



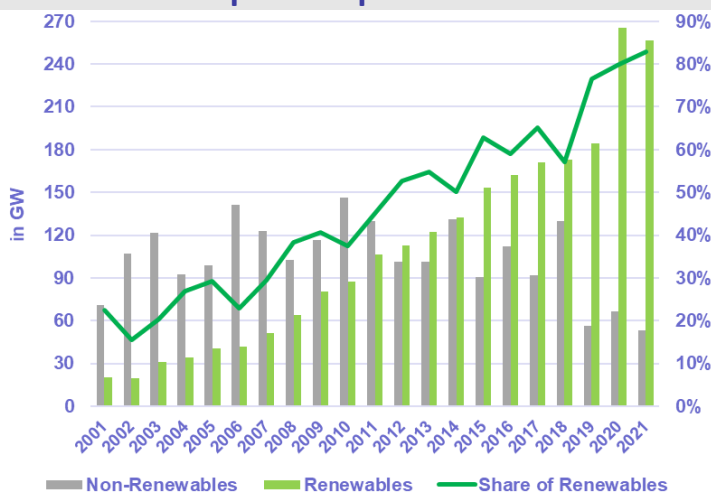
# ENERGY MARKET RADAR GERMANY

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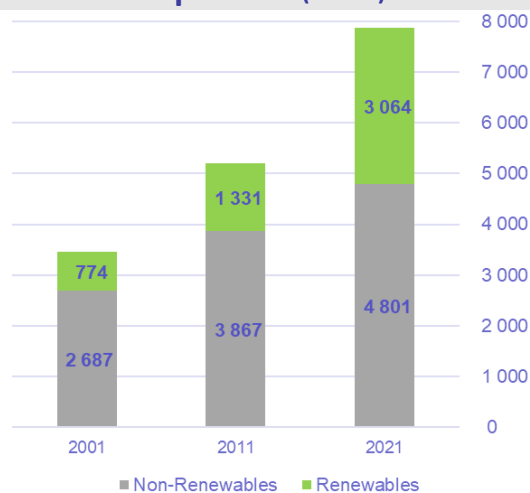
## KEY FACTS

- The globally installed renewable generation capacities have quadrupled in the last 20 years. The share of renewables among the capacities has noted at over 80% in 2021. The strongest growth has been seen for solar/ photovoltaics and wind engines.
- Asia is leading the renewable sector in all dimensions (total capacity share, growth rates, installed technologies). In contrast, South America and Africa will have to catch up significantly.
- The contribution of renewable generation to Germany's power supply during the wintertime is moderate, although the installed capacity of renewable generation (123 GW) exceeds the total system load (81 GW) by far. The lion's share is still generated by conventional power plants.

### Global expansion of power generation capacities p.a.



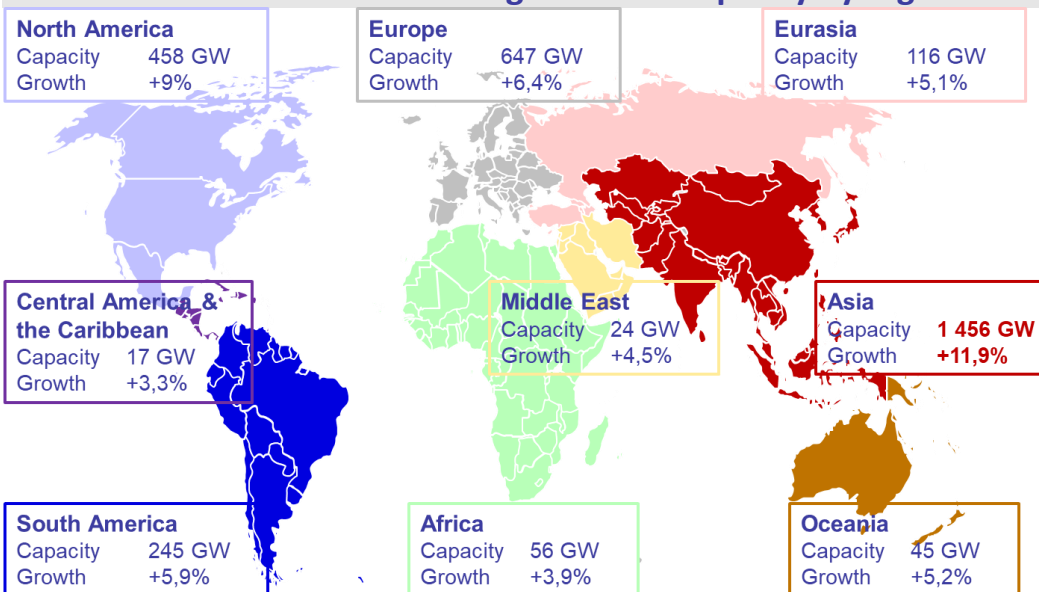
### Globally installed power generation capacities (in GW)



Source: IRENA, Team Consult Analysis

- The newly installed renewable generation capacities have decupled in the last 20 years - renewables have most recently taken a share of more than 80% of the totally newly installed generation capacities.
- In 2021, 40 % of the global power generation capacities are renewables — however, with an average of 2,600 load hours they only cover 28% of the global power demand of approximately 28,500 TWh

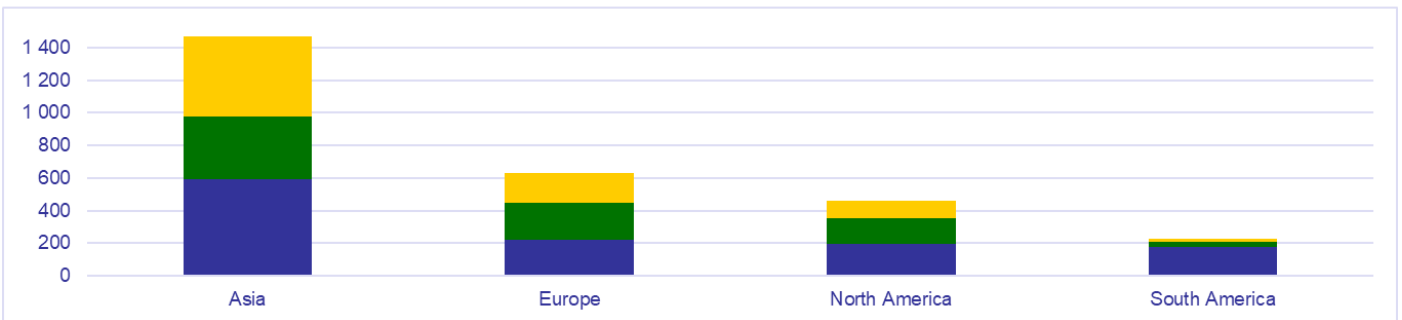
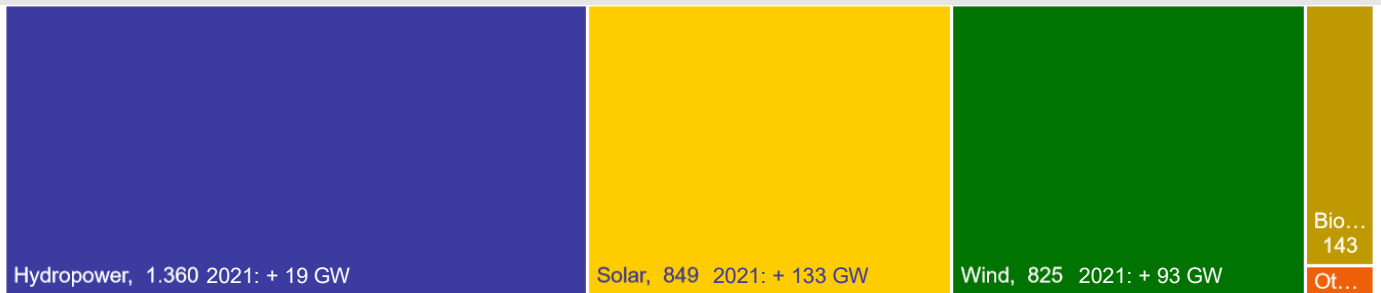
### Renewable generation capacity by region – 2021



Source: IRENA

- Asia is the leading region for renewable power generation with a share of 48% and moreover it has shown the highest growth rates recently
- Europe & North America are following – the latter might outstrip Europe in the future given its higher growth dynamics
- Despite their advantageous site conditions South America and Africa have to catch up significantly

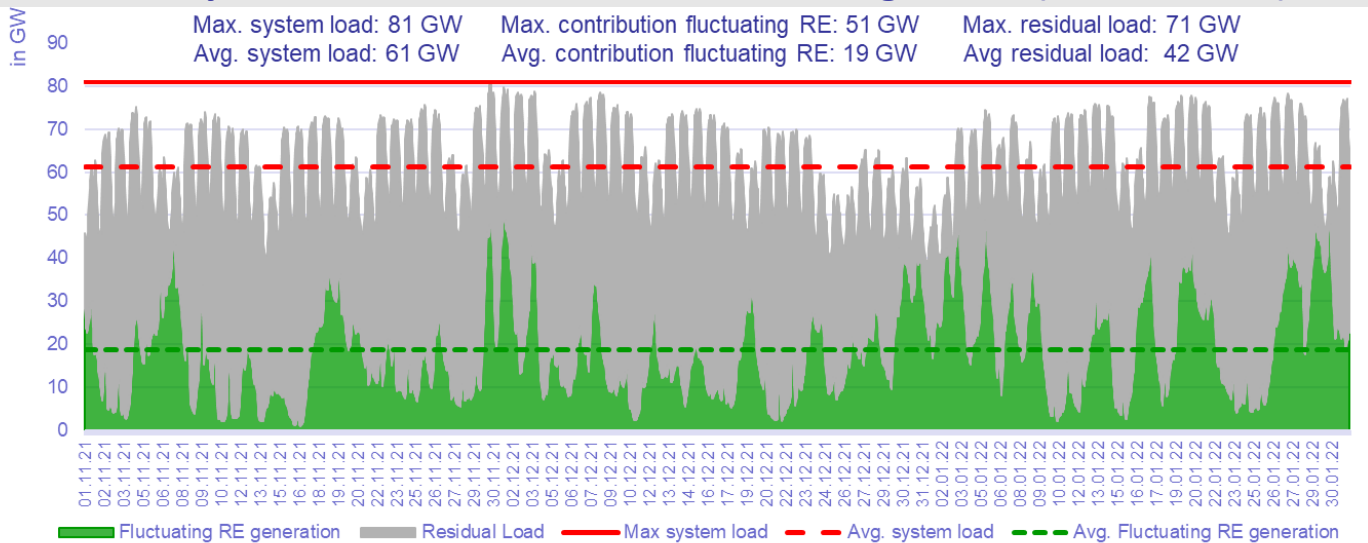
## Renewable Power Generation Technology 2021 (in GW)



Source: IRENA, Team Consult Analysis

- Hydropower accounts for just under 43% of the renewable capacities, solar and wind are following with 27% and 26%, respectively; solar and wind have seen growth rates between 10% and 20% in recent years.
- Solar and wind combined have the highest capacity share in Europe (65%); South America so far relies on hydropower (78%)
- Regarding the total amount of installed capacities Asia is leading in all technologies

## Germany: RE Generation & residual load during winter (11.21 - 01.22)



Source: Bundesnetzagentur | SMARD.de, Team Consult Analysis

- In 2021, there have been 123 GW fluctuating renewable and 92 GW conventional capacity in operation according to Federal Network Agency.
- With an average of 19 GW, renewables cover only 30% of the average system load during the wintertime.
- Under adverse weather conditions, up to 71 GW residual load have to be supplied by conventional generation plants.
- With an average of 42 GW, conventional plants contribute more than twice as much as renewable generation.

### Imprint

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