Renewable energy highlights

1 July 2020

HEADLINE FIGURES

6 586 TWh

Amount of electricity generated from renewables in 2018

6.1%

Increase in renewable generation compared to 2017

1 258 TWh

Increase in electricity generation from renewables since 2014

28%

Increase in solar power generation compared to 2017

11%

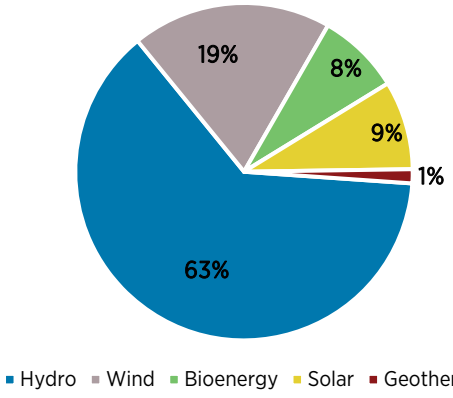
Increase in wind power generation compared to 2017

USD 21 bn

Amount of public investment in renewables in 2018

IRENA's renewable energy statistics can be downloaded from resourceirena.irena.org

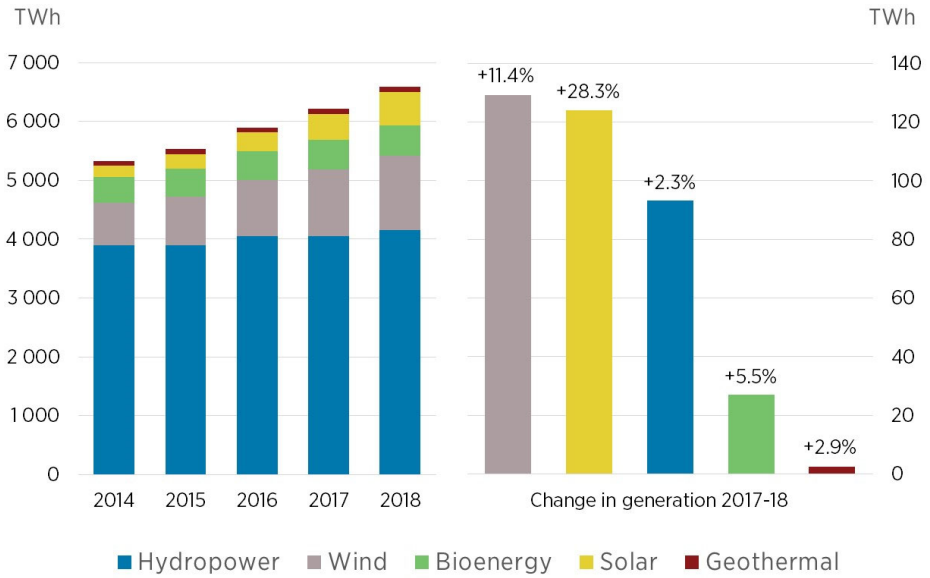
Renewable electricity generation by energy source



In 2018, the total amount of electricity generated from renewables was 6 586 TWh. Renewable hydro accounted for about 63% of this (4 149 TWh), followed by wind energy (1 263 TWh), solar energy (562 TWh), bioenergy (523 TWh), geothermal energy (88 TWh) and marine energy (1 TWh).

Bioenergy generation was divided as follows: 365 TWh (70%) from solid biofuels; 88 TWh (17%) from biogas; 62 TWh (12%) from renewable municipal waste; and 7 TWh from liquid biofuels.

Growth in renewable electricity generation



Renewable electricity generation in 2018 was 376 TWh higher than in 2017, an increase of 6.1%. Generation growth returned to its long-term trend, due to a recovery in the growth of hydropower. Solar and wind generation continued to grow strongly, with solar overtaking bioenergy in 2018, to become the third largest source of renewable electricity generation.

Solar and wind generation in 2018 increased by 28% and 11% respectively. Together, these two sources of energy continue to dominate growth in renewable generation, accounting for 73% of growth since 2014.

Renewable electricity generation by region

As in other recent years, Asia accounted for most growth in renewable electricity generation, with an increase of 219 TWh in 2018. Asia's share of global renewable generation also continued to increase, reaching 40%. Europe and North America each have a 20% share, followed by South America (12%) and Eurasia (5%).

In 2018, renewable hydro generation expanded significantly in Asia and Europe, while contracting in North America, South America and Central America and the Caribbean. Asia continued to lead in the expansion of wind and solar generation, accounting for more than half of all global solar generation and surpassing Europe by 56 TWh in wind generation during the year.

Generation in 2018 (TWh)	Hydro	Wind	Bioenergy	Solar	Geothermal	Marine	Total
Africa	129	14	3	9	5		160
Asia	1 719	440	165	293	26	<1	2 644
Central America + Caribbean	29	6	6	3	4		48
Eurasia	266	20	3	8	8	<1	306
Europe	578	384	192	132	13	<1	1 298
Middle East	19	1	<1	6			27
North America	710	321	81	90	24	<1	1 226
Oceania	44	17	4	10	8	<1	84
South America	655	60	69	11	<1	<1	794
World total	4 149	1 263	523	562	88	1	6 586

Revisions to renewable generating capacity

IRENA's latest statistics include some minor revisions to the 2019 renewable generating capacity reported in March 2020. Total renewable generating capacity in 2019 has been revised downwards by 4 GW to 2 533 GW. This is due to the inclusion of officially validated statistics for some large countries, which has resulted in lower figures for hydropower and solar capacity (2 GW less hydropower than previously reported and 1 GW less solar energy capacity).

Renewable share of total electricity generation

IRENA's electricity data shows a 24.9% renewable share of generation in 2018. The generation share increased by 0.5 percentage points compared to the 2017 figure of 24.4%. The increase in the generation share was relatively low compared to previous recent years, due to comparatively high growth in the use of fossil fuels for generation in Asia and North America in 2018.

Public investment in renewables

The trend in public investment in renewable energy has been revised upwards (due to improved reporting) and has been adjusted to real (2017) prices. These figures show that total public investment reached USD 21 billion in 2018, which is a decrease of USD 10 billion (-31.2%) compared to 2017. This decrease is due to a few large investments in 2017. IRENA, along with the OECD-DAC, is responsible for reporting progress on SDG Indicator 7.a.1 on international financial flows to developing countries in support of clean and renewable energy. This sub-set of the data shows that international support for investment in renewables reached USD 21.4 billion in 2017.