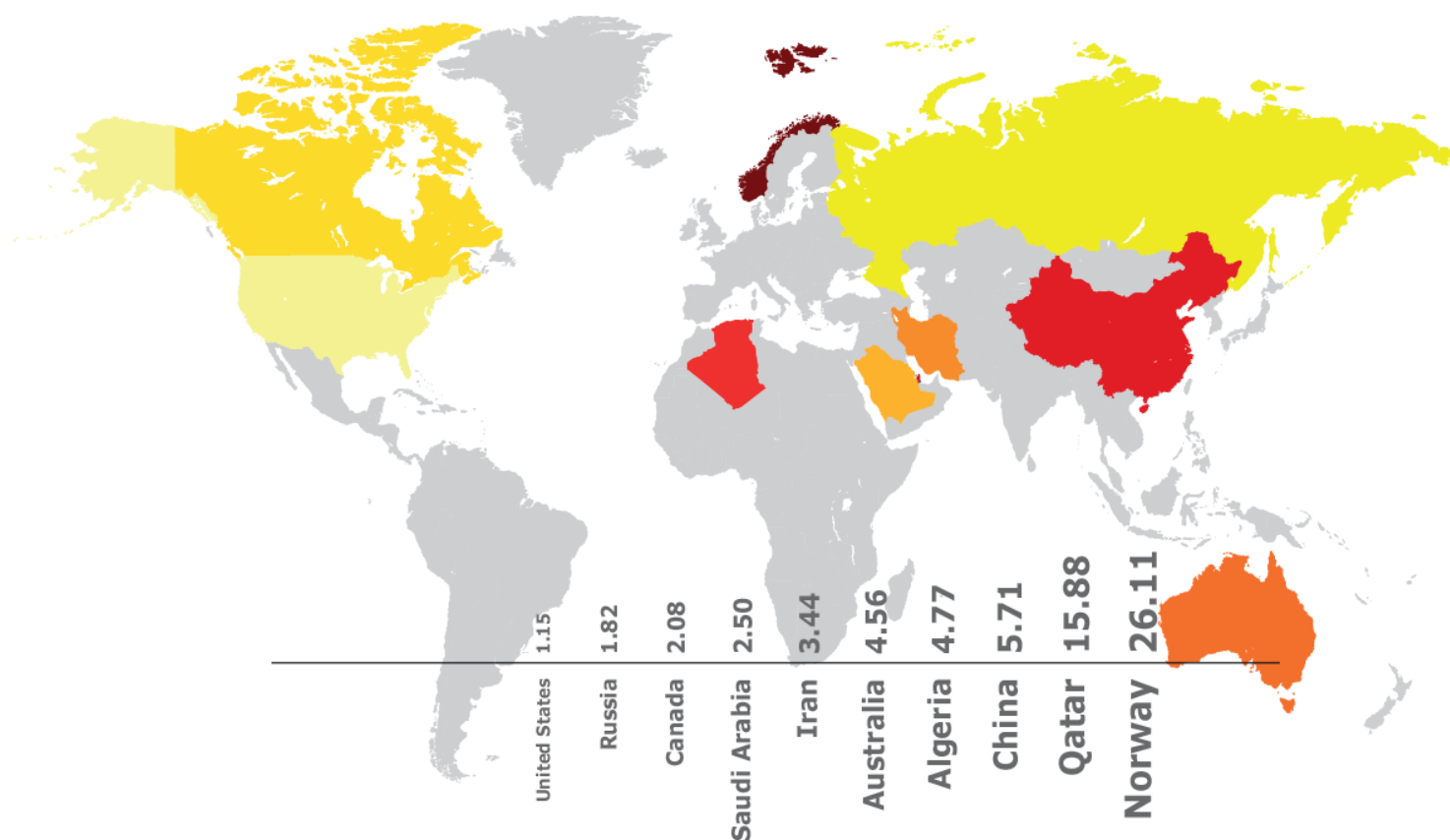
# Natural Gas - Supply and Demand

Production/Consumption Ratio

The World Top 10 Producers Ranked by Production/Consumption Ratio (\*)

	2000	2005	2010	2015	2016	2017
Norway	11.17	18.10	22.85	24.81	24.69	26.11
Qatar	2.30	4.21	11.33	15.67	15.87	15.88
China	1.10	1.99	3.86	5.43	5.52	5.71
Algeria	4.15	4.49	4.27	4.24	4.78	4.77
Australia	1.48	1.63	2.31	2.92	3.76	4.56
Iran	0.95	1.59	2.31	2.96	3.21	3.44
Saudi Arabia	1.00	1.49	1.95	2.32	2.41	2.50
Canada	2.00	2.08	1.78	1.87	1.97	2.08
Russia	1.48	1.62	1.69	1.64	1.69	1.82
United States	0.82	0.77	0.90	1.16	1.15	1.15

The World Top 10 (2017)



(\*) Data source: Eni's calculations. The original data are from IEA Extended Balances © OECD/International Energy Agency, 2018.

# Natural Gas - Supply and Demand

Production/Consumption Ratio

Countries<sup>(\*)</sup>

	2000	2005	2010	2015	2016	2017
<b>Europe</b>	<b>0.55</b>	<b>0.50</b>	<b>0.48</b>	<b>0.50</b>	<b>0.47</b>	<b>0.46</b>
Albania	1.00	1.00	1.00	1.00	1.00	1.00
Austria	0.24	0.16	0.17	0.15	0.14	0.13
Belarus	0.01	0.01	0.01	0.01	0.01	0.01
Bulgaria	0.00	0.14	0.03	0.03	0.03	0.02
Croatia	0.61	0.79	0.84	0.71	0.63	0.48
Czech Republic	0.02	0.02	0.03	0.03	0.03	0.03
Denmark	1.67	2.13	1.66	1.45	1.41	1.59
France	0.04	0.02	0.02	0.00	0.00	0.00
Germany	0.22	0.18	0.15	0.10	0.09	0.07
Greece	0.02	0.01	0.00	0.00	0.00	0.00
Hungary	0.26	0.19	0.23	0.18	0.18	0.16
Ireland	0.28	0.13	0.05	0.03	0.59	0.66
Italy	0.24	0.14	0.10	0.10	0.08	0.07
Netherlands	1.51	1.59	1.62	1.38	1.27	1.07
Norway	11.17	18.43	15.08	16.84	18.49	26.76
Poland	0.33	0.32	0.29	0.27	0.24	0.23
Romania	0.80	0.70	0.80	0.99	0.86	0.90
Serbia	0.41	0.12	0.17	0.26	0.22	0.18
Slovakia	0.02	0.02	0.02	0.02	0.02	0.02
Slovenia	0.01	0.00	0.01	0.00	0.01	0.01
Spain	0.01	0.00	0.00	0.00	0.00	0.00
Turkey	0.04	0.03	0.02	0.01	0.01	0.01
Ukraine	0.24	0.24	0.28	0.57	0.59	0.57
United Kingdom	1.12	0.93	0.59	0.57	0.52	0.53

	2000	2005	2010	2015	2016	2017
<b>Russia and Central Asia</b>	<b>1.47</b>	<b>1.49</b>	<b>1.41</b>	<b>1.50</b>	<b>1.50</b>	<b>1.49</b>
Russia	1.48	1.48	1.41	1.44	1.45	1.44
Azerbaijan	0.95	0.57	1.78	1.69	1.67	1.62
Georgia	0.06	0.01	0.00	0.00	0.00	0.00
Kazakhstan	1.16	1.27	1.10	1.21	1.22	1.22
Kyrgyzstan	0.05	0.03	0.08	0.11	0.09	0.09
Tajikistan	0.05	0.04	0.12	1.00	1.00	1.00
Turkmenistan	3.51	3.60	2.13	3.19	3.04	3.26
Uzbekistan	1.10	1.23	1.32	1.49	1.40	1.40

	2000	2005	2010	2015	2016	2017
<b>Middle East</b>	<b>1.13</b>	<b>1.19</b>	<b>1.27</b>	<b>1.24</b>	<b>1.24</b>	<b>1.25</b>
Bahrain	1.00	0.99	1.00	1.00	1.00	1.00
Iran	0.95	1.00	1.00	1.00	1.02	1.05
Iraq	1.00	1.00	1.00	1.00	1.00	1.00
Israel	1.00	1.00	0.61	0.98	0.96	0.95
Jordan	1.00	0.13	0.06	0.05	0.03	0.02
Kuwait	1.00	1.00	0.81	0.81	0.78	0.77
Oman	1.68	2.41	1.59	1.34	1.37	1.39
Qatar	2.30	2.89	4.68	3.42	3.58	3.48
Saudi Arabia	1.00	1.00	1.00	1.00	1.00	1.00
Syria	1.00	1.00	0.93	1.00	1.00	1.00
United Arab Emirates	1.23	1.14	0.84	0.81	0.82	0.83
Yemen			6.57	2.97	1.00	1.00

<sup>(\*)</sup> Data source: Eni's calculations. The original data are from *IEA Extended Balances* © OECD/International Energy Agency, 2018.



# Natural Gas - Supply and Demand

## Production/Consumption Ratio

### Countries<sup>(\*)</sup>

	2000	2005	2010	2015	2016	2017
<b>Africa</b>	<b>2.21</b>	<b>2.12</b>	<b>1.98</b>	<b>1.55</b>	<b>1.47</b>	<b>1.52</b>
Algeria	4.15	3.68	3.09	2.08	2.32	2.33
Angola	1.00	1.00	1.00	1.00	2.14	4.19
Cameroon			1.00	1.00	1.00	1.00
Congo		1.00	1.00	1.00	1.00	1.00
Côte d'Ivoire	1.00	1.00	1.00	1.00	1.00	1.00
Egypt	1.00	1.42	1.30	0.85	0.66	0.75
Gabon	1.00	1.00	1.00	1.00	1.00	1.00
Ghana			0.00	0.56	0.85	0.85
Libya	1.16	1.94	2.38	2.58	1.94	2.14
Morocco	1.00	0.09	0.08	0.07	0.06	0.06
Mozambique	1.00	103.78	39.44	5.38	6.22	5.75
Nigeria	1.77	2.19	3.01	2.52	2.37	2.72
Senegal	1.00	1.00	1.00	1.00	1.00	1.00
South Africa	1.00	0.65	0.33	0.24	0.21	0.20
Tanzania		1.00	1.00	1.00	1.00	1.00
Tunisia	0.69	0.64	0.61	0.50	0.44	0.40
Others Africa	1.00	1.00	4.26	4.15	3.30	3.61

	2000	2005	2010	2015	2016	2017
<b>Asia - Pacific</b>	<b>0.94</b>	<b>0.91</b>	<b>0.84</b>	<b>0.77</b>	<b>0.77</b>	<b>0.77</b>
Australia	1.48	1.65	1.56	1.75	2.10	2.54
Bangladesh	1.00	1.00	1.00	1.00	1.00	1.00
Brunei	5.12	5.44	3.84	4.41	3.89	3.28
China	1.10	1.06	0.90	0.71	0.67	0.62
India	1.00	0.82	0.79	0.61	0.55	0.55
Indonesia	2.30	2.24	1.93	1.73	1.65	1.63
Japan	0.03	0.04	0.04	0.02	0.02	0.03
Malaysia	1.72	1.74	1.64	1.54	1.60	1.59
Myanmar	4.32	4.50	7.92	4.88	4.53	4.27
New Zealand	1.00	1.00	1.03	0.99	1.00	0.98
Pakistan	1.00	1.00	1.00	1.00	1.00	0.86
Philippines	1.00	1.00	1.00	1.00	1.00	1.00
South Korea	0.00	0.02	0.01	0.00	0.00	0.01
Taiwan	0.11	0.05	0.02	0.02	0.01	0.01
Thailand	0.90	0.71	0.75	0.68	0.68	0.66
Vietnam	1.00	1.28	1.00	1.00	1.00	1.00
Others Asia - Pacific	1.00	1.00	13.90	54.49	53.75	58.15

	2000	2005	2010	2015	2016	2017
<b>Americas</b>	<b>0.97</b>	<b>0.99</b>	<b>0.99</b>	<b>1.02</b>	<b>1.00</b>	<b>1.01</b>
Argentina	1.13	1.11	0.93	0.78	0.81	0.81
Bolivia	1.72	5.20	4.92	5.29	4.57	4.34
Brazil	0.77	0.55	0.54	0.56	0.67	0.72
Canada	2.00	1.91	1.68	1.59	1.54	1.51
Chile	0.31	0.24	0.35	0.21	0.23	0.23
Colombia	1.00	1.00	1.15	1.03	1.00	1.00
Cuba	1.00	1.00	1.00	1.00	1.00	1.00
Ecuador		1.00	1.00	1.00	1.00	1.00
Mexico	0.94	0.83	0.79	0.53	0.46	0.38
Peru	1.00	1.00	1.39	1.61	1.69	1.53
Trinidad and Tobago	1.42	1.80	1.95	1.85	1.75	1.71
United States	0.82	0.83	0.89	0.98	0.96	0.99
Venezuela	1.00	1.00	0.92	0.98	1.00	1.00
Others Americas	0.10	0.04	0.03	0.01	0.01	0.01

<sup>(\*)</sup> Data source: Eni's calculations. The original data are from IEA *Extended Balances* © OECD/International Energy Agency, 2018.



# Natural Gas - Trade and Prices

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Exports

Imports

Traded Gas

LNG - Liquefaction and Regasification Capacity

Natural Gas Balance - Italy

Natural Gas Prices

# Natural Gas - Trade and Prices

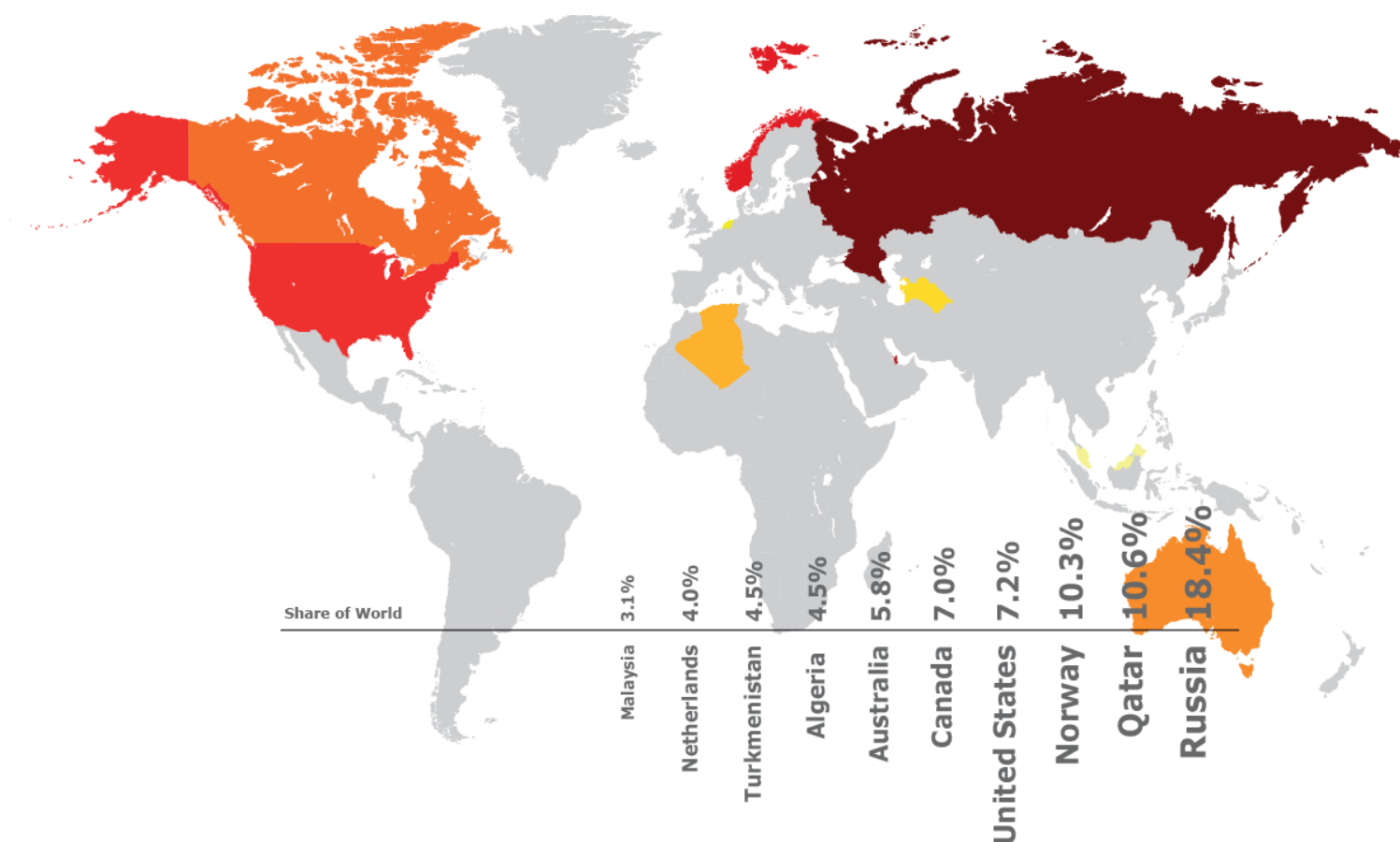
## Exports

### The World Top 10 Exporters<sup>(\*)</sup>

(billion cubic metres)

	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)	CAGR (2017-2000)
Russia	186.81	199.74	183.93	196.81	208.92	221.05	5.8%	1.0%
Qatar	14.69	31.13	100.65	125.23	129.26	127.93	-1.0%	13.6%
Norway	50.27	84.67	105.56	115.42	115.44	124.27	7.7%	5.5%
United States	6.65	19.92	31.20	48.24	62.84	86.85	38.2%	16.3%
Canada	98.64	104.27	94.43	78.75	82.04	84.76	3.3%	-0.9%
Australia	11.05	14.77	24.92	34.94	51.41	69.20	34.6%	11.4%
Algeria	63.24	65.72	58.04	44.14	54.76	54.74	0.0%	-0.8%
Turkmenistan	32.58	44.21	23.33	55.86	52.04	53.76	3.3%	3.0%
Netherlands	35.39	44.59	50.89	47.30	50.99	47.54	-6.8%	1.8%
Malaysia	21.27	29.64	32.00	33.55	33.76	36.79	9.0%	3.3%
<b>The World Top 10</b>	<b>520.60</b>	<b>638.64</b>	<b>704.95</b>	<b>780.24</b>	<b>841.46</b>	<b>906.89</b>	<b>7.8%</b>	<b>3.3%</b>
Rest of the World	123.84	226.53	276.27	298.16	271.05	296.31	9.3%	5.3%
<b>World</b>	<b>644.44</b>	<b>865.17</b>	<b>981.22</b>	<b>1,078.41</b>	<b>1,112.50</b>	<b>1,203.20</b>	<b>8.2%</b>	<b>3.7%</b>

### The World Top 10 (2017)



<sup>(\*)</sup> Data source: the original data are from *IEA Extended Balances* © OECD/International Energy Agency, 2018. Data have been converted by Eni using a unified gross calorific value of 39 MJ/cm.

# Natural Gas - Trade and Prices

## Exports

### Countries<sup>(\*)</sup>

(billion cubic metres)

	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)	CAGR (2017-2000)
<b>Europe</b>								
Austria	0.02	1.05	4.86	5.30	6.80	5.34	-21.5%	39.8%
Belgium	0.00	0.00	3.29	1.72	0.69	0.75	9.0%	
Croatia	0.00	0.44	0.47	0.36	0.39	0.20	-49.1%	
Czech Republic	0.00	0.08	0.16	0.00	0.00	0.00		-100.0%
Denmark	3.44	5.98	3.77	2.35	2.26	2.39	5.8%	-2.1%
France	0.81	1.08	3.05	5.80	3.98	6.47	62.5%	13.0%
Germany	5.03	20.23	20.47	32.50	23.06	34.62	50.1%	12.0%
Hungary	0.08	0.00	0.22	0.55	1.07	3.51	229.5%	25.1%
Italy	0.05	0.39	0.14	0.22	0.21	0.27	28.7%	10.5%
Netherlands	35.39	44.59	50.89	47.30	50.99	47.54	-6.8%	1.8%
Norway	50.27	84.67	105.56	115.42	115.44	124.27	7.7%	5.5%
Poland	0.04	0.04	0.05	0.05	0.85	1.21	41.8%	22.1%
Slovakia	0.00	0.37	0.00	0.00	0.00	0.00		
Spain	0.00	0.00	1.20	5.26	4.14	2.99	-27.7%	
Turkey	0.00	0.00	0.64	0.61	0.66	0.62	-6.8%	
Ukraine	2.87	2.66	0.01	0.00	0.00	0.00		-100.0%
United Kingdom	13.51	8.88	15.53	14.16	10.04	11.22	11.7%	-1.1%
<b>Russia and Central Asia</b>								
Russia	186.81	199.74	183.93	196.81	208.92	221.05	5.8%	1.0%
Azerbaijan	0.00	0.00	6.20	8.16	8.06	8.87	10.0%	
Kazakhstan	5.22	15.44	6.23	12.71	14.81	14.56	-1.7%	6.2%
Turkmenistan	32.58	44.21	23.33	55.86	52.04	53.76	3.3%	3.0%
Uzbekistan	6.66	12.05	13.99	20.00	15.63	15.63	0.0%	5.1%
<b>Middle East</b>								
Iran	0.00	4.78	8.57	9.15	9.15	12.44	35.9%	
Oman	4.38	12.50	12.59	10.69	11.38	12.03	5.7%	6.1%
Qatar	14.69	31.13	100.65	125.23	129.26	127.93	-1.0%	13.6%
United Arab Emirates	6.95	7.14	7.64	7.34	7.31	7.09	-3.0%	0.1%
Yemen	0.00	0.00	5.44	1.94	0.00	0.00		
<b>Africa</b>								
Algeria	63.24	65.72	58.04	44.14	54.76	54.74	0.0%	-0.8%
Angola	0.00	0.00	0.00	0.00	0.89	2.30	159.5%	
Egypt	0.00	15.08	12.64	0.25	0.29	0.46	55.9%	
Libya	0.78	5.33	9.50	6.93	4.68	4.72	1.0%	11.2%
Mozambique	0.00	2.21	3.12	3.97	4.18	4.29	2.7%	
Nigeria	5.27	12.84	21.18	25.66	22.68	26.52	17.0%	10.0%
Others Africa	0.00	0.00	5.03	4.59	4.37	4.97	13.8%	

<sup>(\*)</sup> Data source: the original data are from *IEA Extended Balances* © OECD/International Energy Agency, 2018. Data have been converted by Eni using a unified gross calorific value of 39 MJ/cm.

# Natural Gas - Trade and Prices

## Exports

### Countries<sup>(\*)</sup>

(billion cubic metres)

	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)	CAGR (2017-2000)
<b>Asia - Pacific</b>								
Australia	11.05	14.77	24.92	34.94	51.41	69.20	34.6%	11.4%
Brunei	9.10	9.74	9.06	8.57	8.08	8.32	3.0%	-0.5%
China	2.39	2.96	4.02	3.24	3.37	3.36	-0.3%	2.0%
Indonesia	41.28	43.31	42.93	32.95	30.38	29.76	-2.0%	-1.9%
Malaysia	21.27	29.64	32.00	33.55	33.76	36.79	9.0%	3.3%
Myanmar	4.75	9.56	10.60	14.01	14.88	14.18	-4.7%	6.6%
Others Asia - Pacific	0.00	0.00	5.79	17.55	17.56	18.96	8.0%	

	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)	CAGR (2017-2000)
<b>Americas</b>								
Argentina	4.64	6.63	0.47	0.06	0.06	0.06	-2.0%	-22.6%
Bolivia	2.00	9.89	11.68	17.58	16.14	15.44	-4.3%	12.8%
Canada	98.64	104.27	94.43	78.75	82.04	84.76	3.3%	-0.9%
Chile	0.00	0.00	0.00	0.00	0.36	0.28	-23.1%	
Colombia	0.00	0.00	1.43	0.34	0.00	0.00		
Mexico	0.25	0.25	0.94	0.03	0.03	0.02	-13.6%	-13.1%
Peru	0.00	0.00	2.54	5.73	6.87	6.52	-5.0%	
Trinidad and Tobago	4.33	14.07	20.85	17.49	14.85	14.70	-1.0%	7.5%
United States	6.65	19.92	31.20	48.24	62.84	86.85	38.2%	16.3%
Others Americas	0.00	0.00	0.00	0.00	0.00	0.00		

<sup>(\*)</sup> Data source: the original data are from *IEA Extended Balances* © OECD/International Energy Agency, 2018. Data have been converted by Eni using a unified gross calorific value of 39 MJ/cm.

# Natural Gas - Trade and Prices

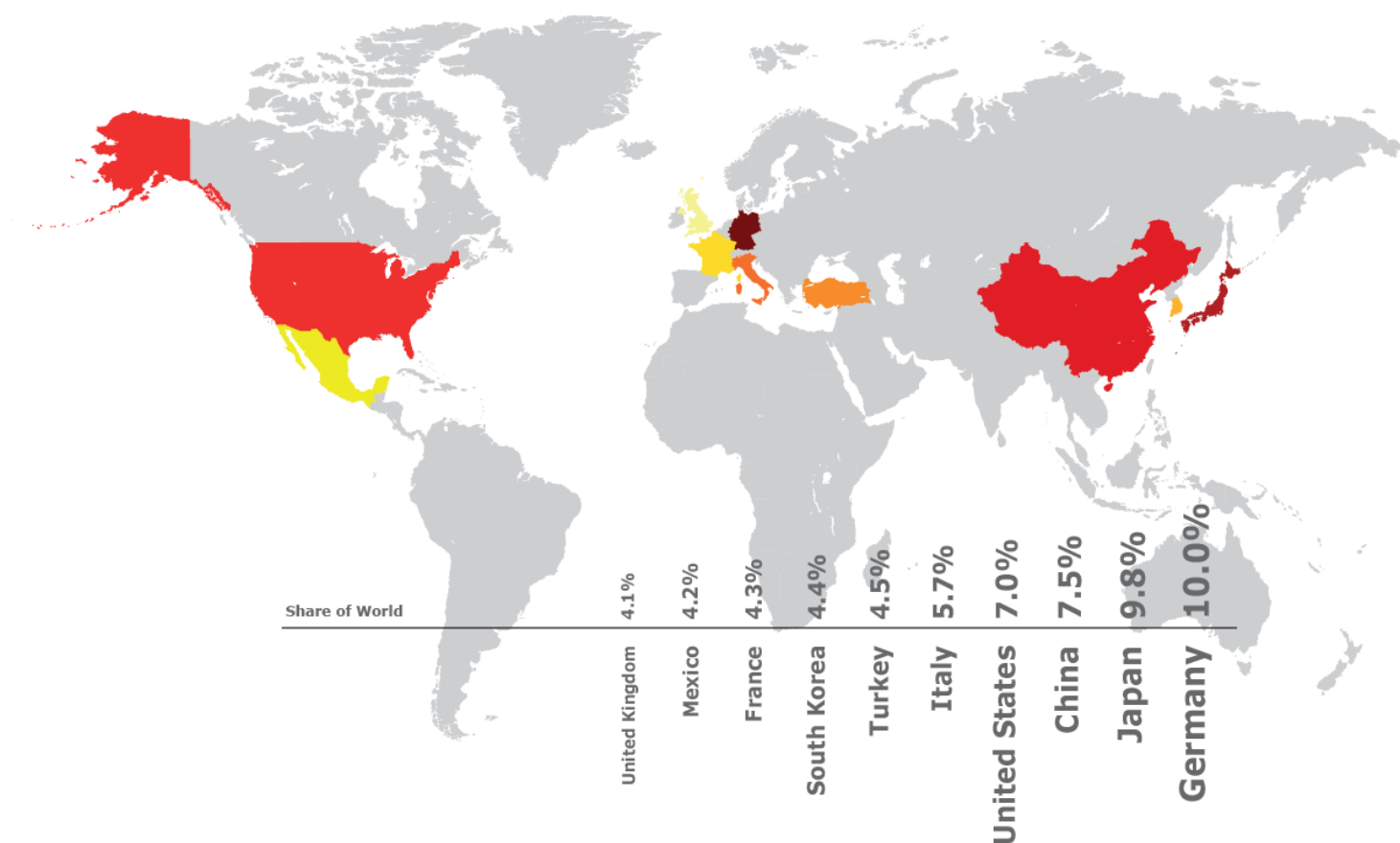
## Imports

### The World Top 10 Importers<sup>(\*)</sup>

(billion cubic metres)

	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)	CAGR (2017-2000)
Germany	72.87	94.13	94.01	102.50	97.36	119.50	22.7%	3.0%
Japan	75.71	80.96	98.61	116.72	118.36	117.16	-1.0%	2.6%
China	0.00	0.00	15.02	58.04	70.47	89.49	27.0%	
United States	104.72	120.34	103.69	75.03	82.97	83.89	1.1%	-1.3%
Italy	56.13	71.78	73.63	59.86	63.79	68.05	6.7%	1.1%
Turkey	14.38	26.41	37.36	47.57	45.53	54.14	18.9%	8.1%
South Korea	20.37	31.15	46.87	46.46	47.25	52.05	10.1%	5.7%
France	43.50	49.66	50.24	46.98	49.19	51.49	4.7%	1.0%
Mexico	2.87	9.17	15.08	36.00	42.42	49.45	16.6%	18.2%
United Kingdom	2.40	16.01	55.97	45.74	48.62	48.35	-0.6%	19.3%
<b>The World Top 10</b>	<b>392.95</b>	<b>499.59</b>	<b>590.48</b>	<b>634.91</b>	<b>665.97</b>	<b>733.57</b>	<b>10.2%</b>	<b>3.7%</b>
Rest of the World	245.12	346.82	394.38	408.44	426.25	457.07	7.2%	3.7%
<b>World</b>	<b>638.07</b>	<b>846.41</b>	<b>984.86</b>	<b>1,043.35</b>	<b>1,092.22</b>	<b>1,190.63</b>	<b>9.0%</b>	<b>3.7%</b>

### The World Top 10 (2017)



<sup>(\*)</sup> Data source: the original data are from *IEA Extended Balances* © OECD/International Energy Agency, 2018. Data have been converted by Eni using a unified gross calorific value of 39 MJ/cm.

# Natural Gas - Trade and Prices

## Imports

### Countries<sup>(\*)</sup>

(billion cubic metres)

	2000	2005	2010	2015	2016	2017	$\Delta$ y/y (2017-2016)	CAGR (2017-2000)
<b>Europe</b>								
Austria	6.35	9.58	12.16	11.25	14.15	13.73	-2.97%	4.64%
Belarus	16.95	19.93	21.36	18.61	18.46	18.83	2.01%	0.62%
Belgium	15.84	17.68	23.32	18.27	17.85	17.63	-1.22%	0.63%
Bosnia Herzegovina	0.24	0.36	0.24	0.21	0.22	0.24	7.57%	-0.03%
Bulgaria	3.27	2.93	2.54	3.01	3.09	3.25	4.97%	-0.04%
Croatia	1.08	1.10	1.04	1.04	1.25	1.79	42.82%	3.02%
Czech Republic	8.93	9.07	8.32	7.35	8.01	8.75	9.23%	-0.12%
Denmark	0.00	0.00	0.16	0.71	0.73	0.55	-24.18%	
Estonia	0.79	0.95	0.67	0.47	0.51	0.49	-4.91%	-2.82%
Finland	4.09	4.30	4.58	2.67	2.46	2.29	-6.95%	-3.37%
France	43.50	49.66	50.24	46.98	49.19	51.49	4.66%	1.00%
Germany	72.87	94.13	94.01	102.50	97.36	119.50	22.73%	2.95%
Greece	2.01	2.78	3.85	3.19	4.13	5.04	22.04%	5.54%
Hungary	8.76	11.70	9.44	6.77	8.62	13.32	54.52%	2.49%
Ireland	2.96	3.59	5.34	4.32	2.03	1.68	-17.12%	-3.27%
Italy	56.13	71.78	73.63	59.86	63.79	68.05	6.69%	1.14%
Latvia	1.33	1.71	1.08	1.29	1.10	1.21	9.75%	-0.55%
Lithuania	2.46	2.97	2.96	2.55	2.25	2.51	11.54%	0.12%
Luxembourg	0.80	1.40	1.43	0.92	0.85	0.83	-2.26%	0.19%
Macedonia	0.06	0.07	0.11	0.13	0.21	0.27	28.98%	8.81%
Malta	0.00	0.00	0.00	0.00	0.00	0.30		
Moldova	2.54	2.85	2.76	2.54	2.57	2.36	-8.18%	-0.43%
Netherlands	14.88	19.61	22.01	34.79	39.24	45.99	17.19%	6.86%
Poland	7.92	10.22	10.63	11.92	14.54	15.54	6.91%	4.04%
Portugal	2.43	4.64	5.37	4.85	5.08	6.72	32.27%	6.16%
Romania	3.24	5.00	2.17	0.19	1.40	1.18	-15.82%	-5.76%
Serbia	1.09	2.05	1.87	1.65	1.70	2.06	20.92%	3.84%
Slovakia	6.81	7.21	5.97	4.40	4.32	4.96	14.85%	-1.85%
Slovenia	0.98	1.10	1.02	0.79	0.84	0.88	4.85%	-0.64%
Spain	18.45	36.09	38.12	33.62	33.64	35.94	6.85%	4.00%
Sweden	0.93	1.01	1.75	0.86	0.98	0.80	-17.85%	-0.84%
Switzerland	2.90	3.32	3.59	3.40	3.57	3.59	0.43%	1.26%
Turkey	14.38	26.41	37.36	47.57	45.53	54.14	18.91%	8.11%
Ukraine	59.26	60.24	35.26	15.86	10.51	13.44	27.85%	-8.36%
United Kingdom	2.40	16.01	55.97	45.74	48.62	48.35	-0.55%	19.31%

	2000	2005	2010	2015	2016	2017	$\Delta$ y/y (2017-2016)	CAGR (2017-2000)
<b>Russia and Central Asia</b>								
Russia	12.56	7.40	4.17	8.63	8.76	8.61	-1.7%	-2.2%
Armenia	1.34	1.60	1.64	2.26	2.20	2.34	6.2%	3.4%
Azerbaijan	0.28	4.53	0.00	0.00	0.30	1.90	535.1%	11.9%
Georgia	1.07	1.25	1.20	2.49	2.25	2.29	1.8%	4.6%
Kazakhstan	4.22	11.24	3.52	5.83	6.86	6.89	0.3%	2.9%
Kyrgyzstan	0.65	0.71	0.27	0.24	0.26	0.26	0.0%	-5.3%
Tajikistan	0.71	0.61	0.17	0.00	0.00	0.00		-100.0%
Uzbekistan	1.57	1.07	0.00	0.00	0.00	0.00		-100.0%

<sup>(\*)</sup> Data source: the original data are from *IEA Extended Balances* © OECD/International Energy Agency, 2018. Data have been converted by Eni using a unified gross calorific value of 39 MJ/cm.



# Natural Gas - Trade and Prices

## Imports

### Countries<sup>(\*)</sup>

(billion cubic metres)

	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)	CAGR (2017-2000)
<b>Middle East</b>								
Iran	3.32	5.22	9.08	8.65	5.92	3.03	-48.83%	-0.53%
Israel	0.00	0.00	2.07	0.16	0.35	0.50	41.98%	
Jordan	0.00	1.44	2.57	2.20	4.76	5.18	8.80%	
Kuwait	0.00	0.00	2.72	3.89	4.83	4.98	2.96%	
Oman	0.00	0.00	2.02	2.11	2.09	2.09	-0.11%	
United Arab Emirates	0.00	1.36	16.97	20.93	20.47	19.38	-5.31%	

	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)	CAGR (2017-2000)
<b>Africa</b>								
Egypt	0.00	0.00	0.00	6.80	18.33	15.40	-16.0%	
Ghana	0.00	0.00	0.42	0.56	0.11	0.11	0.0%	
Morocco	0.00	0.41	0.63	1.13	1.16	1.15	-0.9%	
South Africa	0.00	1.16	3.12	3.97	4.18	4.33	3.5%	
Tunisia	1.01	1.31	2.40	3.03	3.50	3.92	12.0%	8.3%
Others Africa	0.00	0.00	0.00	0.00	0.00	0.00		

	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)	CAGR (2017-2000)
<b>Asia - Pacific</b>								
Australia	0.00	0.00	5.79	6.13	6.12	5.61	-8.3%	
China	0.00	0.00	15.02	58.04	70.47	89.49	27.0%	
Hong Kong	2.93	2.61	3.74	3.17	3.25	3.24	-0.3%	0.6%
India	0.00	7.01	13.64	20.32	25.19	25.94	3.0%	
Japan	75.71	80.96	98.61	116.72	118.36	117.16	-1.0%	2.6%
Malaysia	0.00	1.60	8.37	9.32	8.15	8.84	8.5%	
Singapore	1.33	6.65	8.61	10.15	10.39	10.96	5.5%	13.2%
South Korea	20.37	31.15	46.87	46.46	47.25	52.05	10.1%	5.7%
Taiwan	6.17	9.96	15.44	18.31	19.08	21.23	11.2%	7.5%
Thailand	2.06	8.86	9.83	14.26	13.89	15.28	10.0%	12.5%
Others Asia - Pacific	0.00	0.00	0.16	0.00	0.00	0.00	0.0%	

	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)	CAGR (2017-2000)
<b>Americas</b>								
Argentina	0.00	1.73	3.58	11.26	10.43	10.42	0.0%	
Brazil	2.20	8.94	12.57	18.29	11.65	10.65	-8.6%	9.7%
Canada	1.59	9.34	22.39	19.75	20.27	24.20	19.4%	17.4%
Chile	4.38	6.29	3.59	3.74	4.36	4.46	2.2%	0.1%
Colombia	0.00	0.00	0.00	0.00	0.01	0.01	-36.4%	
Dominican Republic	0.00	0.24	0.81	1.14	1.05	1.16	10.9%	
Jamaica	0.00	0.00	0.00	0.00	0.00	0.20		
Mexico	2.87	9.17	15.08	36.00	42.42	49.45	16.6%	18.2%
United States	104.72	120.34	103.69	75.03	82.97	83.89	1.1%	-1.3%
Uruguay	0.04	0.11	0.08	0.05	0.06	0.06	0.0%	3.1%
Venezuela	0.00	0.00	2.00	0.37	0.00	0.00		
Others Americas	0.34	0.68	0.77	1.66	1.69	1.30	-23.1%	8.2%

<sup>(\*)</sup> Data source: the original data are from *IEA Extended Balances* © OECD/International Energy Agency, 2018. Data have been converted by Eni using a unified gross calorific value of 39 MJ/cm.

# Natural Gas - Trade and Prices

## Imports

### Imports by Country of Origin - Pipeline and LNG 2017(\*)

(billion cubic metres)

Importers → Exporters ↓	EUROPE																																			
	Austria	Belarus	Belgium	Bosnia Herzegovina	Bulgaria	Croatia	Czech Republic	Denmark	Estonia	Finland	France	Germany	Greece	Hungary	Ireland	Italy	Latvia	Lithuania	Luxembourg	Macedonia	Malta	Moldova	Netherlands	Poland	Portugal	Romania	Serbia	Slovak Republic	Slovenia	Spain	Sweden	Switzerland	Turkey	Ukraine	United Kingdom	
Europe																																				
Austria						0.51										2.82								6.91	0.00				0.56					0.05		
Belgium											1.70																									2.65
Croatia																	0.20																		0.25	
Czech Republic																									0.12											
Denmark																	0.11							1.37								0.75				
France				0.01		0.00											0.00														1.38	0.35		1.00		
Germany			1.24					0.10			0.45						2.32							2.94	3.57							2.78		3.65		
Hungary						0.94																				0.01								0.76		
Italy																																0.12	0.07			
Luxembourg																																0.18				
Netherlands				7.83							4.97						0.86					0.01			0.00						0.10	0.43	0.09		1.87	
Norway			5.23					0.42			20.59	13.13	0.05				2.51	0.09	0.50					24.77	0.08						3.43	0.76		36.03		
Poland																																		1.47		
Slovak Republic																																		0.22		
Slovenia						0.36											0.01																			
Spain											0.06						0.00																			
Switzerland																																		4.81		
Turkey													0.61																						4.81	
United Kingdom				2.71		0.00									1.65	0.11								1.52								0.09	0.53			
Russia and Central Asia																																				
Russia		19.01		0.25	3.27		8.89		0.49	2.32	9.23	71.98	2.89	12.70		27.43	1.24	2.06	0.20	0.28		2.71	14.68	10.32		1.23	2.17	4.44	0.31				28.56	0.09		
Azerbaijan																																	6.54			
Kazakhstan																																				
Turkmenistan																																				
Uzbekistan																																				
Others FSU																																				
Middle East																																				
Iran																																	9.25			
Oman																																				
Qatar			1.09								2.00		0.17			7.01								1.54	0.32					3.47		1.66		6.18		
United Arab Emirates																																				
Africa																																				
Algeria											3.83	1.25				20.51		0.00							2.04					16.72		4.62		0.33		
Angola																									0.09					0.28						
Equatorial Guinea																						0.06										0.29				
Egypt											0.08											0.01								0.10						
Libya																	4.89																			
Nigeria											3.01							0.09							2.24				4.32		2.08		0.07			
Asia-Pacific																																				
Australia																																				
Brunei																																				
China																																				
Indonesia																																				
Malaysia																																				
Myanmar																																				
Papua New Guinea																																				
South Korea																																				
Americas																																				
Argentina																																				
Bolivia																																				
Canada																																				
Chile																																				
Peru											0.08																				3.51			0.14		
Trinidad and Tobago																0.08	0.08		0.20											0.54		0.42	0.20			
United States																0.09	0.19		0.02					0.09	0.38				0.76		0.77		0.15			
Non-specified/Others	14.01										2.71	34.36		0.67		0.70		0.08					1.61	1.47				0.55	0.04					0.06		
TOTAL BY COUNTRY	14.0	19.0	18.1	0.2	3.3	1.8	8.9	0.5	0.5	2.3	48.7	119.5	5.0	13.4	1.7	69.7	1.2	2.5	0.8	0.3	0.3	2.7	53.8	15.7	6.5	1.2	2.2	5.0	0.9	34.6	0.8	3.7	55.1	13.0	47.8	

(\*) Data source: IEA Natural Gas Information, 2018.

RUSSIA AND CENTRAL ASIA						MIDDLE EAST						AFRICA					ASIA-PACIFIC										AMERICAS												TOTAL BY COUNTRY
Russia	Armenia	Azerbaijan	Georgia	Kazakhstan	Kyrgyzstan	Iran	Israel	Jordan	Kuwait	Oman	United Arab Emirates	Egypt	Ghana	Morocco	South Africa	Tunisia	Australia	China	India	Japan	Malaysia	Pakistan	Singapore	South Korea	Taiwan	Thailand	Argentina	Brazil	Canada	Chile	Dominican Republic	Jamaica	Mexico	United States	Uruguay	Others Americas			
																																							3.9
																																							113.0
																																							0.2
																																							0.4
																																							2.2
																																							27.0
																																							17.0
																																							1.7
																																							0.2
																																							0.2
																																							163.0
																																							1082.0
																																							1.5
																																							0.2
																																							0.4
																																							0.1
																																							48.0
																																							0.6
																																							66.0
																																							249.1
																																							6.5
																																							9.8
																																							336.0
																																							4.6
																																							0.2
																																							9.9
																																							11.1
																																							1204.7
																																							7.3
																																							567.0
																																							4.3
																																							4.5
																																							1.1
																																							4.9
																																							27.1
																																							72.3
																																							9.7
																																							3.3
																																							348.0
																																							35.7
																																							15.1
																																							106.0
																																							0.1
																																							0.1
																																							14.0
																																							83.9
																																							0.3
																																							5.6
																																							13.5
																																							85.9
																																							83.7
8.8	2.4	1.9	2.3	6.9	0.3	3.0	0.5	6.5	5.1	2.0	19.9	15.8	0.1	1.1	4.4	3.8	5.8	93.1	24.4	115.3	8.8	6.0	11.3	48.7	20.0	16.4	10.4	10.5	24.2	4.4	1.2	0.2	50.3	86.0	0.1	1.3	1,197.0		

# Natural Gas - Trade and Prices

## Imports

### Imports by Country of Origin - Pipeline 2017(\*)

(billion cubic metres)

Importers → Exporters ↓	EUROPE																																		
	Austria	Belgium	Belarus	Bosnia Herzegovina	Bulgaria	Croatia	Czech Republic	Denmark	Estonia	Finland	France	Germany	Greece	Hungary	Ireland	Italy	Latvia	Lithuania	Luxembourg	Macedonia	Moldova	Netherlands	Poland	Portugal	Romania	Serbia	Slovak Republic	Slovenia	Spain	Sweden	Switzerland	Turkey	Ukraine	United Kingdom	
Europe																																			
Austria						0.51										2.82												0.56					0.05		
Belgium											1.70											6.91												2.65	
Croatia																0.20																			
Czech Republic																							0.12										0.25		
Denmark																0.11						1.37								0.75					
France			0.01			0.00										0.00													1.38		0.35		1.00		
Germany			1.24					0.10			0.45					2.32						2.94	3.57								2.78		3.65		
Hungary						0.94																			0.01								0.76		
Italy																															0.12		0.07		
Luxembourg																																0.18			
Netherlands			7.83								4.97					0.86															0.43		1.87		
Norway			5.23					0.42			20.55	13.13				2.41		0.50				24.77							2.54					35.89	
Poland																																	1.47		
Slovak Republic																																	0.22		
Slovenia						0.36										0.01																			
Spain											0.06					0.00																			
Switzerland																																	4.81		
Turkey													0.61																						
United Kingdom			2.71			0.00									1.65	0.11						1.52											0.53		
Russia and Central Asia																																			
Russia			19.01	0.25	3.27		8.89		0.49	2.32	9.23	71.98	2.89	12.70		27.43	1.24	2.06	0.20	0.28	2.71	14.68	10.29		1.23	2.17	4.44	0.31				28.56			
Azerbaijan																																	6.54		
Kazakhstan																																			
Turkmenistan																																			
Uzbekistan																																			
Others FSU																																			
Middle East																																			
Iran																																	9.25		
Qatar																																			
Africa																																			
Algeria																20.14		0.00					1.83						14.34						
Libya																4.89																			
Nigeria																																			
Asia-Pacific																																			
China																																			
Indonesia																																			
Malaysia																																			
Myanmar																																			
Americas																																			
Argentina																																			
Bolivia																																			
Canada																																			
Chile																																			
United States																																			
Non-specified/Others	14.01										2.37	34.36		0.67		0.70		0.08						1.46			0.55	0.04							
TOTAL BY COUNTRY	14.0	17.0	19.0	0.2	3.3	1.8	8.9	0.5	0.5	2.3	39.3	119.5	3.5	13.4	1.7	62.0	1.2	2.1	0.8	0.3	2.7	52.2	14.0	3.3	1.2	2.2	5.0	0.9	18.3	0.8	3.7	44.4	13.0	40.4	

(\*) Data source: IEA Natural Gas Information, 2018.

# Natural Gas - Trade and Prices

## Imports

RUSSIA AND CENTRAL ASIA						MIDDLE EAST			AFRICA					ASIA-PACIFIC					AMERICAS							TOTAL BY COUNTRY
Russia	Armenia	Azerbaijan	Georgia	Kazakhstan	Kyrgyzstan	Iran	Oman	United Arab Emirates	Egypt	Ghana	Morocco	South Africa	Tunisia	Australia	China	Malaysia	Singapore	Thailand	Argentina	Brazil	Canada	Chile	Mexico	United States	Uruguay	
																										3.9
																										11.3
																										0.2
																										0.4
																										2.2
																										2.7
																										17.0
																										1.7
																										0.2
																										0.2
																										16.0
																										105.4
																										1.5
																										0.2
																										0.4
																										0.1
																										4.8
																										0.6
																										6.5
200	1.60			3.95	0.26																					234.4
878															1.00											6.5
				1.35											32.22											9.8
				1.58											3.00											33.6
								0.18																		4.6
																										0.2
0.38	0.30																									9.9
								1.97	16.57																	18.5
											1.14	3.81														41.3
											0.11															4.9
																										0.1
															3.33											3.3
																6.39	7.25									13.6
																	1.16									1.2
															4.00			11.10								15.1
																						0.00		0.06		0.1
																				5.73	8.27					14.0
																							83.83			83.8
																				0.28						0.3
																					24.12		37.93			62.1
				2.29																						
						2.83																				70.9
8.8	2.4	1.9	2.3	6.9	0.3	3.0	2.0	16.6	1.3	0.1	1.1	4.4	3.8	5.8	43.5	6.4	8.4	11.1	6.0	8.3	24.1	0.0	37.9	83.8	0.1	803.5

# Natural Gas - Trade and Prices

## Imports

### Imports by Country of Origin - LNG 2017(\*)

(billion cubic metres)

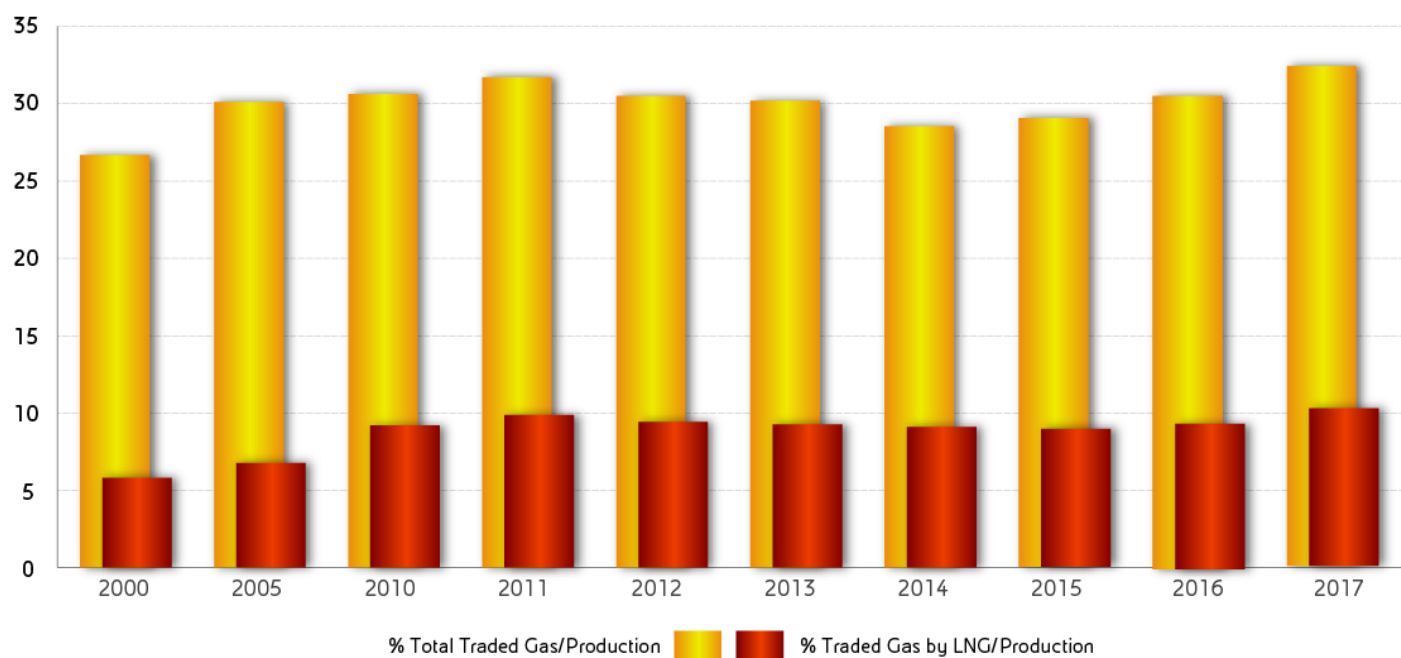
Importers → Exporters ↓	EUROPE											MIDDLE EAST				AFRICA	ASIA-PACIFIC										AMERICAS										TOTAL BY COUNTRY					
	Belgium	France	Greece	Italy	Lithuania	Malta	Netherlands	Poland	Portugal	Spain	Turkey	United Kingdom	Israel	Jordan	Kuwait	United Arab Emirates	Egypt	China	India	Japan	Malaysia	Pakistan	Singapore	South Korea	Taiwan	Thailand	Argentina	Brazil	Canada	Chile	Dominican Republic	Jamaica	Mexico	United States	Others Americas							
Europe																																										
Netherlands	0.01																0.10										0.00										0.3					
Norway	0.04	0.05	0.10	0.09					0.08	0.90	0.76	0.14	0.09	0.09		0.30	0.08																					2.7				
United Kingdom																																					0.1					
Russia and Central Asia																																										
Russia	0.03											0.09								0.59	9.71					2.60	1.68											14.7				
Middle East																																										
Oman												0.17 0.43 0.17					0.25	0.45	3.90					5.63	0.14											11.1						
Qatar	1.09	2.00	0.17	7.01					1.54	0.32	3.47	1.66	6.18	0.17	2.08	0.23	5.70	10.20	13.22	13.55	5.02		1.10	15.29	6.45	3.18	1.90	0.30	0.07												101.9	
United Arab Emirates												0.08					0.52		6.51					0.08	0.08											7.3						
Africa																																										
Algeria	3.83	1.25	0.37					0.21	2.38	4.62	0.33	0.36	0.36	0.27	0.60	0.08	0.25	0.10			0.08	0.08	0.08	0.09	0.08											15.4						
Angola												0.09 0.28				0.28	0.25	0.82	0.20	0.37	1.30	0.09			0.25	0.37										4.3						
Egypt	0.08					0.01	0.10				0.18				0.08	0.24	0.28	0.09												1.1												
Equatorial Guinea												0.06	0.29				0.72	0.10	0.17	0.10	0.17	1.20	0.08	0.32	0.08	0.26	0.08	0.75	0.08												4.5	
Nigeria	3.01	0.09				2.24				4.32	2.08	0.07	1.30	0.72	0.45	1.25	0.47	4.00	1.87	0.50	0.92		0.63	0.20	0.50	0.60			0.08	1.54	0.17											27.0
Asia-Pacific																																										
Australia												0.09					20.38	2.03	3.687	0.70	1.30		9.02	1.20	0.69											72.3						
Brunei																	0.37	5.52		1.30	1.85		0.55	0.09											9.7							
Indonesia												0.08					4.15	0.16	9.16			4.35	2.70	0.27	0.27										21.1							
Malaysia																	5.60	0.25	19.57	0.19		4.91	3.50	0.50											34.5							
Papua New Guinea																	2.70	5.45				0.09	2.35											10.6								
South Korea																	0.08												0.1													
Americas																																										
Canada																											0.04										0.0					
Peru	0.08					3.51				0.14					0.09	0.65	0.44				0.08	0.05										0.52	5.6									
Trinidad and Tobago												0.54				0.42	0.20	0.51	0.39	0.08	0.08	0.17	0.23	0.31	0.08	0.22	0.28	0.64	0.50	0.02	3.62	0.95	0.13	0.46	2.00	1.33	13.5					
United States												0.09				0.38	0.76	0.77	0.15	0.75	0.57	0.38	0.30	2.93	0.59	1.29	0.08	2.59	0.26	0.09	0.46	0.50	0.04	0.68	0.25	9.59	23.8					
Non-specified/Others	0.34					1.61	0.01				0.06	2.16				0.34	0.50	6.05	0.90	0.21	0.40	0.16		0.05										12.8								
TOTAL BY COUNTRY	1.1	9.4	1.5	7.7	0.5	0.3	1.6	1.8	3.3	16.4	10.8	7.4	0.5	6.5	5.1	3.3	14.5	49.6	24.4	115.3	2.4	6.0	2.8	48.7	20.0	5.3	4.4	2.3	0.1	4.4	1.2	0.2	12.4	2.2	1.3	394.4						

(\*) Data source: IEA Natural Gas Information, 2018.

	Traded Gas by LNG/ Total Traded Gas (%)	Traded Gas by Pipeline/ Total Traded Gas (%)	Total Traded gas/ Production (%)	Traded Gas by LNG/ Production (%)	Traded Gas by Pipeline/ Production (%)
2000	21.53	78.47	26.12	5.62	20.50
2005	22.52	77.48	30.11	6.78	23.33
2010	30.24	69.76	30.52	9.23	21.29
2011	31.92	68.08	31.30	9.99	21.31
2012	30.56	69.44	30.46	9.31	21.15
2013	30.42	69.58	30.27	9.21	21.06
2014	31.83	68.17	28.84	9.18	19.66
2015	31.25	68.75	29.37	9.18	20.19
2016	31.77	68.23	30.34	9.64	20.70
2017	32.92	67.08	31.95	10.52	21.43

### Total Traded Gas on Production

(percentage)



## Natural Gas - Trade and Prices LNG - Liquefaction and Regasification Capacity

### Liquefaction Capacity - Countries<sup>(\*)</sup>

(billion cubic metres)

	2000	2005	2010	2015	2016	2017
<b>Europe</b>			<b>5.6</b>	<b>5.6</b>	<b>5.6</b>	<b>5.6</b>
Norway			5.6	5.6	5.6	5.6
<b>Russia and Central Asia</b>			<b>13.0</b>	<b>15.0</b>	<b>15.0</b>	<b>15.7</b>
Russia			13.0	15.0	15.0	15.7
<b>Middle East</b>	<b>33.7</b>	<b>47.1</b>	<b>113.1</b>	<b>136.5</b>	<b>136.5</b>	<b>136.4</b>
Oman	7.1	9.8	14.1	14.1	14.1	14.1
Qatar	19.1	29.8	83.4	105.6	105.6	105.6
United Arab Emirates	7.6	7.6	7.6	7.6	7.6	7.6
Yemen			8.0	9.1	9.1	9.1
<b>Africa</b>	<b>42.0</b>	<b>55.0</b>	<b>81.7</b>	<b>83.0</b>	<b>83.0</b>	<b>83.0</b>
Algeria	31.8	28.1	27.9	31.1	31.1	31.1
Angola				7.1	7.1	7.1
Egypt		11.1	16.6	9.8	9.8	9.8
Equatorial Guinea			5.0	5.0	5.0	5.0
Libya	2.2	2.2	2.2			
Nigeria	8.1	13.6	30.1	30.1	30.1	30.1
<b>Asia - Pacific</b>	<b>83.1</b>	<b>88.7</b>	<b>114.1</b>	<b>126.8</b>	<b>153.7</b>	<b>177.4</b>
Australia	10.4	16.1	28.2	45.1	68.9	87.7
Brunei	9.8	9.8	10.1	10.1	10.0	10.1
Indonesia	41.3	32.0	42.3	26.7	28.6	28.6
Malaysia	21.6	30.8	33.7	34.9	36.2	41.0
Papua New Guinea				10.1	10.1	10.1
<b>Americas</b>	<b>6.1</b>	<b>15.6</b>	<b>26.0</b>	<b>28.7</b>	<b>36.0</b>	<b>48.9</b>
United States	2.0	2.0	2.0	2.0	9.3	22.2
Peru			3.3	6.0	6.0	6.0
Trinidad and Tobago	4.1	13.6	20.6	20.6	20.7	20.7
<b>World</b>	<b>164.9</b>	<b>206.4</b>	<b>353.5</b>	<b>395.6</b>	<b>429.8</b>	<b>467.0</b>

<sup>(\*)</sup> Nominal Capacity. Data source: Wood Mackenzie LNG Tool.



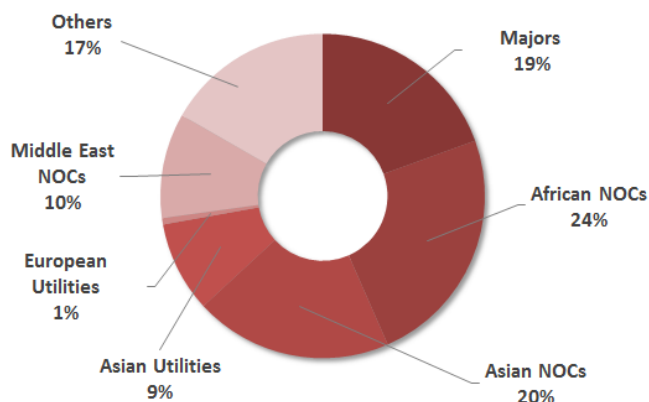
# Natural Gas - Trade and Prices

LNG - Liquefaction and Regasification Capacity

## Liquefaction Capacity - Cluster of Companies<sup>(\*)</sup>

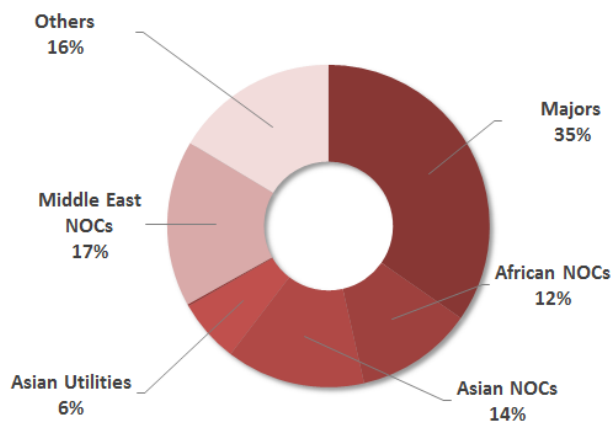
2000

World: 164.9 billion cubic metres



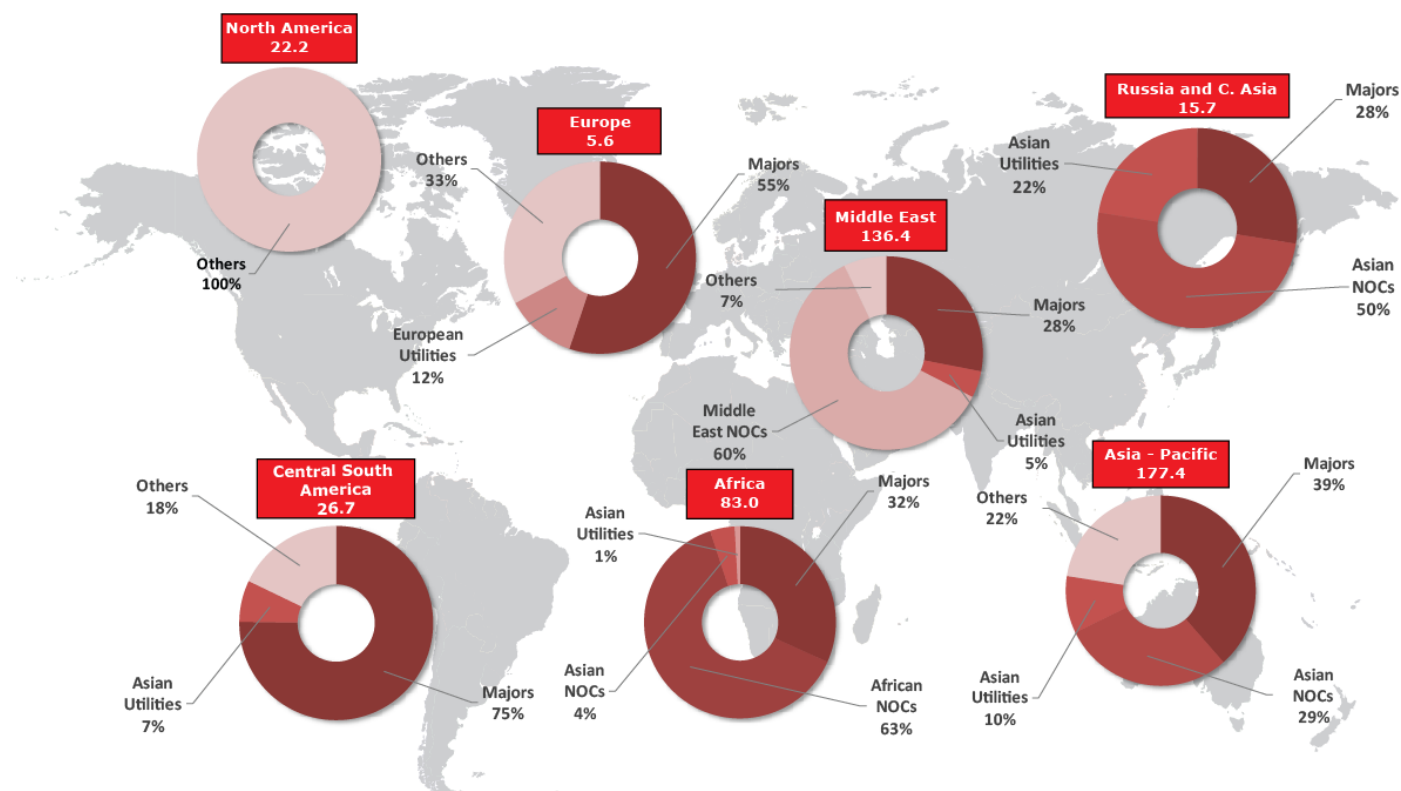
2017

World: 467.0 billion cubic metres



2017

(billion cubic metres)



<sup>(\*)</sup> **Majors:** BP, Chevron, ConocoPhillips, Eni, Equinor, ExxonMobil, Marathon Oil, Shell, Total. **African NOCs:** EGAS (Egyptian Natural Gas Holding Co.), EGPC (Egyptian General Petroleum Corporation), GEPetrol/Sonagas, National Libyan Oil Company (NOC), NNPC, Sonangol, Sonatrach. **Asian NOCs:** CNOOC, Gazprom, MRDC (Mineral Resources Dev. Co), Pertamina, Petronas, Sinopec. **Asian Utilities:** Chubu Electric, Hyundai, JILCO, Kansai Electric, KOGAS, Kyushu, LNG Japan Corporation, Marubeni, Mitsubishi, Mitsui, Osaka Gas, SK Corp., Tokyo Gas & Tokyo Electric. **European Utilities:** Gas Natural Fenosa, Engie. **Middle East NOCs:** ADNOC, KUFPEC, Yemen Gas Co.

# Natural Gas - Trade and Prices LNG - Liquefaction and Regasification Capacity

## Regasification Capacity - Countries<sup>(\*)</sup>

(billion cubic metres)

	2000	2005	2010	2015	2016	2017
<b>Europe</b>	<b>46.4</b>	<b>70.9</b>	<b>169.6</b>	<b>201.0</b>	<b>211.5</b>	<b>230.3</b>
Belgium	4.5	4.5	9.0	9.0	9.0	9.0
France	15.5	15.5	20.3	22.3	28.0	34.7
Greece	1.3	1.3	5.4	5.4	5.4	5.4
Italy	3.5	3.5	11.5	15.3	15.3	15.3
Lithuania				4.0	4.0	4.0
Malta					0.1	0.6
Netherlands				12.7	12.7	12.7
Poland				0.3	5.0	5.0
Portugal		5.6	5.6	8.3	8.3	8.3
Spain	15.2	34.2	62.4	63.6	63.6	63.6
Turkey	6.3	6.3	12.3	12.3	12.5	24.0
United Kingdom			43.2	47.9	47.9	47.9
<b>Middle East</b>			<b>5.5</b>	<b>17.1</b>	<b>25.4</b>	<b>28.5</b>
Israel				2.7	2.7	2.7
Jordan				3.1	5.2	5.2
Kuwait			5.2	6.6	6.6	6.6
United Arab Emirates			0.3	4.7	10.9	14.0
<b>Africa</b>				<b>4.8</b>	<b>10.3</b>	<b>10.3</b>
Egypt				4.8	10.3	10.3
<b>Asia - Pacific</b>	<b>278.9</b>	<b>346.2</b>	<b>428.8</b>	<b>564.6</b>	<b>587.3</b>	<b>619.9</b>
China			17.6	63.5	71.2	81.1
India		9.4	18.4	34.1	36.3	41.5
Indonesia				10.1	11.1	11.2
Japan	227.3	243.3	258.6	283.2	288.1	290.4
Malaysia				5.2	5.2	6.0
Pakistan				4.7	6.2	6.7
Singapore				8.2	8.2	8.2
South Korea	45.6	82.8	115.1	128.0	130.4	136.2
Taiwan	5.9	10.7	19.1	21.0	23.7	25.5
Thailand				6.8	6.8	13.1
<b>Americas</b>	<b>11.5</b>	<b>34.5</b>	<b>188.9</b>	<b>243.7</b>	<b>244.9</b>	<b>249.0</b>
Argentina			4.1	11.3	11.3	11.3
Brazil			7.7	14.9	14.9	14.9
Canada			10.3	10.3	10.3	10.3
Chile			5.3	7.3	7.5	7.5
Colombia				0.0	0.7	4.1
Dominican Republic		2.6	2.6	3.9	3.9	3.9
Jamaica				0.0	0.4	1.0
Mexico			15.5	20.7	20.7	20.7
United States (**)	11.5	31.9	143.4	175.3	175.3	175.3
<b>World</b>	<b>336.7</b>	<b>451.6</b>	<b>792.8</b>	<b>1,031.1</b>	<b>1,079.5</b>	<b>1,138.0</b>

<sup>(\*)</sup> Data source: Wood Mackenzie *LNG Tool*.

<sup>(\*\*)</sup> The United States includes Puerto Rico.

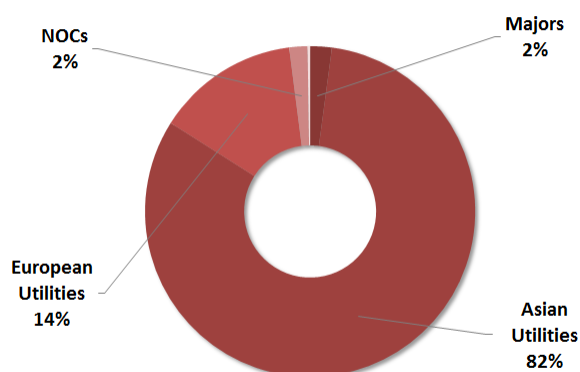
# Natural Gas - Trade and Prices

LNG - Liquefaction and Regasification Capacity

## Regasification Capacity - Cluster of Companies<sup>(\*)</sup>

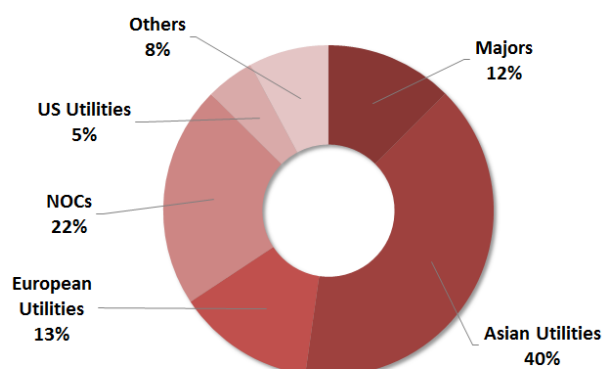
2000

World: 336.7 billion cubic metres



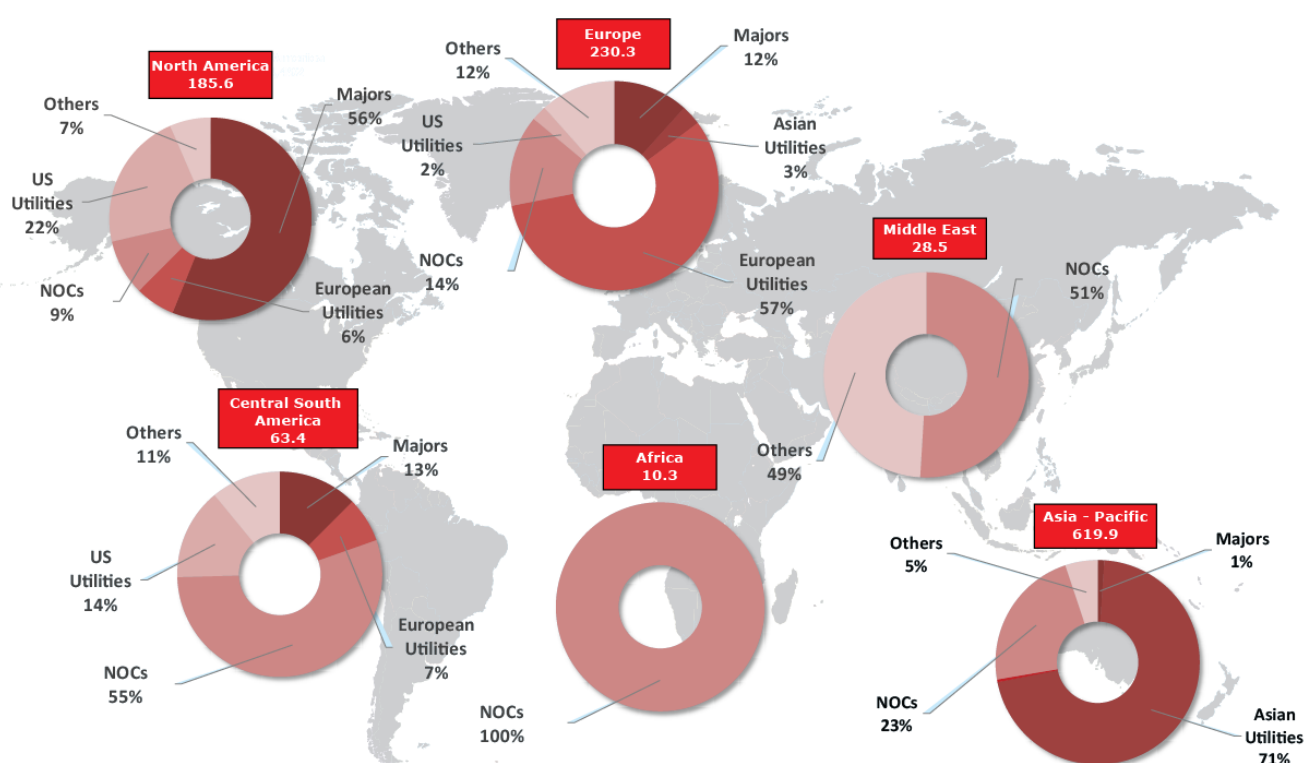
2017

World: 1,138 billion cubic metres



2017

(billion cubic metres)



<sup>(\*)</sup> **Majors:** BP, Chevron, ConocoPhillips, Eni, Equinor, ExxonMobil, Marathon Oil, Shell, Total. **NOCs:** ADNOC, BPCL (Bharat Petroleum Corporation Limited), CFE, CNOOC, CPC, Egas, Enap, Enarsa, Gazprom, IOC (Indian Oil Corporation), Kuwait National Petroleum Corp., Oman Oil, ONGC, Pertamina, Petrobras, PetroChina, Petronas, PGNiG, PTT, Qatar Petroleum, Sinopec, Sonangol, Sonatrach. **Asian Utilities:** Chubu Electric Power, Chugoku Electric Power, Egegaz, GAIL, Hiroshima Gas, Hokkaido Gas, HongKong & China Gas, HongKong Electric, Kansai Electric Power, KOGAS, K-Power, Kyushu Electric Power, Maharashtra Utility, Mitsui, Nippon Gas, NTPC, Oita Gas, Okinawa Electric Power, Osaka Gas, Perusahaan Gas Negara, POSCO, Saibu Gas, Shenergy, Shenzhen Gas Corp, Shikoku Electric Power, Shizouka Gas, Singapore LNG Corp, Toho Gas, Tohoku Electric, Tokyo Electric Power, Tokyo Gas. **European Utilities:** Botas, Centrica, CPSA, Depa, DONG Energy, E.ON, EconGas, EdF, Enagas, Enel, Engie, Essent, EVE, Gas Natural Fenosa, Gasunie, Iberdrola, Iren, SNAM, Union Fenosa Gas. **US Utilities:** AES, Cheniere, Dominion, Dow Chemical, Exceleate Energy, Freeport LNG Development LP, Sempra Energy, Southern Union.

# Natural Gas - Trade and Prices

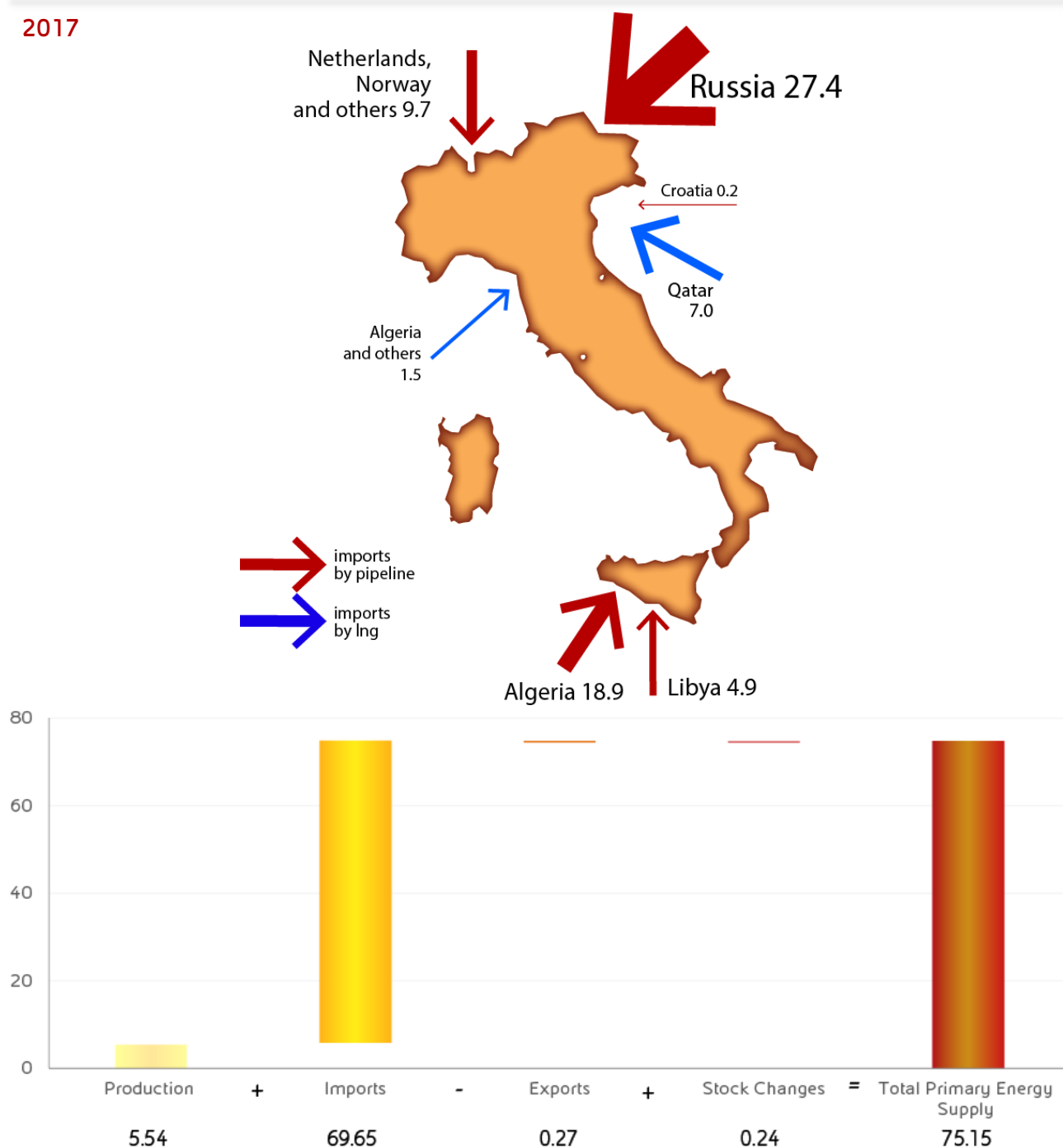
## Natural Gas Balance - Italy

### Italy (\*)

(billion cubic metres)

	2000	2005	2010	2015	2016	2017
Production	16.63	12.07	8.41	6.77	5.79	5.54
Imports	57.45	73.46	75.35	61.20	65.28	69.65
Exports	-0.05	-0.40	-0.14	-0.22	-0.21	-0.27
Stock Changes	-3.29	1.13	-0.52	-0.23	0.06	0.24
Total Primary Energy Supply	70.75	86.27	83.10	67.52	70.91	75.15

### 2017



(\*) Data source: Italian Ministry for Economic Development. Gas volumes are quoted in Italian calorific value of 38.1 MJ/cm.

# Natural Gas - Trade and Prices

## Natural Gas Prices

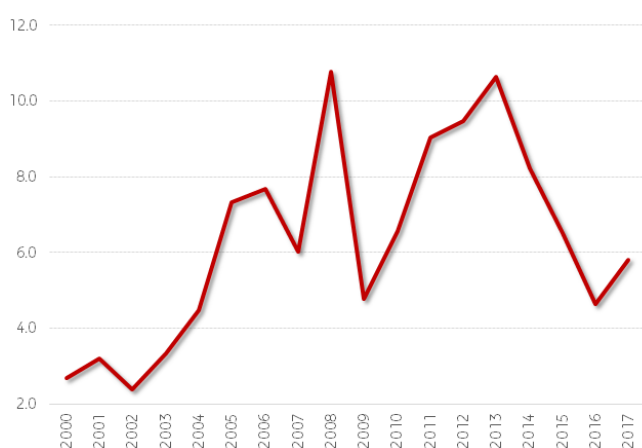
### Natural Gas Prices(\*)

(\$/Mbtu)

	2000	2005	2010	2015	2016	2017	$\Delta$ y/y (2017-2016)	CAGR (2017-2000)
NBP	2.7	7.3	6.6	6.5	4.6	5.8	24.7%	4.6%
Henry Hub	4.3	8.7	4.4	2.6	2.5	3.0	18.8%	-2.2%
LNG Asia			7.4	7.8	5.8	7.0	21.6%	

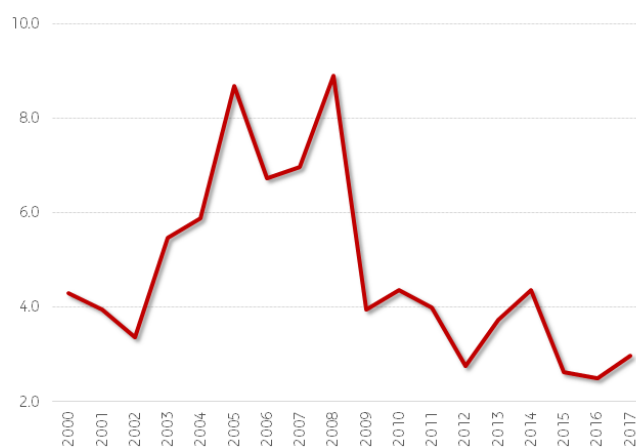
### NBP(\*)

(\$/Mbtu)



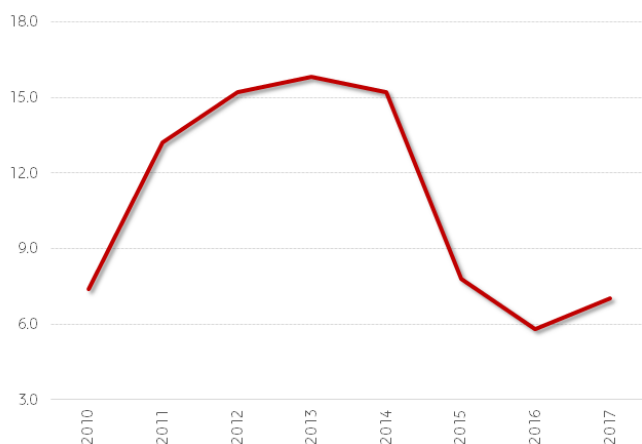
### Henry Hub(\*)

(\$/Mbtu)



### LNG Asia(\*)

(\$/Mbtu)

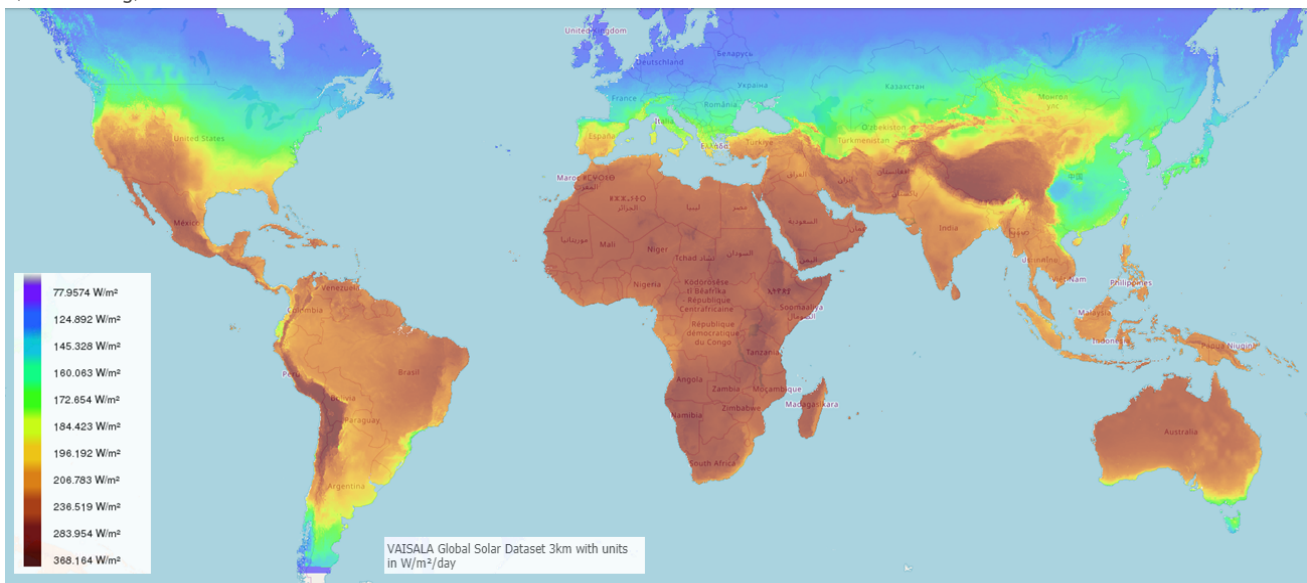


(\*) Data source: ICE London, Woodmackenzie and EIA DOE.

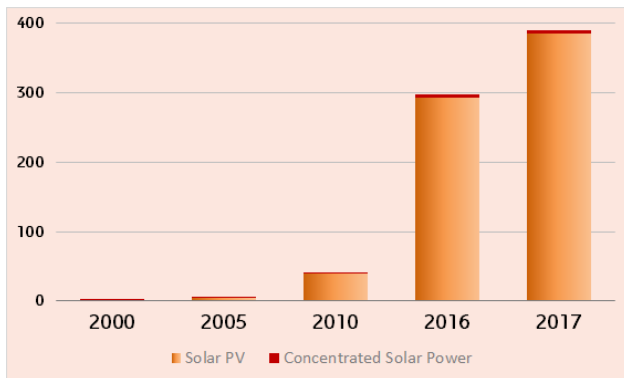




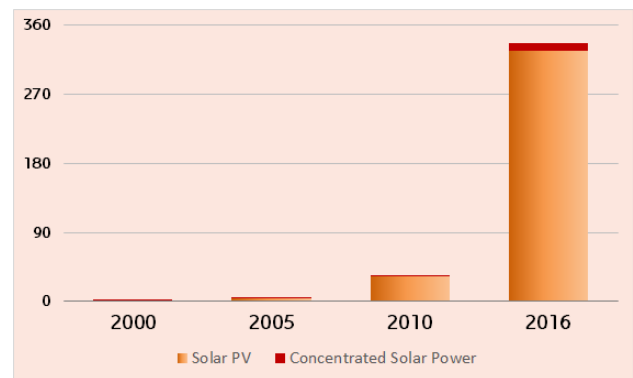
**Solar Resources Map (Global Horizontal Irradiance) (\*)**  
(W/m<sup>2</sup>/day)



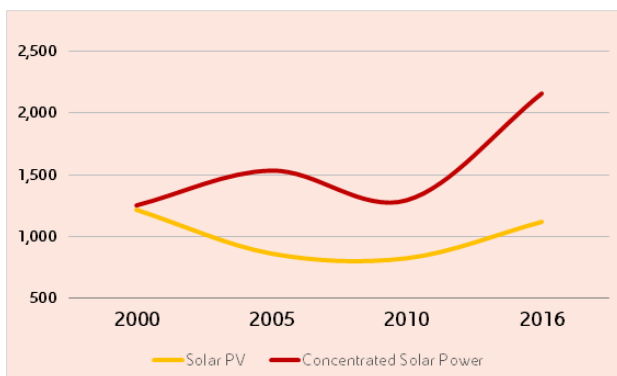
**Solar Power Capacity**  
(GW)



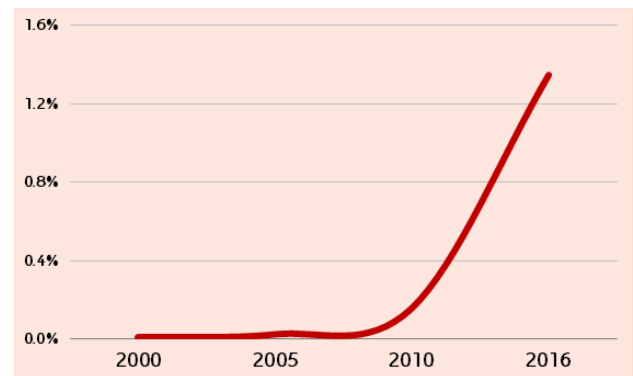
**Solar Power Generation**  
(TWh)



**Capacity Factor**  
(hours per year - world average)



**Share of Solar on Total Power Generation**



(\*) Source: IRENA: Global Atlas, Map Data: "Vaisala Global Solar Dataset, 2018", "2018 Google Hybrid Map".



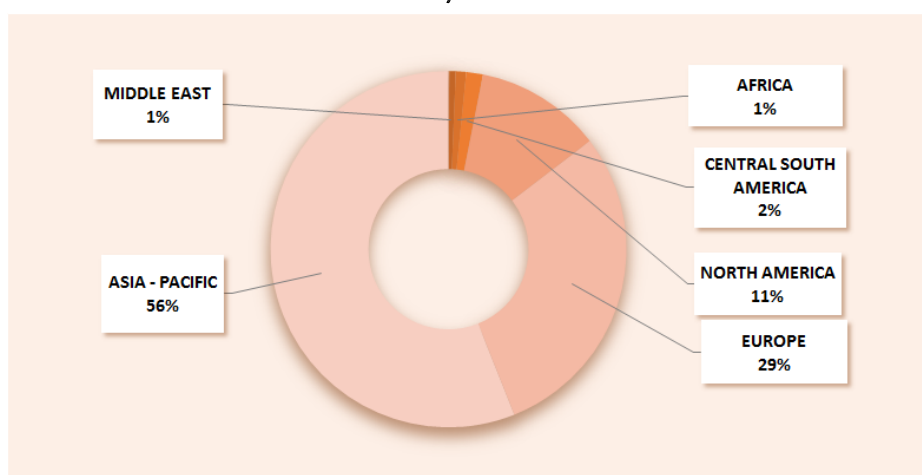
### Areas and Aggregates (\*)

(MW)

	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)	CAGR (2017-2000)
Europe	201	2,335	30,134	97,236	104,388	112,902	8.2%	45.1%
Russia and Central Asia			0	125	164	285	74.6%	
Middle East	0	1	85	1,046	1,692	2,244	32.6%	67.5%
Africa	15	37	211	1,878	2,924	3,630	24.2%	38.2%
Asia - Pacific	396	1,606	5,333	93,717	144,071	215,526	49.6%	44.8%
Americas	202	550	3,296	26,282	38,931	50,033	28.5%	38.3%
- North America	183	510	3,130	24,201	35,761	44,211	23.6%	38.1%
- Central South America	19	40	166	2,081	3,170	5,822	83.6%	40.0%
<b>World</b>	<b>815</b>	<b>4,529</b>	<b>39,059</b>	<b>220,284</b>	<b>292,170</b>	<b>384,621</b>	<b>31.6%</b>	<b>43.6%</b>
European Union	179	2,297	29,989	94,685	100,823	106,158	5.3%	45.6%
MENA	8	14	119	1,171	2,023	2,891	42.9%	41.4%
OECD	757	4,348	37,995	161,595	190,036	216,618	14.0%	39.5%
NON OECD	58	181	1,064	58,689	102,134	168,003	64.5%	59.9%
OPEC	1	4	42	327	576	1,055	83.2%	53.9%
NON OPEC	814	4,525	39,017	219,956	291,594	383,566	31.5%	43.6%

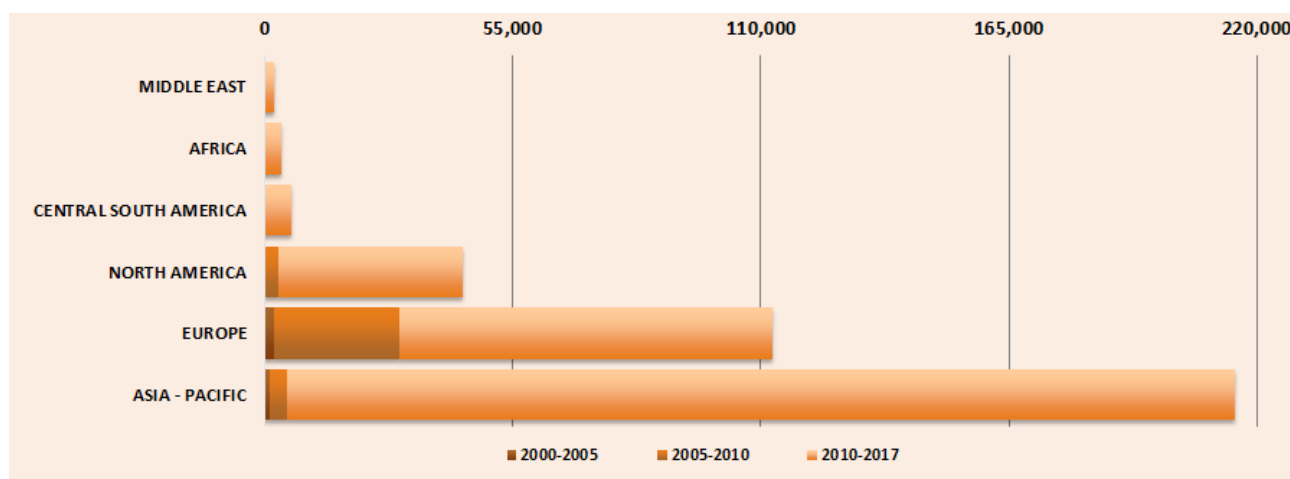
### World Solar Photovoltaic Power Capacity (2017)

384,621 MW



### World Solar Photovoltaic Power Capacity Growth (2000-2017)

383,806 MW

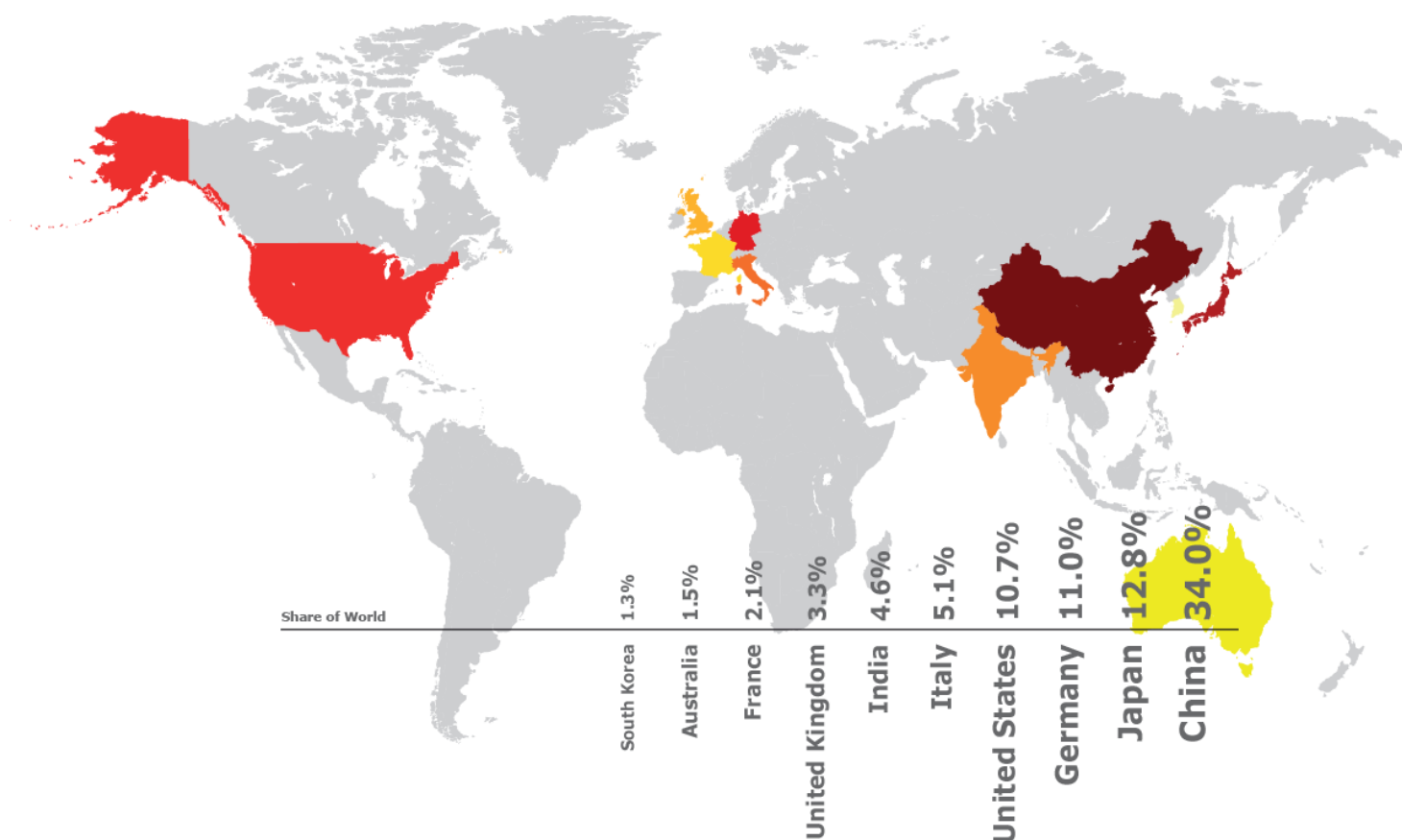


(\*) Data source: Eni's calculations on IRENA (2018), Renewable Energy Statistics 2018, The International Renewable Energy Agency, Abu Dhabi, data.

### The World Top 10 (\*) (MW)

	2000	2005	2010	2015	2016	2017	$\Delta$ y/y (2017-2016)	CAGR (2017-2000)
China	34	85	414	42,988	77,556	130,632	68.4%	62.6%
Japan	330	1,422	3,618	34,150	42,040	49,040	16.7%	34.2%
Germany	114	2,056	18,005	39,243	40,714	42,394	4.1%	41.6%
United States	176	493	2,909	21,684	33,100	41,273	24.7%	37.9%
Italy	19	34	3,592	18,901	19,283	19,692	2.1%	50.4%
India	1	10	61	5,168	9,418	17,644	87.3%	76.9%
United Kingdom	2	11	95	9,535	11,899	12,760	7.2%	67.4%
France	7	13	1,044	6,755	7,320	8,195	12.0%	51.5%
Australia	25	52	399	4,357	4,718	5,929	25.7%	37.9%
South Korea	4	14	650	3,613	4,502	5,062	12.4%	52.2%
<b>The World Top 10</b>	<b>712</b>	<b>4,189</b>	<b>30,787</b>	<b>186,394</b>	<b>250,550</b>	<b>332,621</b>	<b>32.8%</b>	<b>43.6%</b>
Rest of the World	103	340	8,272	33,890	41,620	52,000	24.9%	44.2%
<b>World</b>	<b>815</b>	<b>4,529</b>	<b>39,059</b>	<b>220,284</b>	<b>292,170</b>	<b>384,621</b>	<b>31.6%</b>	<b>43.6%</b>

### The World Top 10 (2017)



(\*) Data source: IRENA (2018), Renewable Energy Statistics 2018, The International Renewable Energy Agency, Abu Dhabi.

# Renewables

## Solar Photovoltaic Power Capacity

### Countries (\*)

(MW)

	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)	CAGR (2017-2000)
<b>Europe</b>	<b>201</b>	<b>2,335</b>	<b>30,134</b>	<b>97,236</b>	<b>104,388</b>	<b>112,902</b>	<b>8.2%</b>	<b>45.1%</b>
Albania		0	0	1	1	2	14.3%	
Austria	5	30	154	937	1,096	1,404	28.1%	39.3%
Belarus				13	51	153	202.2%	
Belgium		2	904	3,122	3,300	3,571	8.2%	
Bosnia Herzegovina		0	0	10	12	12	3.4%	
Bulgaria			25	1,029	1,028	1,030	0.2%	
Croatia				48	56	58	3.6%	
Cyprus		1	7	76	84	105	24.9%	
Czech Republic	0	1	1,727	2,075	2,068	2,061	-0.3%	79.4%
Denmark	1	3	7	782	851	906	6.5%	49.3%
Estonia			0	7	11	11	0.0%	
Finland	2	4	7	15	35	50	42.9%	20.8%
France	7	13	1,044	6,755	7,320	8,195	12.0%	51.5%
Macedonia				17	17	17	1.2%	
Germany	114	2,056	18,005	39,243	40,714	42,394	4.1%	41.6%
Greece		1	202	2,604	2,604	2,604	0.0%	
Hungary			2	168	220	300	36.4%	
Ireland			1	2	6	10	66.7%	
Italy	19	34	3,592	18,901	19,283	19,692	2.1%	50.4%
Latvia				0	1	1	0.0%	
Lithuania			0	69	70	82	17.1%	
Luxembourg		24	29	116	122	122	0.0%	
Malta		0	1	74	93	110	18.3%	
Moldova				1	2	2	0.0%	
Montenegro			1	3	3	3	9.7%	
Netherlands	13	51	90	1,515	2,049	2,590	26.4%	36.5%
Norway	6	7	9	15	27	42	58.1%	12.2%
Poland				108	187	268	43.5%	
Portugal	1	2	134	447	462	476	3.0%	43.7%
Romania			0	1,326	1,372	1,378	0.4%	
Serbia		0	1	9	11	12	9.1%	
Slovakia			19	533	533	533	0.0%	
Slovenia			12	238	233	236	1.5%	
Spain	12	60	3,921	4,856	4,973	4,978	0.1%	42.6%
Sweden	3	4	11	104	153	233	52.3%	29.2%
Switzerland	16	28	125	1,394	1,664	1,924	15.6%	32.5%
Turkey	0	2	6	249	833	3,421	310.6%	84.8%
Ukraine			3	839	938	1,149	22.5%	
United Kingdom	2	11	95	9,535	11,899	12,760	7.2%	67.4%
Others Europe					7	7	0.0%	

	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)	CAGR (2017-2000)
<b>Russia and Central Asia</b>			<b>0</b>	<b>125</b>	<b>164</b>	<b>285</b>	<b>74.6%</b>	
Russia				62	77	186	142.1%	
Armenia					1	2	140.0%	
Azerbaijan			0	5	25	35	38.4%	
Kazakhstan				57	57	59	2.6%	
Uzbekistan				1	4	4	11.4%	

(\*) Data source: IRENA (2018), Renewable Energy Statistics 2018 The International Renewable Energy Agency, Abu Dhabi.

## Countries (\*)

(MW)

	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)	CAGR (2017-2000)
<b>Middle East</b>	<b>0</b>	<b>1</b>	<b>85</b>	<b>1,046</b>	<b>1,692</b>	<b>2,244</b>	<b>32.6%</b>	
Bahrain				5	5	5	0.0%	
Iran		0	0	9	43	111	157.4%	
Iraq				37	37	37	0.0%	
Israel		1	70	766	816	846	3.7%	
Jordan				29	296	396	34.0%	
Kuwait				3	31	31	0.0%	
Lebanon			0	10	18	26	46.9%	
Oman				2	2	8	272.7%	
Qatar				4	5	5	0.0%	
Saudi Arabia	0	0	2	74	74	89	20.2%	38.5%
Syria						1		
United Arab Emirates			11	35	42	255	509.1%	
Yemen			1	60	300	400	33.3%	
Others Middle East				12	25	35	40.0%	

	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)	CAGR (2017-2000)
<b>Africa</b>	<b>15</b>	<b>37</b>	<b>211</b>	<b>1,878</b>	<b>2,924</b>	<b>3,630</b>	<b>24.2%</b>	<b>38.2%</b>
Algeria				49	219	400	82.6%	
Angola		1	7	13	13	13	0.0%	
Benin	0	0	0	5	8	8	0.0%	33.4%
Cameroon		0	1	7	9	9	0.0%	
Chad				0	0	0	0.0%	
Congo				1	2	4	68.2%	
Dem. Rep. Congo				1	1	1	0.0%	
Cote d'Ivoire	0	0	2	5	5	5	0.0%	34.5%
Egypt	0	1	15	25	48	169	252.1%	54.8%
Equatorial Guinea						5		
Ethiopia			0	11	13	14	7.7%	
Gabon		0	1	1	1	1	0.0%	
Ghana			1	8	28	28	0.0%	
Guinea Equatorial			1	2	2	2	0.0%	
Kenya	4	9	11	24	26	28	7.8%	12.2%
Libya		1	4	5	5	5	4.1%	
Madagascar		0	2	9	11	13	18.2%	
Mauritania				18	35	85	143.7%	
Morocco	7	10	14	20	22	26	16.4%	8.2%
Mozambique				10	13	15	15.4%	
Namibia	1	2	4	27	32	37	17.4%	23.9%
Niger	1	1	2	7	8	9	12.5%	18.5%
Nigeria				17	18	19	2.2%	
Rwanda			0	9	9	13	37.2%	
Senegal	1	2	3	11	43	85	97.7%	29.9%
Sierra Leone				0	0	1	100.0%	
Somalia				1	2	2	0.0%	
South Africa			2	1,252	1,974	2,186	10.8%	
Sudan		0	2	11	12	13	2.4%	
Tanzania		2	4	9	11	11	6.6%	
Tunisia	1	1	2	27	37	47	27.0%	26.8%
Uganda	0	3	15	22	34	46	35.3%	37.7%
Zambia		1	1	3	3	4	16.7%	
Zimbabwe		1	2	6	7	7	0.0%	
Others Africa	1	3	115	264	273	321	17.8%	46.3%

(\*) Data source: IRENA (2018), Renewable Energy Statistics 2018, The International Renewable Energy Agency, Abu Dhabi.

## Countries (\*)

(MW)

	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)	CAGR (2017-2000)
<b>Asia - Pacific</b>	<b>396</b>	<b>1,606</b>	<b>5,333</b>	<b>93,717</b>	<b>144,071</b>	<b>215,526</b>	<b>49.6%</b>	<b>44.8%</b>
Afghanistan			0	19	20	22	8.9%	
Australia	25	52	399	4,357	4,718	5,929	25.7%	37.9%
Bangladesh	0	2	32	149	164	176	7.3%	81.5%
Brunei			1	1	1	1	0.0%	
China	34	85	414	42,988	77,556	130,632	68.4%	62.6%
India	1	10	61	5,168	9,418	17,644	87.3%	76.9%
Indonesia	0	1	15	50	57	58	1.6%	35.3%
Japan	330	1,422	3,618	34,150	42,040	49,040	16.7%	34.2%
Malaysia			13	263	340	362	6.6%	
Mongolia		0	5	5	5	25	400.0%	
Myanmar			0	16	25	25	0.0%	
Nepal	0	2	5	30	30	30	0.7%	50.5%
Nord Korea		0	1	8	10	11	3.9%	
New Zealand			3	38	42	67	60.5%	
Pakistan			9	230	410	730	78.0%	
Philippines		1	1	165	765	885	15.7%	
Singapore			4	60	126	143	13.7%	
South Korea	4	14	650	3,613	4,502	5,062	12.4%	52.2%
Sri Lanka	1	12	20	37	47	70	49.3%	28.2%
Taiwan	0	1	22	842	1,210	1,733	43.2%	77.6%
Thailand			49	1,420	2,446	2,697	10.3%	
Vietnam				4	7	8	14.3%	
Others Asia - Pacific	1	4	12	105	132	175	32.9%	34.2%

	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)	CAGR (2017-2000)
<b>Americas</b>	<b>202</b>	<b>550</b>	<b>3,296</b>	<b>26,282</b>	<b>38,931</b>	<b>50,033</b>	<b>28.5%</b>	<b>38.3%</b>
Argentina	0	0	0	9	9	9	0.0%	41.2%
Barbados		0	1	9	19	19	0.0%	
Belize	0	0	1	4	4	4	0.0%	42.0%
Bolivia	0	1	3	13	13	13	0.0%	24.7%
Brazil			1	23	80	1,097	1271.3%	
Canada	7	17	221	2,517	2,661	2,938	10.4%	42.7%
Chile				576	1,125	2,110	87.6%	
Colombia	1	7	17	63	63	73	15.5%	27.3%
Costa Rica	0	3	6	23	24	28	18.6%	32.1%
Cuba				24	37	65	75.7%	
Dominican Republic				23	68	103	50.8%	
Ecuador		0		26	26	27	3.5%	
El Salvador	0	1	4	41	48	140	194.7%	46.5%
Guatemala	0	0	1	93	93	99	6.4%	55.0%
Haiti				1	1	1	37.5%	
Honduras	2	3	4	393	414	451	8.9%	39.4%
Jamaica		0	1	7	28	28	0.0%	
Mexico	14	16	29	173	389	570	46.7%	24.4%
Nicaragua	0	1	4	10	19	30	59.8%	44.0%
Panama	0	1	2	49	93	147	57.7%	46.0%
Peru	1	5	13	139	146	153	5.0%	35.5%
Suriname			0	6	6	6	0.0%	
Trinidad and Tobago	0	2	3	3	3	3	0.0%	24.4%
Uruguay			0	65	90	239	165.8%	
United States	176	493	2,909	21,684	33,100	41,273	24.7%	37.9%
Venezuela			2	5	5	5	0.0%	
Others Americas	0	1	76	305	370	402	8.8%	55.4%

(\*) Data source: IRENA (2018), Renewable Energy Statistics 2018, The International Renewable Energy Agency, Abu Dhabi.

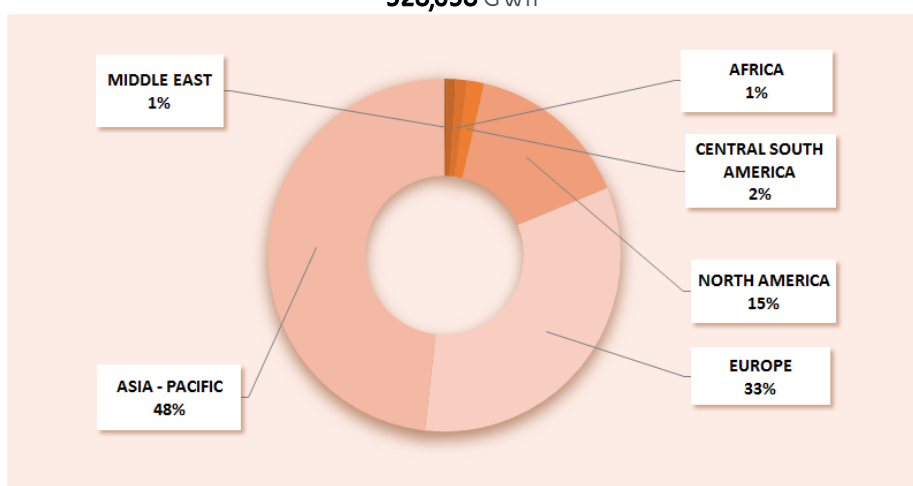
### Areas and Aggregates (\*)

(GWh)

	2000	2005	2010	2015	2016	2017	$\Delta$ y/y (2017-2016)**	CAGR (2017-2000)**
Europe	129	1,481	22,599	104,138	108,177	119,146	10.1%	49.4%
Russia and Central Asia				388	587		51.3%	
Middle East			70	1,906	2,869		50.5%	
Africa	3	10	307	2,797	3,305		18.2%	54.9%
Asia - Pacific	624	1,811	5,792	103,263	158,254		53.3%	41.3%
Americas	232	601	3,414	37,921	54,846		44.6%	40.7%
- North America	199	541	3,318	34,986	49,664		42.0%	41.2%
- Central South America	33	60	96	2,935	5,182		76.6%	37.2%
<b>World</b>	<b>988</b>	<b>3,903</b>	<b>32,182</b>	<b>250,413</b>	<b>328,038</b>		<b>31.8%</b>	<b>44.6%</b>
European Union	118	1,460	22,505	102,304	105,220	114,082	8.4%	49.8%
MENA			285	1,997	3,196		60.0%	
OECD	735	3,543	30,700	181,341	220,418		21.5%	39.9%
NON OECD	253	360	1,482	69,072	107,620		55.8%	46.0%
OPEC			7	164	259		57.9%	
NON OPEC	988	3,903	32,175	250,249	327,779		31.0%	43.7%

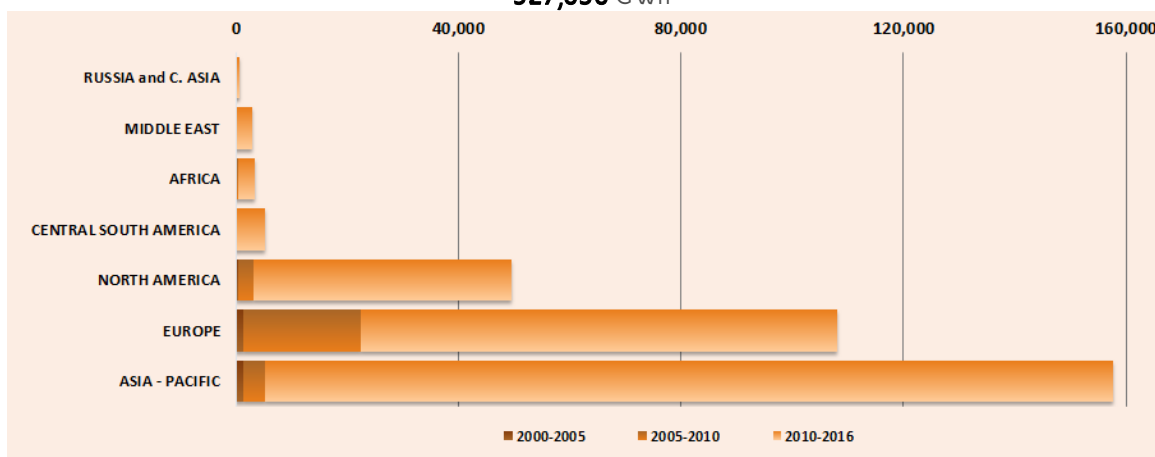
### World Solar Photovoltaic Power Generation (2016)

328,038 GWh



### World Solar Photovoltaic Power Generation Growth (2000-2016)

327,050 GWh



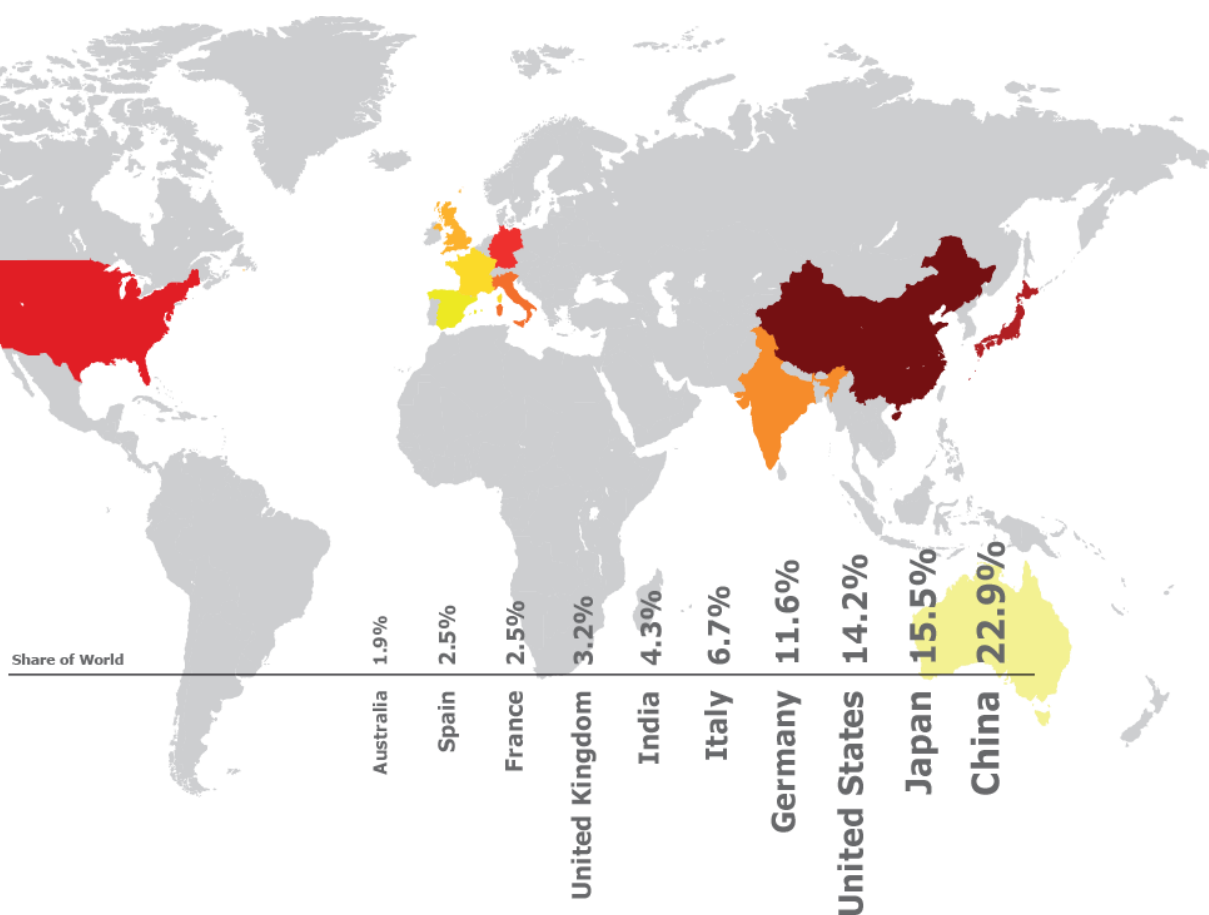
(\*) Data source: Eni's calculations on IEA Extended Balances ° OECD/International Energy Agency, 2018 data.

(\*\*) When 2017 data is missing, the figure refers to the latest available years.

### The World Top 10<sup>(\*)</sup> (GWh)

	2000	2005	2010	2015	2016	2017	$\Delta$ y/y (2017-2016)**	CAGR (2017-2000)**
China	22	84	699	44,782	75,256		68.0%	66.3%
Japan	357	1,420	3,543	34,802	50,952	61,261	20.2%	35.3%
United States	183	524	3,063	32,091	46,633		45.3%	41.4%
Germany	60	1,282	11,729	38,726	38,098	39,895	4.7%	46.6%
Italy	18	31	1,906	22,942	22,104	25,207	14.0%	53.1%
India		3	113	10,478	14,130		34.9%	
United Kingdom	1	8	40	7,546	10,421	11,479	10.2%	73.3%
France	5	11	620	7,262	8,160	9,163	12.3%	55.6%
Spain	18	41	6,425	8,266	8,070	8,512	5.5%	43.7%
Australia	38	78	386	5,019	6,205	8,066	30.0%	37.0%
<b>The World Top 10</b>	<b>702</b>	<b>3,482</b>	<b>28,524</b>	<b>211,914</b>	<b>280,029</b>		<b>32.1%</b>	<b>45.4%</b>
Rest of the World	286	421	3,658	38,499	48,009		24.7%	37.7%
<b>World</b>	<b>988</b>	<b>3,903</b>	<b>32,182</b>	<b>250,413</b>	<b>328,038</b>		<b>31.0%</b>	<b>43.7%</b>

### The World Top 10 (2016)



(\*) Data source: IEA Extended Balances © OECD/International Energy Agency, 2018.

(\*\*) When 2017 data is missing, the figure refers to the latest available years.

# Renewables

## Solar Photovoltaic Power Generation

### Countries (\*)

(GWh)

	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)	CAGR (2017-2000)
<b>Europe</b>	<b>129</b>	<b>1,481</b>	<b>22,599</b>	<b>104,138</b>	<b>108,177</b>	<b>119,146</b>	<b>3.9%</b>	<b>52.3%</b>
Austria	3	21	89	937	1,096	1,248	13.9%	42.6%
Belarus				8	28	28	0.0%	
Belgium		1	560	3,053	3,086	3,046	-1.3%	
Bosnia					24	24	0.0%	
Bulgaria			15	1,383	1,386	1,390	0.3%	
Croatia				57	66	79	19.7%	
Cyprus		1	7	126	146	161	10.3%	
Czech Republic			616	2,264	2,131	2,188	2.7%	
Denmark	1	2	6	604	744	789	6.0%	48.1%
Finland	2	3	5	9	17	27	58.8%	16.5%
France	5	11	620	7,262	8,160	9,163	12.3%	55.6%
Macedonia				23	24	24	0.0%	
Germany	60	1,282	11,729	38,726	38,098	39,895	4.7%	46.6%
Greece		1	158	3,900	3,930	3,992	1.6%	
Hungary			1	123	201	354	76.1%	
Ireland				2	4	5	25.0%	
Italy	18	31	1,906	22,942	22,104	25,207	14.0%	53.1%
Lithuania				73	66	66	-9.6%	
Luxembourg		18	21	104	100	102	2.0%	
Malta			1	93	125	155	24.0%	
Moldova				2	2	2	0.0%	
Netherlands	8	35	56	1,122	1,560	2,099	34.6%	41.6%
Poland				57	124	167	34.7%	
Portugal	1	3	211	796	822	971	18.1%	53.7%
Romania				1,982	1,820	1,882	3.4%	
Serbia			-	11	12	13	8.3%	
Slovakia			17	506	533	592	11.1%	
Slovenia			13	274	267	284	6.4%	
Spain	18	41	6,425	8,266	8,070	8,512	5.5%	47.0%
Sweden	1	2	9	97	143	229	60.1%	40.4%
Switzerland	11	21	94	1,119	1,333	1,600	20.0%	36.5%
Turkey				194	1,043	2,889	177.0%	
Ukraine				477	491	484	-1.4%	
United Kingdom	1	8	40	7,546	10,421	11,479	10.2%	79.4%

	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)**	CAGR (2017-2000)
<b>Russia and Central Asia</b>				<b>388</b>	<b>587</b>		<b>51.3%</b>	
Russia				335	462	544	17.7%	
Armenia				1	1	1	0.0%	
Azerbaijan				5	35	37	5.7%	
Kazakhstan				47	89		89%	

	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)**	CAGR (2017-2000)
<b>Middle East</b>			<b>70</b>	<b>1,906</b>	<b>2,869</b>		<b>50.5%</b>	
Iran				1	4		300.0%	
Israel			70	1,115	1,544	1,557	0.8%	
Jordan				2	491		24450.0%	
Kuwait				2	2		0.0%	
Saudi Arabia				1	1	1	0.0%	
United Arab Emirates				53	95		79.2%	
Yemen				732	732		0.0%	

(\*) Data source: IEA Extended Balances © OECD/International Energy Agency, 2018.

(\*\*) When 2017 data is missing, the figure refers to the latest available years.



## Countries (\*)

(GWh)

	2000	2005	2010	2015	2016	2017	$\Delta$ y/y (2017-2016)**	CAGR (2017-2000)**
<b>Africa</b>	<b>3</b>	<b>10</b>	<b>307</b>	<b>2,797</b>	<b>3,305</b>		<b>18.2%</b>	<b>54.9%</b>
Algeria				58	87		50.0%	
Benin				5	5		0.0%	
Egypt			206	168	168		0.0%	
Gabon				2	2		0.0%	
Ghana				3	27		800.0%	
Kenya				1	1		0.0%	
Libya		2	6	8	8		0.0%	
Morocco				1	1		0.0%	
Mozambique						1		
Niger		2	3	4	5		25.0%	
Senegal	2	4	3	4	6		50.0%	7.1%
South Africa				2,183	2,600		19.1%	
Tanzania			7	21	25		19.0%	
Tunisia			1	41	63		53.7%	
Others Africa	1	2	81	298	307		3.0%	46.2%

	2000	2005	2010	2015	2016	2017	$\Delta$ y/y (2017-2016)**	CAGR (2017-2000)**
<b>Asia - Pacific</b>	<b>624</b>	<b>1,811</b>	<b>5,792</b>	<b>103,263</b>	<b>158,254</b>		<b>53.3%</b>	<b>41.3%</b>
Australia	38	78	386	5,019	6,205	8,066	30.0%	37.0%
Bangladesh				154	165		7.1%	
Brunei				2	1		-50.0%	
China	22	84	699	44,782	75,256		68.0%	66.3%
Hong Kong				1	1		0.0%	
India		3	113	10,478	14,130		34.9%	
Indonesia			1	5	21		320.0%	
Japan	357	1,420	3,543	34,802	50,952	61,261	20.2%	35.3%
Malaysia				273	310		13.6%	
New Zealand			4	34	52	72	38.5%	
Philippines		2	1	139	1,097		689.2%	
Singapore			5	64	136		112.5%	
South Korea	5	15	772	3,975	5,123	6,975	36.2%	53.1%
Sri Lanka	8	14	17	21	23		9.5%	6.8%
Taiwan		1	23	876	1,132		29.2%	
Thailand			20	2,378	3,377	4,512	33.6%	
Others Asia - Pacific	194	194	208	260	273		5.0%	2.2%

	2000	2005	2010	2015	2016	2017	$\Delta$ y/y (2017-2016)**	CAGR (2017-2000)**
<b>Americas</b>	<b>232</b>	<b>601</b>	<b>3,414</b>	<b>37,921</b>	<b>54,846</b>		<b>44.6%</b>	<b>40.7%</b>
Argentina				15	14		-6.7%	
Bolivia			3	11	11		0.0%	
Brazil				59	85	832	878.8%	
Canada	16	17	255	2,895	3,031	3,292	8.6%	36.8%
Chile				1,261	2,639	3,896	47.6%	
Costa Rica				3	3		0.0%	
Cuba				31	41		32.3%	
Dominican Republic				179	308		72.1%	
Ecuador				36	39		8.3%	
Guatemala				150	193		28.7%	
Mexico	7	9	31	246	252	360	42.9%	26.1%
Panama				16	71		343.8%	
Peru				230	241		4.8%	
Uruguay				49	152		210.2%	
United States	183	524	3,063	32,091	46,633		45.3%	41.4%
Others Americas	26	51	62	649	1,133		74.6%	26.6%

(\*) Data source: IEA Extended Balances © OECD/International Energy Agency, 2018.

(\*\*) When 2017 data is missing, the figure refers to the latest available years.

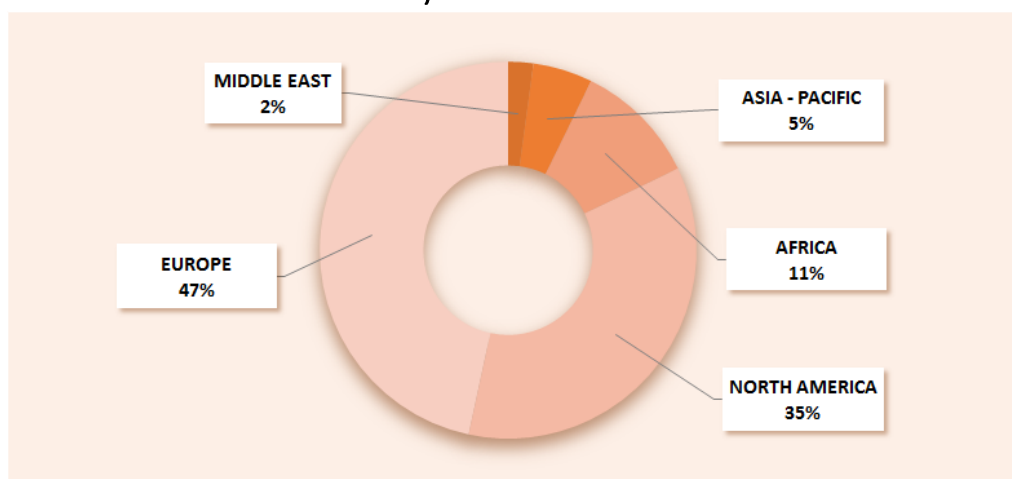
### Areas and Aggregates (\*)

(MW)

	2000	2005	2010	2015	2016	2017	$\Delta$ y/y (2017-2016)	CAGR (2017-2010)
Europe			739	2,309	2,309	2,309	0.0%	20.9%
Middle East			6	106	106	106	0.0%	61.0%
Africa			45	325	425	525	30.8%	45.3%
Asia - Pacific		0	6	251	251	253	0.0%	87.9%
Americas	419	388	473	1,758	1,758	1,758	0.0%	24.5%
- North America	419	388	473	1,758	1,758	1,758	0.0%	24.5%
<b>World</b>	<b>419</b>	<b>388</b>	<b>1,269</b>	<b>4,749</b>	<b>4,849</b>	<b>4,952</b>	<b>2.1%</b>	<b>25.0%</b>
European Union			739	2,308	2,308	2,308	0.0%	20.9%
MENA			51	331	331	331	0.0%	36.5%
OECD	419	388	1,221	4,076	4,076	4,079	0.0%	22.3%
NON OECD			48	673	773	873	14.9%	59.0%
OPEC			25	125	125	125	0.0%	30.8%
NON OPEC	419	388	1,244	4,624	4,724	4,826	2.2%	24.9%

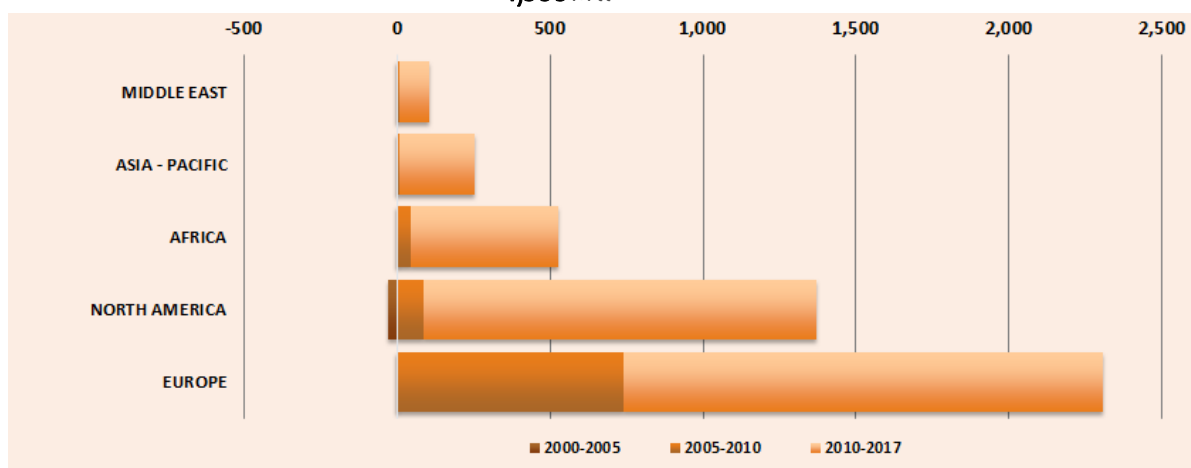
### World Concentrated Solar Power Capacity (2017)

4,952 MW



### World Concentrated Solar Power Capacity Growth (2000-2017)

4,533 MW



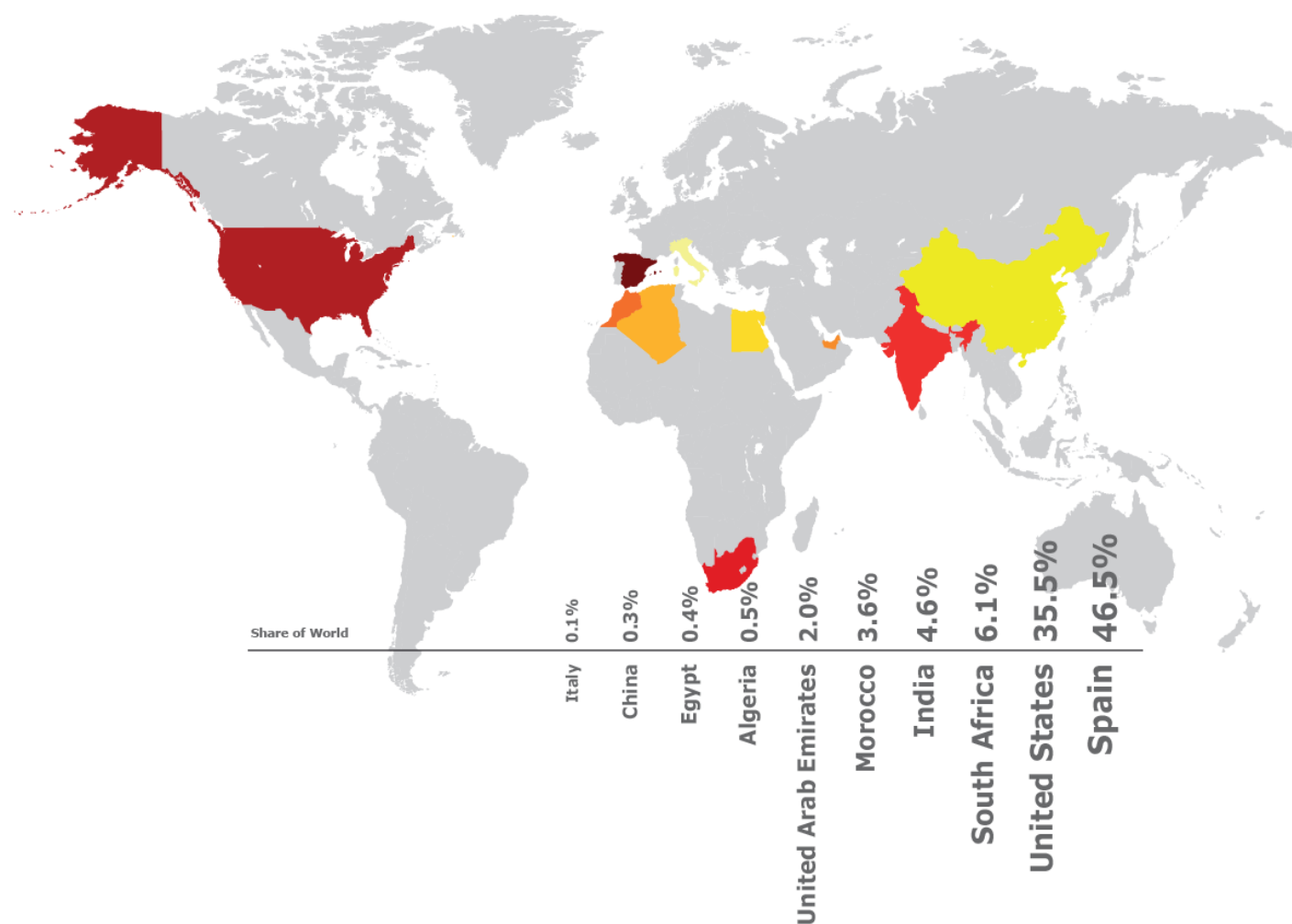
(\*) Data source: Eni's calculations on IRENA (2018), Renewable Energy Statistics 2018, The International Renewable Energy Agency, Abu Dhabi, data.

### The World Top 10 (\*)

(MW)

	2000	2005	2010	2015	2016	2017	$\Delta$ y/y (2017-2016)	CAGR (2017-2010)
Spain			732	2,300	2,300	2,300	0.0%	17.8%
United States	419	388	473	1,758	1,758	1,758	0.0%	20.6%
South Africa				100	200	300	50.0%	
India				229	229	229	0.0%	
Morocco		20	180	180	180	180	0.0%	36.9%
United Arab Emirates			100	100	100	100	0.0%	
Algeria			25	25	25	25	0.0%	0.0%
Egypt				20	20	20	0.0%	
China			3	14	14	14	0.0%	26.4%
Italy			5	6	6	6	0.0%	3.8%
<b>The World Top 10</b>	<b>419</b>	<b>388</b>	<b>1,257</b>	<b>4,732</b>	<b>4,832</b>	<b>4,932</b>	<b>2.1%</b>	<b>21.6%</b>
Rest of the World			11	17	17	20	15.0%	8.6%
<b>World</b>	<b>419</b>	<b>388</b>	<b>1,269</b>	<b>4,749</b>	<b>4,849</b>	<b>4,952</b>	<b>2.1%</b>	<b>21.5%</b>

### The World Top 10 (2017)



(\*) Data source: IRENA (2018), Renewable Energy Statistics 2018, The International Renewable Energy Agency, Abu Dhabi.

# Renewables

## Concentrated Solar Power Capacity

### Countries (\*)

(MW)

	2000	2005	2010	2015	2016	2017	$\Delta$ y/y (2017-2016)	CAGR (2017-2010)
<b>Europe</b>			<b>739</b>	<b>2,309</b>	<b>2,309</b>	<b>2,309</b>	<b>0.0%</b>	<b>17.7%</b>
Germany			2	2	2	2	0.0%	0.0%
Italy			5	6	6	6	0.0%	3.8%
Spain			732	2,300	2,300	2,300	0.0%	17.8%
Turkey				1	1	1	0.0%	

	2000	2005	2010	2015	2016	2017	$\Delta$ y/y (2017-2016)	CAGR (2017-2010)
<b>Middle East</b>			<b>6</b>	<b>106</b>	<b>106</b>	<b>106</b>	<b>0.0%</b>	<b>50.4%</b>
Israel			6	6	6	6	0.0%	0.0%
United Arab Emirates				100	100	100	0.0%	

	2000	2005	2010	2015	2016	2017	$\Delta$ y/y (2017-2016)	CAGR (2017-2010)
<b>Africa</b>			<b>45</b>	<b>325</b>	<b>425</b>	<b>525</b>	<b>23.5%</b>	<b>42.0%</b>
Algeria			25	25	25	25	0.0%	0.0%
Egypt				20	20	20	0.0%	
Morocco			20	180	180	180	0.0%	36.9%
South Africa				100	200	300	50.0%	

	2000	2005	2010	2015	2016	2017	$\Delta$ y/y (2017-2016)	CAGR (2017-2010)
<b>Asia - Pacific</b>		<b>0</b>	<b>6</b>	<b>251</b>	<b>251</b>	<b>253</b>	<b>1.0%</b>	<b>71.9%</b>
Australia		0	3	3	3	6	86.7%	9.3%
China			3	14	14	14	0.0%	26.4%
India				229	229	229	0.0%	
Thailand				5	5	5	0.0%	

	2000	2005	2010	2015	2016	2017	$\Delta$ y/y (2017-2016)	CAGR (2017-2010)
<b>Americas</b>	<b>419</b>	<b>388</b>	<b>473</b>	<b>1,758</b>	<b>1,758</b>	<b>1,758</b>	<b>0.0%</b>	<b>20.6%</b>
United States	419	388	473	1,758	1,758	1,758	0.0%	20.6%

(\*) Data source: IRENA (2018), Renewable Energy Statistics 2018, The International Renewable Energy Agency, Abu Dhabi.

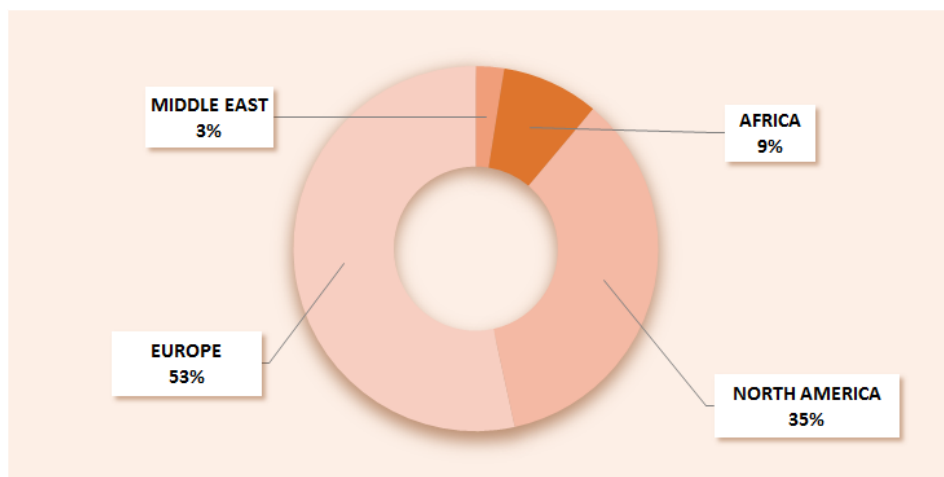
### Areas and Aggregates (\*)

(GWh)

	2000	2005	2010	2015	2016	2017	$\Delta$ y/y (2017-2016)**	CAGR (2017-2000)**
Europe			761	5,593	5,579	5,885	5.5%	
Middle East				243	261		7.4%	
Africa				194	900		363.9%	
Asia - Pacific		1	5	31	33		6.5%	
Americas	526	596	879	3,544	3,701	5,432	46.8%	14.7%
- North America	526	596	879	3,544	3,701	5,432	46.8%	14.7%
<b>World</b>	<b>526</b>	<b>597</b>	<b>1,645</b>	<b>9,605</b>	<b>10,474</b>		<b>9.0%</b>	<b>20.6%</b>
European Union			761	5,593	5,579		-0.3%	
MENA				247	661		167.6%	
OECD	526	597	1,643	9,141	9,284	11,323	22.0%	19.8%
NON OECD			2	464	1,190		156.5%	
OPEC				243	261		7.4%	
NON OPEC	526	597	1,645	9,362	10,213		9.1%	20.4%

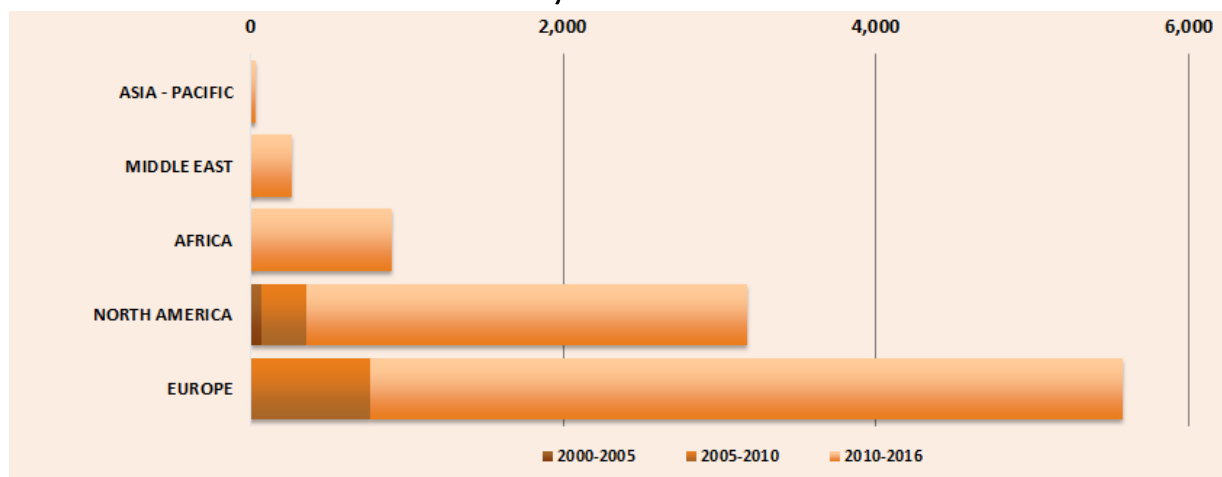
### World Concentrated Solar Power Generation (2016)

10,474 GWh



### World Concentrated Solar Power Generation Growth (2000-2016)

9,948 GWh



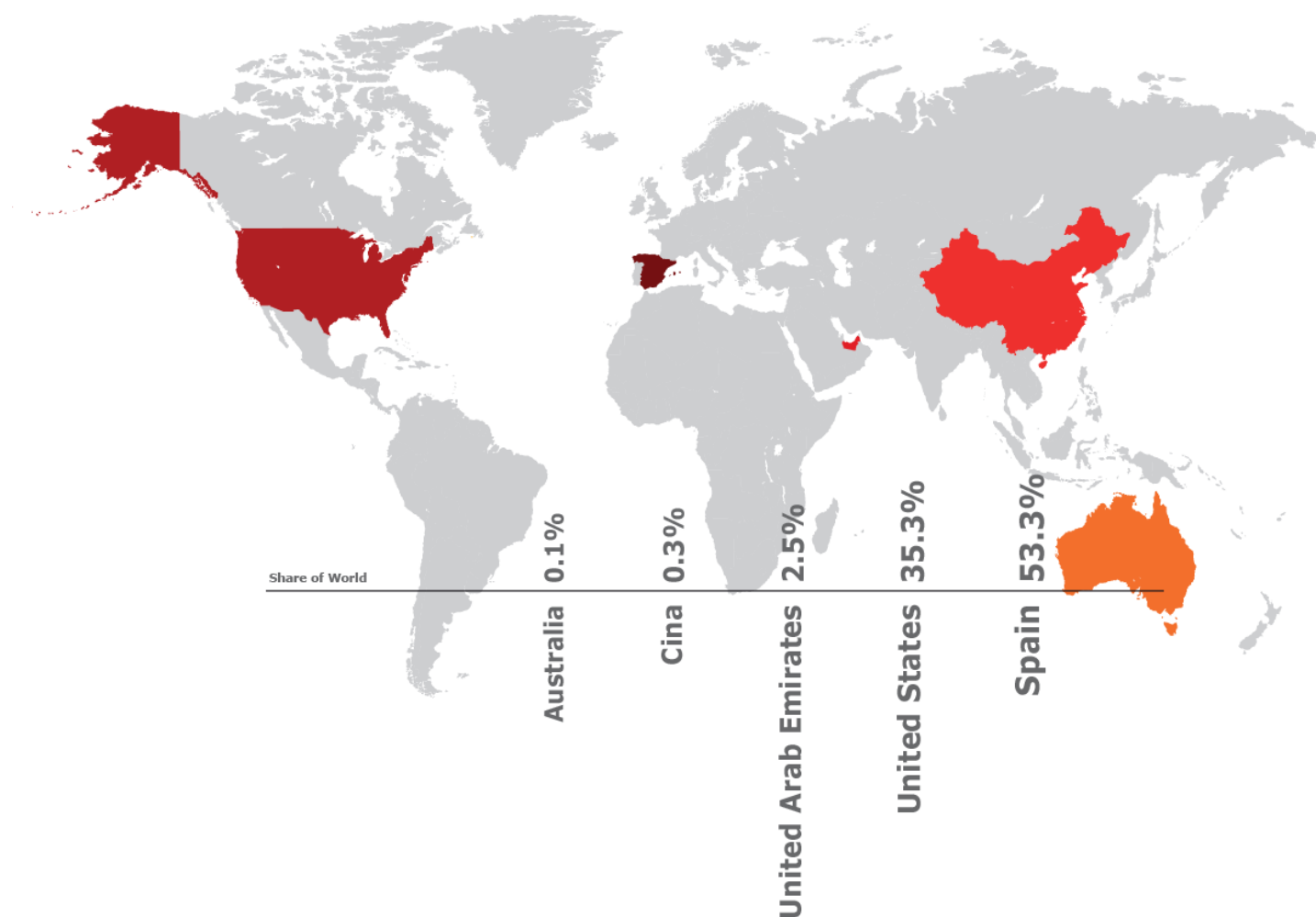
(\*) Data source: Eni's calculations on IEA Extended Balances ° OECD/International Energy Agency, 2018 data.

(\*\*) When 2017 data is missing, the figure refers to the latest available years.

### The World Top 5 (\*) (GWh)

	2000	2005	2010	2015	2016	2017	$\Delta$ y/y (2017-2016)**	CAGR (2017-2000)
Spain			761	5,593	5,579	5,885	5.5%	
United States	526	596	879	3,544	3,701	5,432	46.8%	14.7%
United Arab Emirates				243	261		7.4%	
China			2	27	29		7.4%	
Australia		1	3	4	4	6	50.0%	
<b>The World Top 5</b>	<b>526</b>	<b>597</b>	<b>1,645</b>	<b>9,411</b>	<b>9,574</b>		<b>1.7%</b>	<b>19.9%</b>
Rest of the World				194	900		363.9%	
<b>World</b>	<b>526</b>	<b>597</b>	<b>1,645</b>	<b>9,605</b>	<b>10,474</b>		<b>9.0%</b>	<b>20.6%</b>

### The World Top 5 (2016)



(\*) Data source: IEA Extended Balances © OECD/International Energy Agency, 2018.

(\*\*) When 2017 data is missing, the figure refers to the latest available years.

# Renewables

## Concentrated Solar Power Generation

### Countries (\*)

(GWh)

	2000	2005	2010	2015	2016	2017	$\Delta$ y/y (2017-2016)	CAGR (2017-2000)
<b>Europe</b>			761	5,593	5,579	5,885	5.5%	
Spain			761	5,593	5,579	5,885	5.5%	

	2000	2005	2010	2015	2016	2017	$\Delta$ y/y (2016-2015)	CAGR (2016-2000)
<b>Middle East</b>				243	261		7.4%	
United Arab Emirates				243	261		7.4%	

	2000	2005	2010	2015	2016	2017	$\Delta$ y/y (2017-2016)**	CAGR (2017-2000)
<b>Africa</b>				194	900		363.9%	
Morocco				4	400	414	3.5%	
South Africa				190	500		163.2%	

	2000	2005	2010	2015	2016	2017	$\Delta$ y/y (2017-2016)**	CAGR (2017-2000)
<b>Asia - Pacific</b>		1	5	31	33		6.5%	
Australia		1	3	4	4	6	50.0%	
China			2	27	29		7.4%	

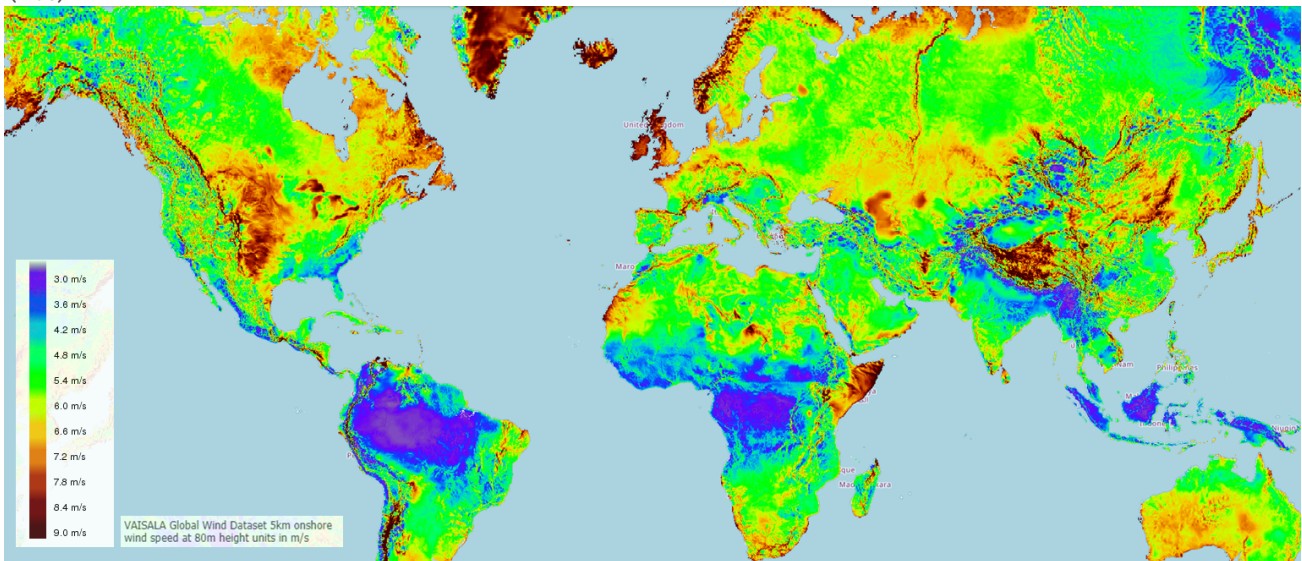
	2000	2005	2010	2015	2016	2017	$\Delta$ y/y (2017-2016)	CAGR (2017-2000)
<b>Americas</b>	526	596	879	3,544	3,701	5,432	46.8%	14.7%
United States	526	596	879	3,544	3,701	5,432	46.8%	14.7%

(\*) Data source: IEA Extended Balances © OECD/International Energy Agency, 2018.

(\*\*) When 2017 data is missing, the figure refers to the latest available years.

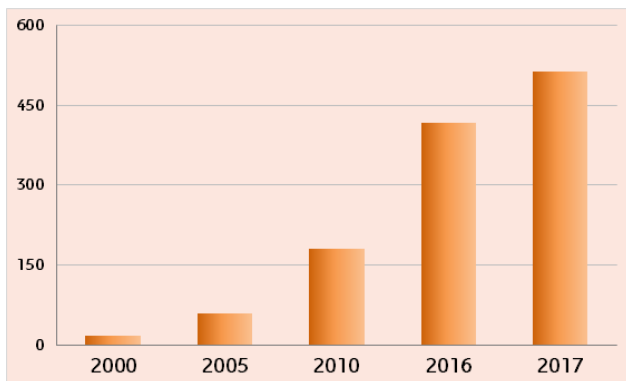
### Wind Resources Map (Average Wind Speed)(\*)

(m/s)



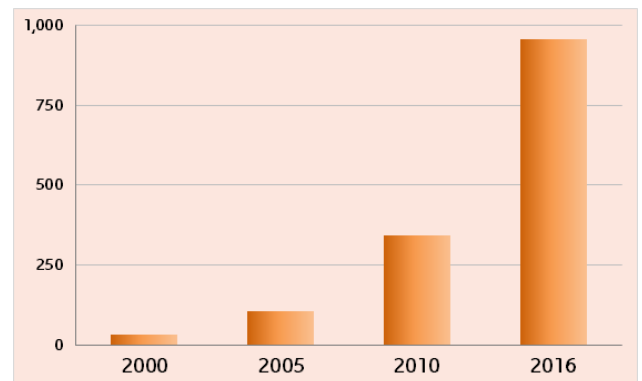
### Wind Power Capacity

(GW)



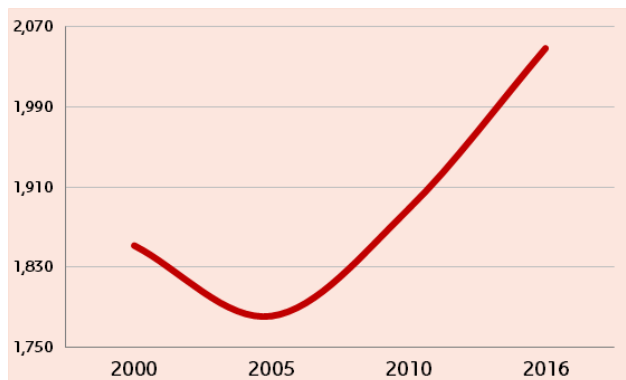
### Wind Power Generation

(TWh)

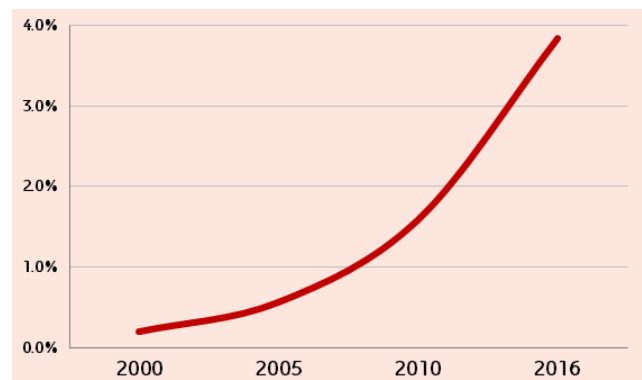


### Capacity Factor

(hours per year - world average)



### Share of Wind on Total Power Generation



(\*) Source: IRENA: Global Atlas, Map Data: "Vaisala Global Wind Dataset, 2018", "2018 Google Hybrid Map".



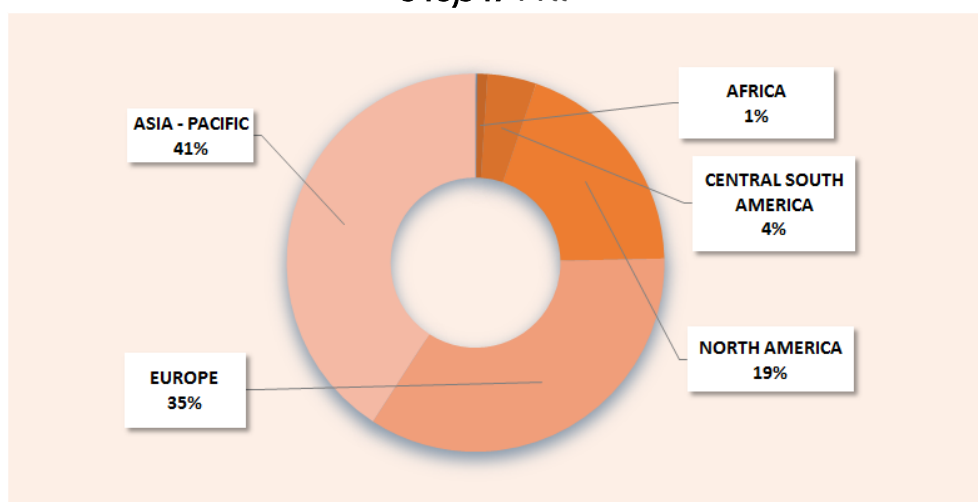
### Areas and Aggregates (\*)

(MW)

	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)	CAGR (2017-2000)
Europe	12,751	40,652	86,191	147,477	161,600	177,137	9.6%	16.7%
Russia and Central Asia	3	13	15	93	149	210	41.3%	28.4%
Middle East	12	45	104	284	418	435	4.0%	23.3%
Africa	133	237	862	3,317	3,828	4,576	19.5%	23.1%
Asia - Pacific	1,453	7,797	48,521	167,249	189,633	209,842	10.7%	34.0%
Americas	2,577	9,594	45,110	98,319	111,860	121,348	8.5%	25.4%
- North America	2,469	9,383	43,102	83,787	93,359	99,856	7.0%	24.3%
- Central South America	108	211	2,008	14,532	18,501	21,491	16.2%	36.6%
<b>World</b>	<b>16,929</b>	<b>58,337</b>	<b>180,803</b>	<b>416,739</b>	<b>467,488</b>	<b>513,547</b>	<b>9.9%</b>	<b>22.2%</b>
European Union	12,711	40,272	84,309	141,417	154,216	168,542	9.1%	16.4%
MENA	145	263	928	2,081	2,320	2,457	11.5%	18.1%
OECD	15,392	52,197	133,779	238,555	263,858	286,648	10.6%	18.8%
NON OECD	1,537	6,140	47,024	178,184	203,630	226,899	14.3%	34.1%
OPEC	11	39	100	241	288	290	19.4%	21.2%
NON OPEC	16,918	58,298	180,703	416,499	467,201	513,257	12.2%	22.2%

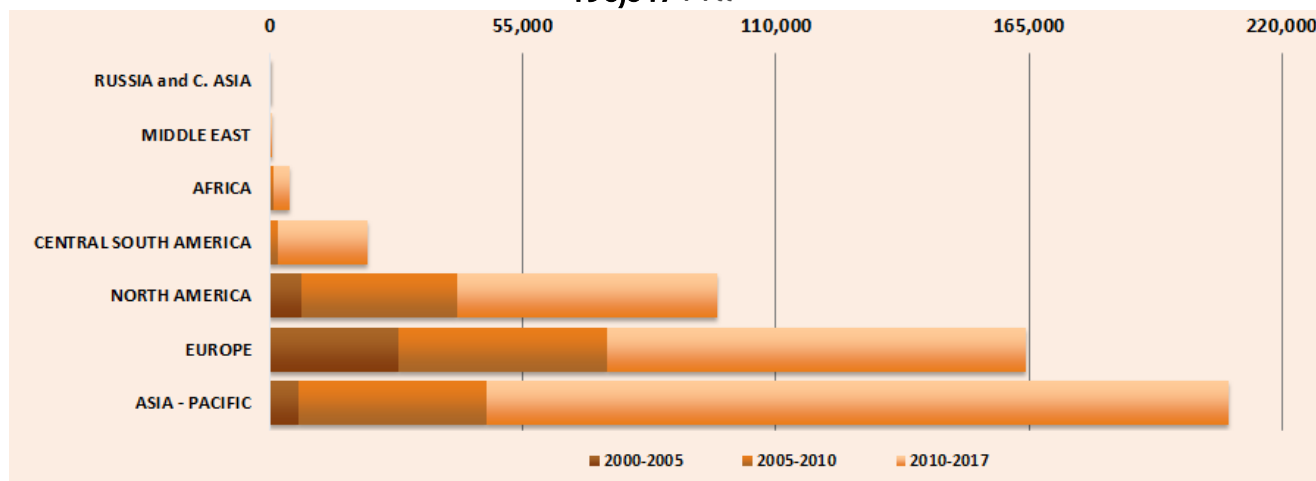
### World Wind Power Capacity (2017)

**513,547 MW**



### World Wind Power Capacity Growth (2010-2017)

**496,617 MW**

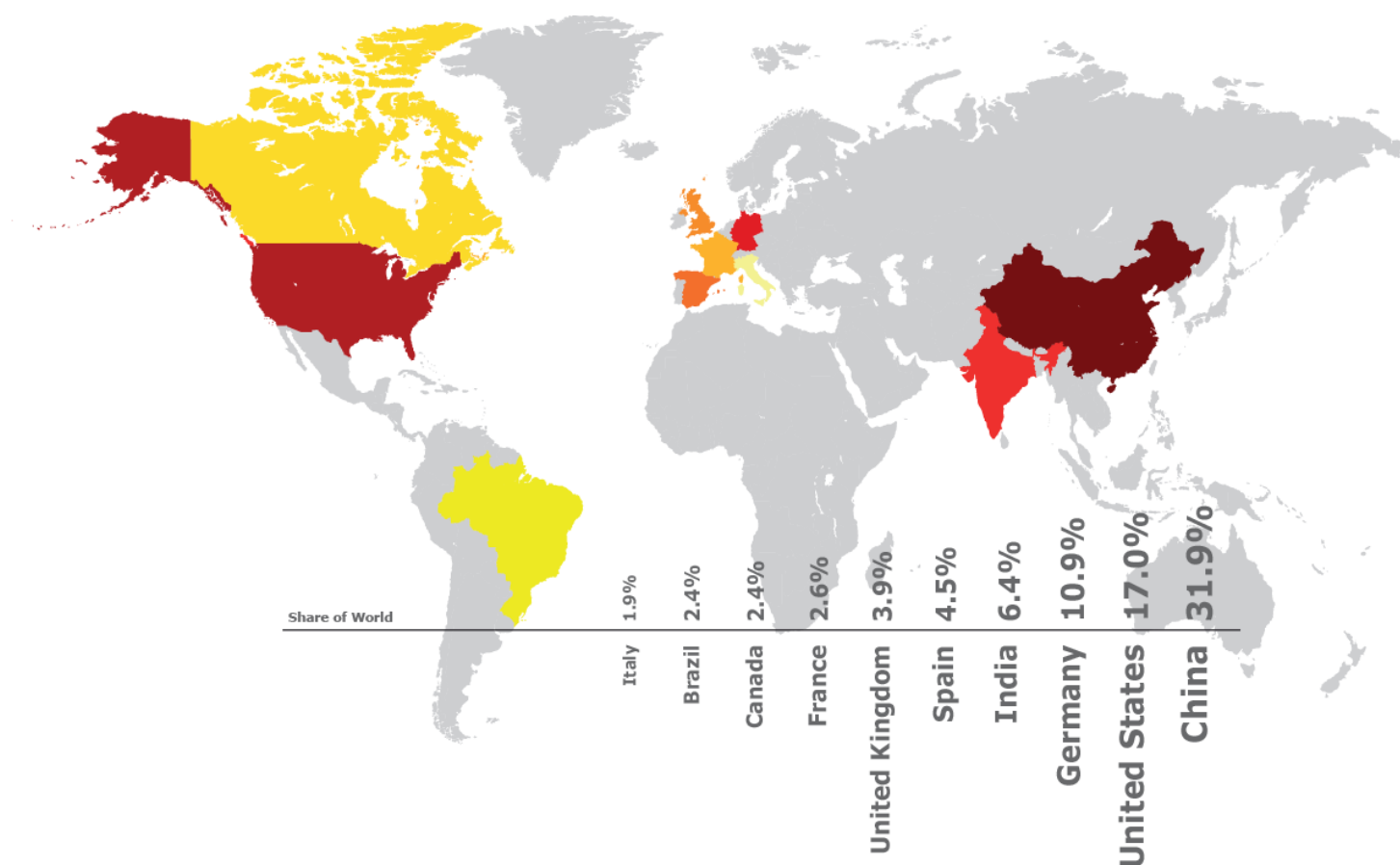


(\*) Data source: Eni's calculations on IRENA (2018), Renewable Energy Statistics 2018, The International Renewable Energy Agency, Abu Dhabi, data.

### The World Top 10 (\*) (MW)

	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)	CAGR (2017-2000)
China	341	1,060	29,634	131,598	148,983	164,061	10.1%	43.8%
United States	2,377	8,706	39,135	72,573	81,386	87,543	7.6%	23.6%
Germany	6,097	18,375	27,180	44,670	49,592	55,876	12.7%	13.9%
India	941	4,434	13,184	25,088	28,700	32,849	14.5%	23.2%
Spain	2,206	9,918	20,693	22,943	23,003	22,988	-0.1%	14.8%
United Kingdom	412	1,565	5,421	14,316	16,217	19,837	22.3%	25.6%
France	38	690	5,912	10,217	11,467	13,113	14.4%	41.0%
Canada	92	677	3,967	11,214	11,973	12,313	2.8%	33.4%
Brazil	22	29	927	7,633	10,124	12,294	21.4%	45.1%
Italy	363	1,635	5,794	9,137	9,384	9,636	2.7%	21.3%
<b>The World Top 10</b>	<b>12,889</b>	<b>47,089</b>	<b>151,847</b>	<b>349,389</b>	<b>390,829</b>	<b>430,509</b>	<b>10.2%</b>	<b>22.9%</b>
Rest of the world	4,040	11,248	28,956	67,350	76,659	83,038	8.3%	19.5%
<b>World</b>	<b>16,929</b>	<b>58,337</b>	<b>180,803</b>	<b>416,739</b>	<b>467,488</b>	<b>513,547</b>	<b>9.9%</b>	<b>22.2%</b>

### The World Top 10 (2017)



(\*) Data source: IRENA (2018), Renewable Energy Statistics 2018, The International Renewable Energy Agency, Abu Dhabi.

## Countries (\*)

(MW)

	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)	CAGR (2017-2000)
<b>Europe</b>	<b>12,751</b>	<b>40,652</b>	<b>86,191</b>	<b>147,477</b>	<b>161,600</b>	<b>177,137</b>	<b>9.6%</b>	<b>16.7%</b>
Austria	50	778	981	2,489	2,730	2,926	7.2%	27.0%
Belarus		1	2	43	68	83	21.1%	
Belgium	14	167	912	2,176	2,260	2,837	25.5%	36.7%
Bulgaria		8	488	699	699	699	0.0%	
Croatia		6	79	418	483	537	11.2%	
Cyprus			82	158	158	158	0.0%	
Czech Republic	1	22	213	281	282	308	9.2%	40.1%
Denmark	2,390	3,127	3,802	5,076	5,246	5,521	5.2%	5.0%
Estonia		31	108	300	310	310	0.0%	
Finland	38	82	197	1,005	1,565	1,995	27.5%	26.2%
France	38	690	5,912	10,217	11,467	13,113	14.4%	41.0%
Macedonia				37	37	37	0.0%	
Germany	6,095	18,248	26,903	44,580	49,592	55,876	12.7%	13.9%
Greece	226	491	1,298	2,091	2,370	2,652	11.9%	15.6%
Hungary		17	293	329	329	329	0.0%	
Iceland				3	3	3	0.0%	
Ireland	119	517	1,374	2,440	2,827	3,253	15.1%	21.5%
Italy	363	1,635	5,794	9,137	9,384	9,636	2.7%	21.3%
Latvia	2	26	30	69	70	77	10.0%	24.0%
Lithuania		1	133	436	509	509	0.0%	
Luxembourg	14	35	44	64	120	120	0.0%	13.5%
Moldova				1	2	2	15.0%	
Netherlands	447	1,224	2,237	3,391	4,257	4,270	0.3%	14.2%
Norway	13	265	425	867	883	1,207	36.7%	30.5%
Poland	4	121	1,108	4,886	5,747	5,798	0.9%	53.4%
Portugal	83	1,064	3,796	4,937	5,123	5,123	0.0%	27.4%
Romania		1	389	3,130	3,025	3,030	0.2%	
Serbia				10	17	25	47.1%	
Slovakia		5	3	4	4	4	0.0%	
Slovenia				5	5	5	0.0%	
Spain	2,206	9,918	20,693	22,943	23,003	22,988	-0.1%	14.8%
Sweden	209	493	2,019	5,840	6,434	6,631	3.1%	22.6%
Switzerland	3	12	42	60	75	75	0.0%	20.8%
Turkey	19	21	1,320	4,503	5,751	6,516	13.3%	41.0%
Ukraine	5	77	88	514	526	553	5.1%	31.9%
United Kingdom	412	1,565	5,421	14,316	16,217	19,837	22.3%	25.6%
Others Europe	0	4	6	22	22	22	0.0%	34.0%

	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)	CAGR (2017-2000)
<b>Russia and Central Asia</b>	<b>3</b>	<b>13</b>	<b>15</b>	<b>93</b>	<b>149</b>	<b>210</b>	<b>41.3%</b>	<b>28.4%</b>
Russia	3	10	10	11	11	11	0.0%	7.9%
Armenia		3	3	3	3	3	0.0%	
Azerbaijan			2	8	16	62	290.0%	
Georgia					21	21	0.0%	
Kazakhstan				72	98	112	14.5%	

	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)	CAGR (2017-2000)
<b>Middle East</b>	<b>12</b>	<b>45</b>	<b>104</b>	<b>284</b>	<b>418</b>	<b>435</b>	<b>4.0%</b>	<b>23.3%</b>
Bahrain			1	1	1	1	0.0%	
Iran	11	37	95	153	191	191	0.0%	18.3%
Israel		6	6	6	27	27	0.0%	
Jordan	1	1	1	118	184	198	7.6%	33.8%
Kuwait					10	10	0.0%	
Lebanon				3	3	3	0.0%	
Syria			1	1	1	1	0.0%	
United Arab Emirates				2	1	1	0.0%	

(\*) Data source: IRENA (2018), Renewable Energy Statistics 2018, The International Renewable Energy Agency, Abu Dhabi.

## Countries (\*)

(MW)

	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)	CAGR (2017-2000)
<b>Africa</b>	<b>133</b>	<b>237</b>	<b>862</b>	<b>3,317</b>	<b>3,828</b>	<b>4,576</b>	<b>19.5%</b>	<b>23.1%</b>
Algeria				10	10	10	0.0%	
Chad					1	1	0.0%	
Egypt	69	145	550	750	750	750	0.0%	15.1%
Ethiopia				324	324	324	0.0%	
Kenya		0	6	26	26	26	0.4%	
Mauritania				34	34	34	0.0%	
Morocco	54	54	221	797	897	1017	13.4%	18.8%
Namibia		0	0	0	0	6	3000.0%	
Nigeria		2	2	3	3	3	0.0%	
Somalia				3	3	4	28.6%	
South Africa		3	10	1,079	1,473	2,094	42.2%	
Tunisia	10	19	53	240	245	245	0.0%	20.7%
Others Africa		13	19	49	60	60	-0.2%	
	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)	CAGR (2017-2000)
<b>Asia - Pacific</b>	<b>1,453</b>	<b>7,797</b>	<b>48,521</b>	<b>167,249</b>	<b>189,633</b>	<b>209,842</b>	<b>10.7%</b>	<b>34.0%</b>
Australia	33	740	1,864	4,234	4,327	4,557	5.3%	33.6%
Bangladesh			2	3	3	3	0.0%	
China	341	1,060	29,634	131,598	148,983	164,061	10.1%	43.8%
India	941	4,434	13,184	25,088	28,700	32,849	14.5%	23.2%
Indonesia			0	1	1	1	0.0%	
Japan	84	1,227	2,294	2,808	3,246	3,423	5.5%	24.4%
Mongolia			1	51	51	101	99.6%	
New Zealand	36	168	524	683	688	688	0.0%	19.0%
Nord Korea			0	0	0	1	200.0%	
Pakistan			6	308	591	792	34.0%	
Philippines		25	33	427	427	427	0.0%	
South Korea	7	99	382	847	1,067	1,215	13.9%	35.4%
Sri Lanka	3	3	33	132	146	146	0.0%	25.7%
Taiwan	3	24	476	647	682	692	1.5%	38.9%
Thailand			6	234	507	628	23.8%	
Vietnam			31	136	160	205	27.8%	
Others Asia-Pacific	5	17	52	53	53	53	0.0%	14.6%
	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)	CAGR (2017-2000)
<b>Americas</b>	<b>2,577</b>	<b>9,594</b>	<b>45,110</b>	<b>98,319</b>	<b>111,860</b>	<b>121,348</b>	<b>8.5%</b>	<b>25.4%</b>
Argentina	14	28	28	217	217	257	18.4%	18.7%
Bolivia			0	3	27	27	0.0%	
Brazil	22	29	927	7,633	10,124	12,294	21.4%	45.1%
Canada	92	677	3,967	11,214	11,973	12,313	2.8%	33.4%
Chile		2	163	910	1,039	1,421	36.7%	
Colombia		10	18	18	18	18	0.0%	
Costa Rica	43	69	120	278	319	378	18.5%	13.7%
Cuba	0	2	7	12	12	12	0.0%	21.2%
Dominican Rep				86	135	135	0.0%	
Ecuador			2	21	21	21	0.0%	
Guatemala				76	76	76	0.0%	
Honduras				152	175	225	28.6%	
Jamaica		21	39	39	99	99	0.0%	
Mexico	17	18	519	3,271	4,051	4,051	0.0%	38.0%
Netherlands Antilles			11	11	11	11	0.0%	
Nicaragua			63	186	186	186	0.0%	
Panama				253	270	270	0.0%	
Peru	1	1	1	240	240	240	0.0%	41.0%
Puerto Rico			1	125	125	101	-19.3%	
United States	2,377	8,706	39,135	72,573	81,386	87,543	7.6%	23.6%
Uruguay			41	857	1,212	1,511	24.7%	
Venezuela				50	50	50	0.0%	
Others Americas	11	32	69	94	94	109	16.0%	14.5%

(\*) Data source: IRENA (2018), Renewable Energy Statistics 2018, The International Renewable Energy Agency, Abu Dhabi.

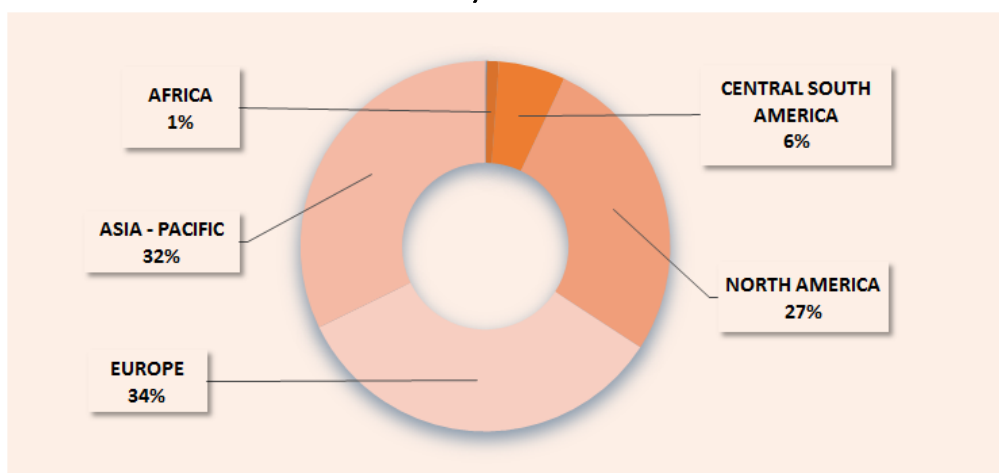
### Areas and Aggregates (\*)

(GWh)

	2000	2005	2010	2015	2016	2017	$\Delta$ y/y (2017-2016)**	CAGR (2017-2000)**
Europe	22,298	71,058	153,273	317,397	321,812	384,231	19.4%	18.2%
Russia and Central Asia	2	7	12	288	457		58.7%	40.4%
Middle East	40	85	174	351	648	913	84.6%	19.0%
Africa	232	818	2,370	8,465	10,262		21.2%	26.7%
Asia - Pacific	2,614	11,747	76,951	252,270	308,471		22.3%	34.7%
Americas	6,164	20,207	108,619	259,775	316,051		21.7%	27.9%
- North America	5,914	19,448	103,872	219,438	260,237	288,648	10.9%	25.7%
- Central South America	250	759	4,747	40,337	55,814		38.4%	40.2%
<b>World</b>	<b>31,350</b>	<b>103,922</b>	<b>341,399</b>	<b>838,546</b>	<b>957,701</b>		<b>14.2%</b>	<b>23.8%</b>
European Union	22,225	70,453	149,388	301,876	302,894	362,125	19.6%	17.8%
MENA	264	885	2,470	5,395	6,209		15.1%	21.8%
OECD	28,505	93,801	267,470	547,981	594,955	686,390	15.4%	20.6%
NON OECD	2,845	10,121	73,929	290,565	362,746		24.8%	35.4%
OPEC	37	71	170	343	369		7.6%	15.5%
NON OPEC	31,313	103,851	341,229	838,203	957,332		14.2%	23.8%

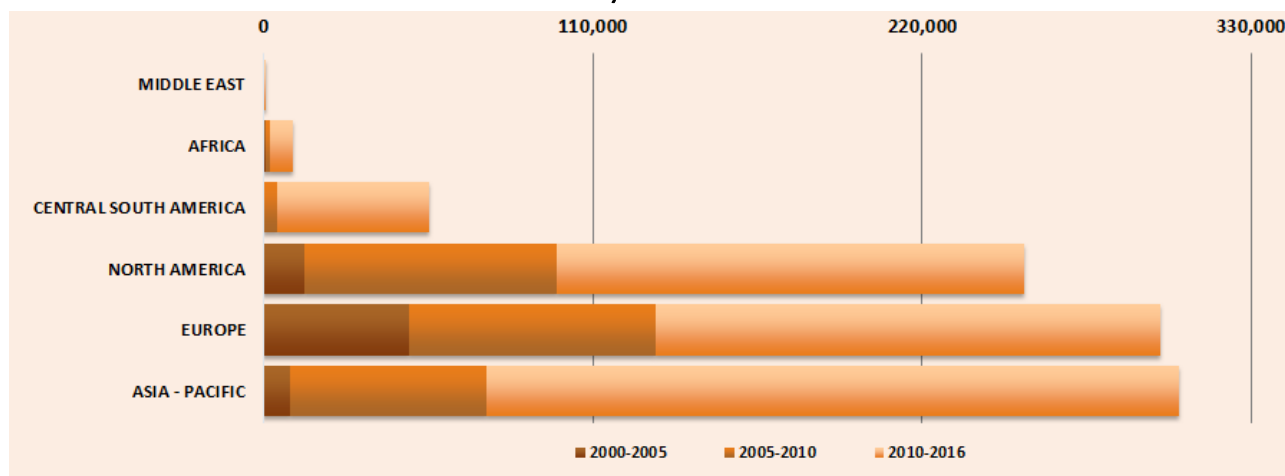
### World Wind Power Generation (2016)

957,701 GWh



### World Wind Power Generation Growth (2000-2016)

926,351 GWh



(\*) Data source: Eni's calculations on IEA Extended Balances ° OECD/International Energy Agency, 2018 data.

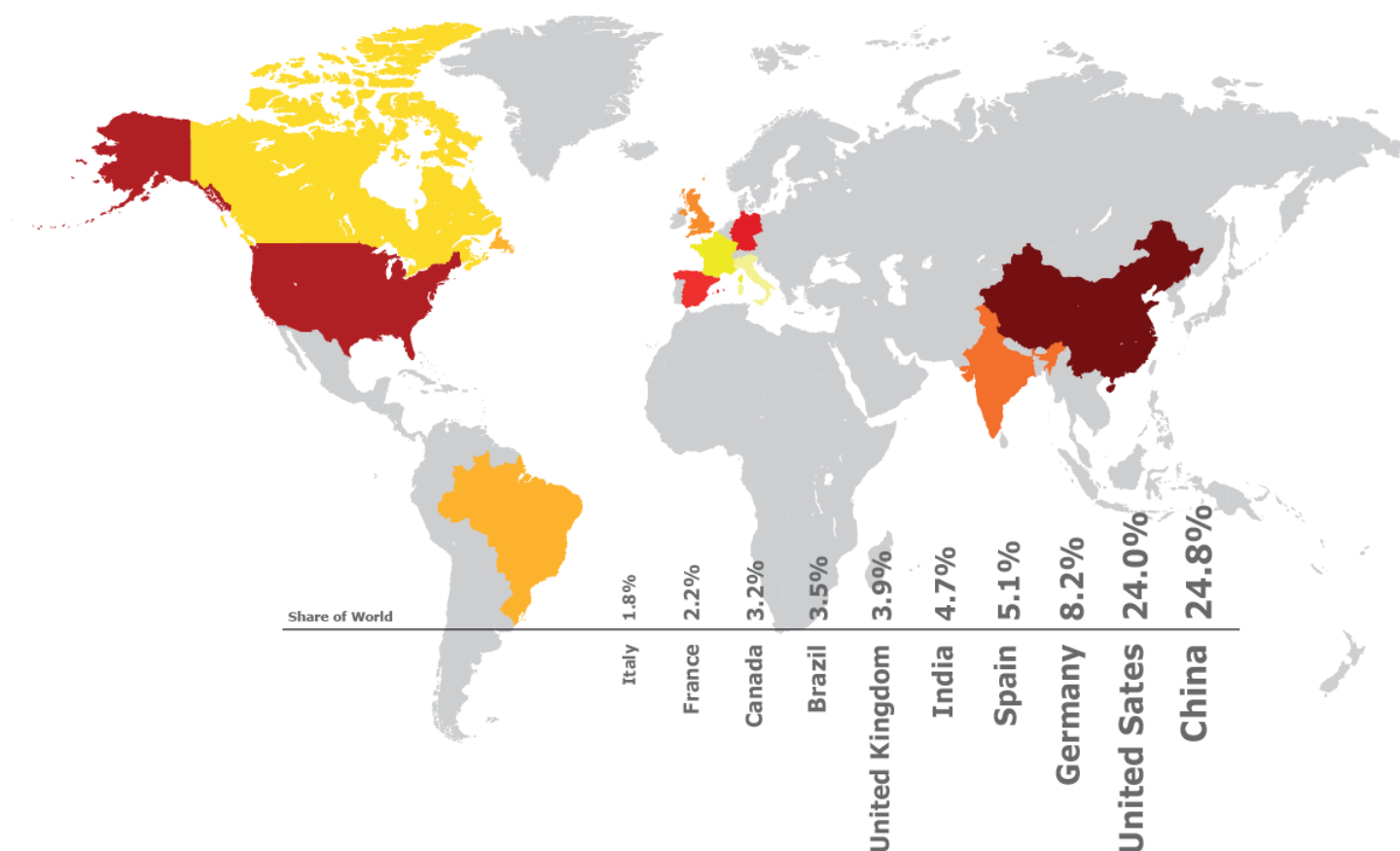
(\*\*) When 2017 data is missing, the figure refers to the latest available years.

### The World Top 10 (\*)

(GWh)

	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)**	CAGR (2017-2000)**
China	615	2,028	44,622	185,766	237,071		27.6%	45.1%
United States	5,650	17,881	95,148	192,992	229,471	257,195	12.1%	25.2%
Germany	9,352	27,229	37,793	79,206	78,598	106,601	35.6%	15.4%
Spain	4,727	21,176	44,271	49,325	48,906	49,094	0.4%	14.8%
India	1,684	6,211	19,657	41,663	44,856		7.7%	22.8%
United Kingdom	947	2,904	10,286	40,317	37,367	49,605	32.8%	26.2%
Brazil	2	93	2,177	21,626	33,488	42,379	26.5%	79.7%
Canada	264	1,567	8,724	26,446	30,766	31,453	2.2%	32.5%
France	48	962	9,945	21,249	21,400	24,317	13.6%	44.2%
Italy	563	2,344	9,126	14,844	17,689	17,658	-0.2%	22.5%
<b>The World Top 10</b>	<b>23,237</b>	<b>80,367</b>	<b>237,127</b>	<b>487,668</b>	<b>542,541</b>		<b>11.3%</b>	<b>21.8%</b>
Rest of the World	8,113	23,555	104,272	350,878	415,160		18.3%	27.9%
<b>World</b>	<b>31,350</b>	<b>103,922</b>	<b>341,399</b>	<b>838,546</b>	<b>957,701</b>		<b>14.2%</b>	<b>23.8%</b>

### The World Top 10 (2016)



(\*) Data source: IEA Extended Balances © OECD/International Energy Agency, 2018.

(\*\*) When 2017 data is missing, the figure refers to the latest available years.

## Countries (\*)

(GWh)

	2000	2005	2010	2015	2016	2017**	Δ y/y (2017-2016)	CAGR (2017-2000)
<b>Europe</b>	<b>22,298</b>	<b>71,058</b>	<b>153,273</b>	<b>317,397</b>	<b>321,812</b>	<b>384,231</b>	<b>1.4%</b>	<b>18.2%</b>
Austria	67	1,331	2,064	4,840	5,235	6,234	19.1%	30.6%
Belarus		1	1	26	75	74	-1.3%	
Belgium	16	227	1,292	5,574	5,436	6,653	22.4%	42.6%
Bulgaria		5	681	1,452	1,425	1,504	5.5%	
Croatia		10	139	796	1,014	1,175	15.9%	
Cyprus			31	221	226	211	-6.6%	
Czech Republic	1	21	335	573	497	591	18.9%	45.6%
Denmark	4,241	6,614	7,809	14,133	12,782	14,777	15.6%	7.6%
Estonia		54	277	715	594	737	24.1%	
Finland	78	170	294	2,327	3,068	4,802	56.5%	27.4%
France	48	962	9,945	21,249	21,400	24,317	13.6%	44.2%
Macedonia				121	109	110	0.9%	
Germany	9,352	27,229	37,793	79,206	78,598	106,601	35.6%	15.4%
Greece	451	1,266	2,714	4,621	5,146	5,537	7.6%	15.9%
Hungary		10	534	693	684	758	10.8%	
Iceland				11	9	8	-11.1%	
Ireland	244	1,112	2,815	6,573	6,149	7,445	21.1%	22.3%
Italy	563	2,344	9,126	14,844	17,689	17,658	-0.2%	22.5%
Kosovo			1					
Latvia	4	47	49	147	128	150	17.2%	23.8%
Lithuania		2	224	810	1,136	1,390	22.4%	
Luxembourg	27	52	55	102	101	231	128.7%	13.5%
Moldova				2	3	6	100.0%	
Netherlands	829	2,067	3,994	7,550	8,170	10,574	29.4%	16.2%
Norway	31	499	879	2,515	2,116	2,852	34.8%	30.5%
Poland	5	135	1,664	10,858	12,588	14,906	18.4%	60.1%
Portugal	168	1,773	9,182	11,607	12,474	12,246	-1.8%	28.7%
Romania			306	7,063	6,590	7,410	12.4%	
Slovakia		6	6	6	6	5	-16.7%	
Serbia					26	44	69.2%	
Spain	4,727	21,176	44,271	49,325	48,906	49,094	0.4%	14.8%
Sweden	457	936	3,502	16,268	15,479	17,508	13.1%	23.9%
Switzerland	3	8	37	110	109	133	22.0%	25.0%
Turkey	33	59	2,916	11,652	15,517	17,904	15.4%	44.8%
United Kingdom	947	2,904	10,286	40,317	37,367	49,605	32.8%	26.2%
Ukraine	6	38	51	1,084	954	975	2.2%	34.9%
Others Europe			1					

	2000	2005	2010	2015	2016	2017	Δ y/y (2017-2016)***	CAGR (2017-2000)
<b>Russia and Central Asia</b>	<b>2</b>	<b>7</b>	<b>12</b>	<b>288</b>	<b>457</b>		<b>58.7%</b>	<b>40.4%</b>
Russia	2	7	4	148	148	139	-6.1%	28.3%
Armenia			7	3	2	2	0.0%	
Azerbaijan			1	5	23	22	-4.3%	
Georgia					9	88	877.8%	
Kazakhstan				132	275		108.3%	

	2000	2005	2010	2015	2016	2017**	Δ y/y (2017-2016)	CAGR (2017-2000)
<b>Middle East</b>	<b>40</b>	<b>85</b>	<b>174</b>	<b>351</b>	<b>648</b>	<b>913</b>	<b>84.6%</b>	<b>19.0%</b>
Iran	37	71	163	221	250	416	13.1%	12.7%
Israel		11	8	7	7	7	0.0%	
Jordan	3	3	3	123	391	490	217.9%	35.6%

(\*) Data source: IEA Extended Balances © OECD/International Energy Agency, 2018.

(\*\*) Data source: IEA Extended Balances © OECD/International Energy Agency, 2018 and Eni's estimates.

(\*\*\*) When 2017 data is missing, the figure refers to the latest available years.



## Countries (\*)

(GWh)

	2000	2005	2010	2015	2016	2017**	$\Delta$ y/y (2017-2016)***	CAGR (2017-2010)***
<b>Africa</b>	<b>232</b>	<b>818</b>	<b>2,370</b>	<b>8,465</b>	<b>10,262</b>		<b>21.2%</b>	<b>26.7%</b>
Algeria				19	29		52.6%	
Egypt	137	552	1,498	2,058	2,058		0.0%	18.5%
Ethiopia				759	816		7.5%	
Kenya			18	57	63		10.5%	
Morocco	64	206	659	2,519	3,000	3,035	1.2%	25.5%
South Africa		12	34	2,500	3,700		48.0%	
Tunisia	23	42	139	448	474	502	5.8%	19.9%
Others Africa	8	6	22	105	122		16.2%	18.6%

	2000	2005	2010	2015	2016	2017**	$\Delta$ y/y (2017-2016)***	CAGR (2017-2010)***
<b>Asia - Pacific</b>	<b>2,614</b>	<b>11,747</b>	<b>76,951</b>	<b>252,270</b>	<b>308,471</b>		<b>22.3%</b>	<b>34.7%</b>
Australia	58	885	5,052	11,467	12,199	12,483	2.3%	37.2%
Bangladesh				4	5	5	0.0%	
China	615	2,028	44,622	185,766	237,071		27.6%	45.1%
Hong Kong			1	2	2	2	0.0%	
India	1,684	6,211	19,657	41,663	44,856		7.7%	22.8%
Indonesia			4	4	6		50.0%	
Japan	108	1,751	3,962	5,581	5,951	6,320	6.2%	27.0%
Mongolia				154	154		0.0%	
Nepal				6	6	6	0.0%	
New Zealand	120	614	1,637	2,356	2,303	2,070	-10.1%	18.2%
Pakistan			0	786	831		5.7%	
Philippines		17	62	748	975	862	-11.6%	
South Korea	17	130	817	1,342	1,683	2,160	28.3%	33.0%
Sri Lanka	3	2	53	343	345		0.6%	34.5%
Taiwan	1	91	976	1,525	1,464		-4.0%	57.7%
Thailand			0	329	345	1,112	222.3%	
Vietnam			50	121	201		66.1%	
Others Asia-Pacific	8	18	57	73	74		1.4%	14.9%

	2000	2005	2010	2015	2016	2017**	$\Delta$ y/y (2017-2016)***	CAGR (2017-2010)***
<b>Americas</b>	<b>6,164</b>	<b>20,207</b>	<b>108,619</b>	<b>259,775</b>	<b>316,051</b>		<b>21.7%</b>	<b>27.9%</b>
Argentina	35	75	25	599	554	622	12.3%	18.4%
Bolivia				12	35	49	38.6%	
Brazil	2	93	2,177	21,626	33,488	42,379	26.5%	79.7%
Canada	264	1,567	8,724	26,446	30,766	31,453	2.2%	32.5%
Chile		7	332	2,115	2,449	3,520	43.7%	
Colombia		49	39	68	51		-25.0%	
Costa Rica	183	204	359	1,080	1,147	1,300	13.3%	12.2%
Cuba			12	19	19	19	0.0%	
Dominican Rep				725	807	766	-5.1%	
Ecuador			3	99	84	92	8.9%	
Guatemala				107	215	161	-25.2%	
Honduras				665	574	748	30.4%	
Jamaica		50	53	125	190	226	18.9%	
Mexico	19	19	1,239	8,745	10,378	10,353	-0.2%	44.9%
Nicaragua				865	729	797	9.3%	
Panama				419	625	522	-16.4%	
Peru	1	1	1	595	1,063	1,063	0.0%	50.7%
United States	5,650	17,881	95,148	192,992	229,471	257,195	12.1%	25.2%
Uruguay			68	2,065	2,994	3,324	11.0%	
Others Americas	9	259	276	408	412		1.0%	27.0%

(\*) Data source: IEA Extended Balances © OECD/International Energy Agency, 2018.

(\*\*) Data source: IEA Extended Balances © OECD/International Energy Agency, 2018 and Eni's estimates.

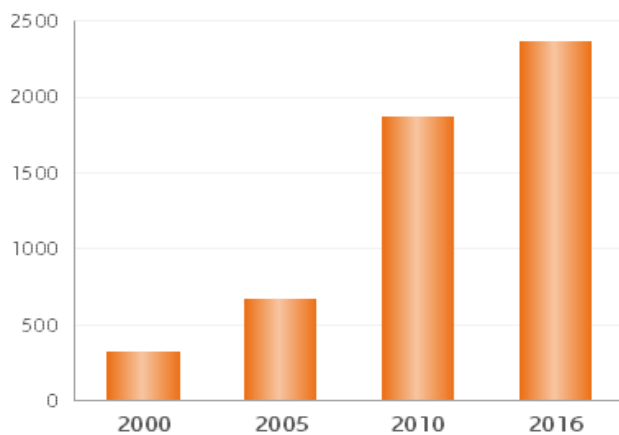
(\*\*\*) When 2017 data is missing, the figure refers to the latest available years.



### Total Biofuels (\*)

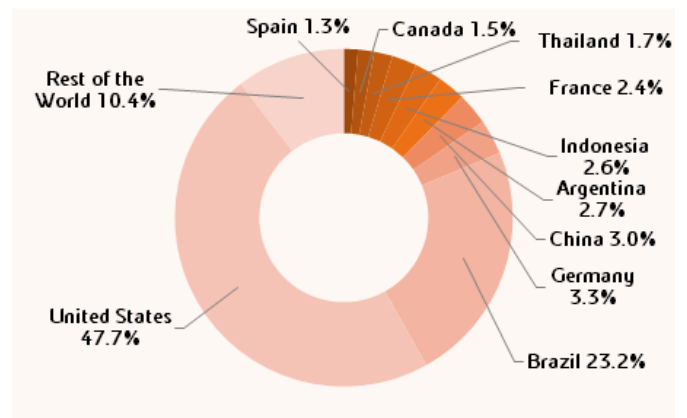
(thousand barrels/day)

#### World



2016

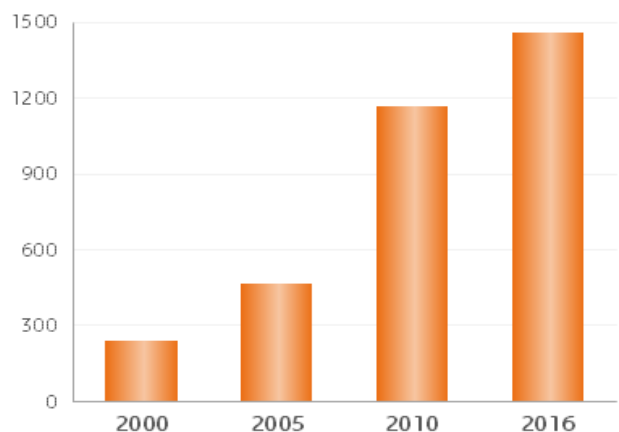
World: 2,372 thousand barrels/day



### Biogasoline (\*)

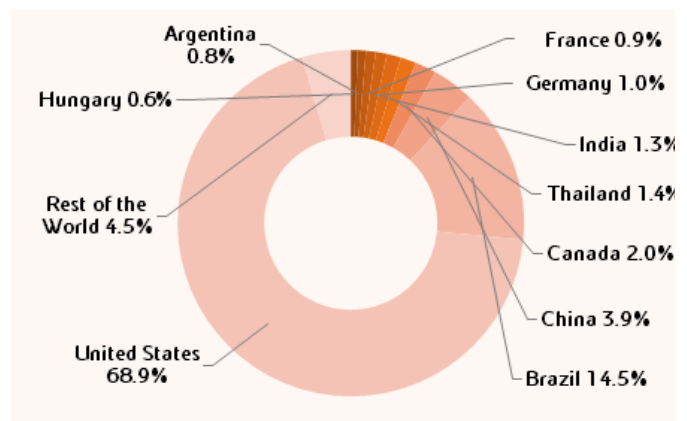
(thousand barrels/day)

#### World



2016

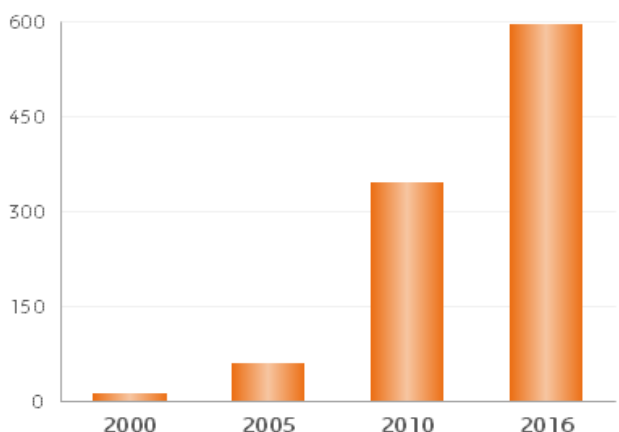
World: 1,458 thousand barrels/day



### Biodiesel (\*)

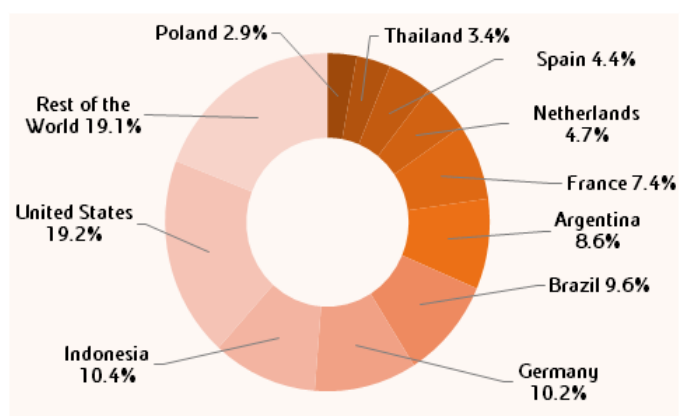
(thousand barrels/day)

#### World



2016

World: 598 thousand barrels/day



(\*) Data source: IEA *Extended Balances* © OECD/International Energy Agency, 2018.

Total Biofuels include biogasoline, biodiesel and other biofuels (among others, ethanol used pure in Brazil "Hydrous" and vegetable oil used pure in Germany).





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