

# Renewable capacity highlights

31 March 2018

## HEADLINE FIGURES

**2,179 GW**

Global renewable generation capacity at the end of 2017

**8.3%**

Growth in renewable capacity during 2017

**167 GW**

Increase in global renewable generation capacity in 2017

**64%**

Share of new renewable capacity installed in Asia in 2017

**85%**

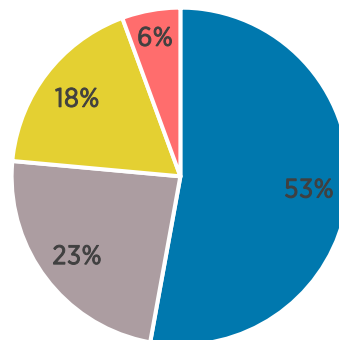
Wind and solar share of new capacity in 2017

**146 million**

Revised number of people served by off-grid renewable power

IRENA's renewable energy statistics can be downloaded at: [resourceirena.irena.org](http://resourceirena.irena.org)

## Renewable generation capacity by energy source

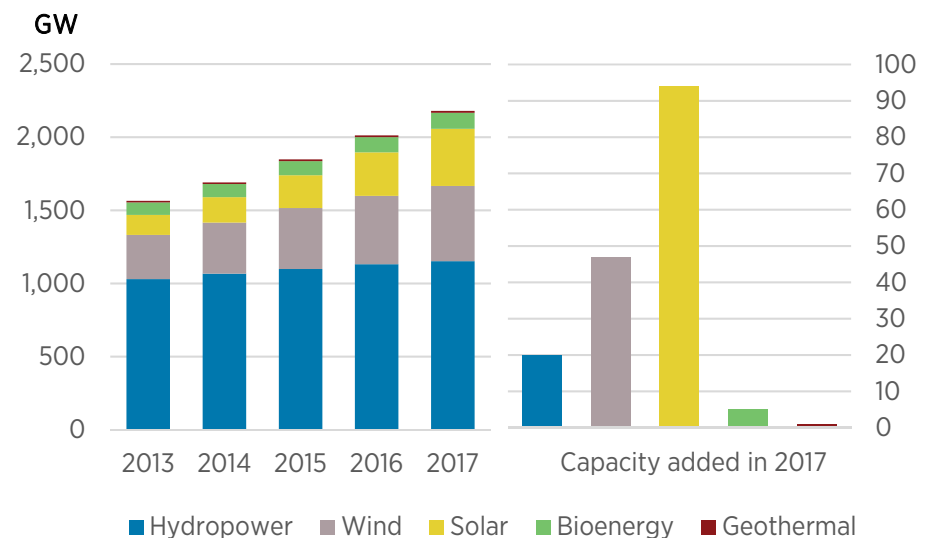


■ Hydro ■ Wind ■ Solar ■ Others

At the end of 2017, global renewable generation capacity amounted to 2,179 GW. Hydro accounted for the largest share of the global total, with an installed capacity of 1,152 GW.\*

Wind and solar energy accounted for most of the remainder, with capacities of 514 GW and 397 GW respectively. Other renewables included 109 GW of bioenergy, 13 GW of geothermal energy and 500 MW of marine energy (tide, wave and ocean energy).

## Capacity growth

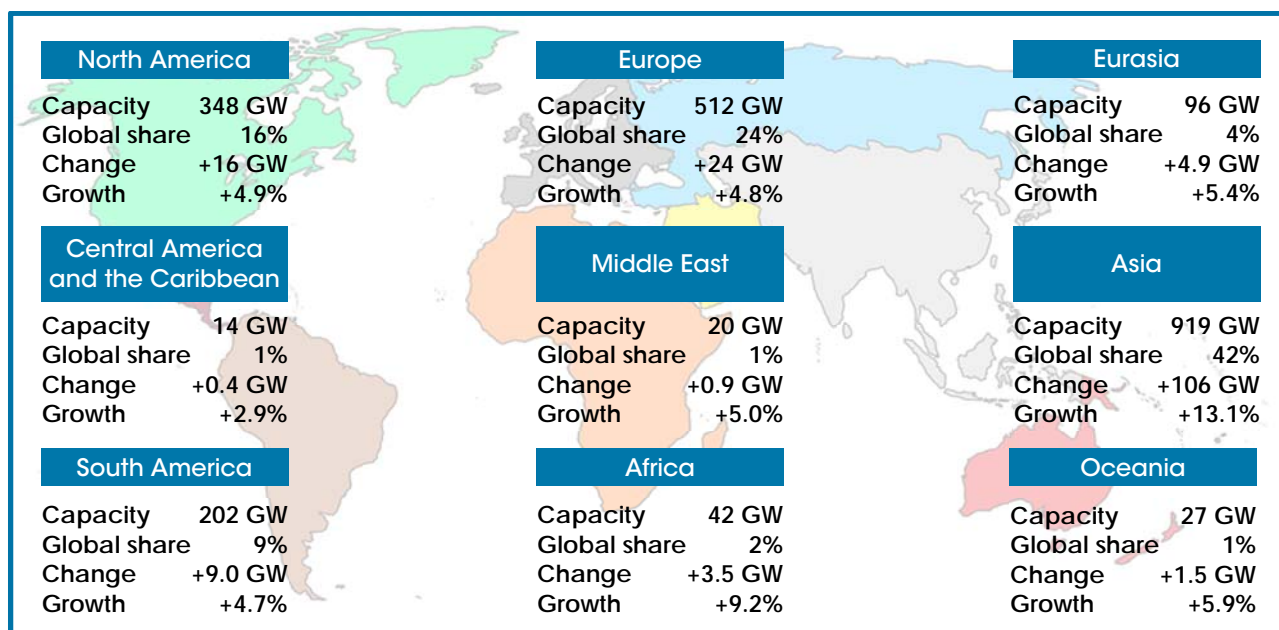


Similar to last year, renewable generation capacity increased by 167 GW or +8.3% during 2017. This continued the trend of 8-9% annual capacity growth in recent years. Solar energy took first place again, with a capacity increase of 94 GW (+32%), followed by wind energy with an increase of 47 GW (+10%). Hydropower and bioenergy capacities increased by 21 GW (+2%) and 5 GW (+5%) respectively. Geothermal energy increased by just under 1 GW.

Renewable capacity expansion continues to be driven mostly by new installations of solar and wind energy, which together accounted for 85% of all new capacity installed in 2017.

\* Note: these figures only include renewable hydropower and exclude pure pumped storage capacity. At end-2017, this was an additional 119 GW, giving a total hydro capacity of 1,271 GW.

## Renewable generation capacity at the regional level



For the complete dataset see: IRENA (2018), *Renewable capacity statistics 2018*, available at: [www.irena.org/publications](http://www.irena.org/publications).

Asia accounted for 64% of new capacity in 2017 (up from 58% last year), resulting in a total of 919 GW or 42% of global capacity. Asia was also the fastest growing region, with growth of +13.1% (same as last year). Europe regained second place in capacity expansion, with an increase of 24 GW (+4.8%) in 2017 compared to an increase of 16 GW (+4.9%) in North America. Capacity expansion in North America declined compared to last year, while European capacity expansion was close to the average in recent years of about 25 GW/year. Strong capacity growth was recorded again in Africa (3.5 GW, +9.2%) and increased in Eurasia (4.9 GW, +5.4%) and Oceania (1.5 GW, +5.9%), while growth slowed in all other global regions.

## Highlights by technology



**Hydropower:** The amount of new hydro capacity commissioned in 2017 was the lowest seen in the last decade. Brazil and China continued to account for most of this expansion (12.4 GW or 60% of all new capacity). Hydro capacity also increased by more than 1 GW in Angola and India.



**Wind energy:** Three-quarters of new wind energy capacity was installed in five countries: China (15 GW); USA (6 GW); Germany (6 GW); UK (4 GW); and India (4 GW). Brazil and France also installed more than 1 GW.



**Bioenergy:** Asia continued to account for most of the increase in bioenergy capacity, with increases of 2.1 GW in China, 510 MW in India and 430 MW in Thailand. Bioenergy capacity also increased in Europe (1.0 GW) and South America (0.5 GW), but the increase in South America was relatively low compared to previous years.



**Solar energy:** Asia continued to dominate the global solar capacity expansion, with a 72 GW increase. Three countries accounted for most of this growth, with increases of 53 GW (+68%) in China, 9.6 GW (+100%) in India and 7 GW (+17%) in Japan. China alone accounted for more than

half of all new solar capacity installed in 2017. Other countries that installed more than 1 GW of solar in 2017 included: USA (8.2 GW); Turkey (2.6 GW); Germany (1.7 GW); Australia (1.2 GW); South Korea (1.1 GW); and Brazil (1 GW).



**Geothermal energy:** Geothermal power capacity increased by +644 MW in 2017, with major expansions in Indonesia (306 MW) and Turkey (243 MW). Turkey passed the level of 1 GW geothermal capacity at the year-end and Indonesia is fast approaching 2 GW.



**Off-grid electricity:** IRENA continues to work on improving the collection and estimation of off-grid capacity data. It is now estimated that about 6.6 GW of renewable generation capacity serves off-grid customers (an increase of 620 MW or 10%). This figure is considerably higher than last year, but this is partly due to a reclassification of some capacity into the off-grid category. Considering the short lifetime of the solar devices used to provide a lot of this power, the estimated number of people using off-grid renewables was also revised down to 146 million, with 115 million using solar lights and the remainder connected to other types of renewable power.