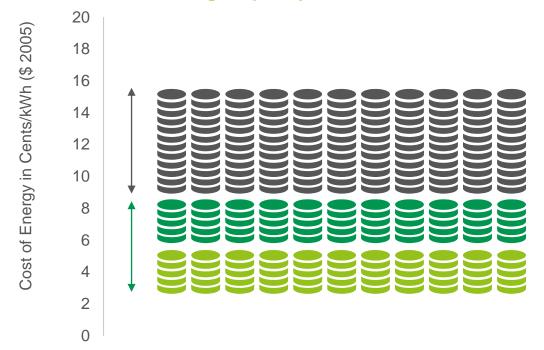




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# What is grid parity?

### The three levels of grid parity





Residential and Commercial Rates



**Utility Generation** 

#### Consumer price level

Easiest to achieve as costs of energy are similar to high end-consumers prices, which are loaded with taxes and grid fees

### Wholesale price level

price levels, at which utilities purchase and trade energy

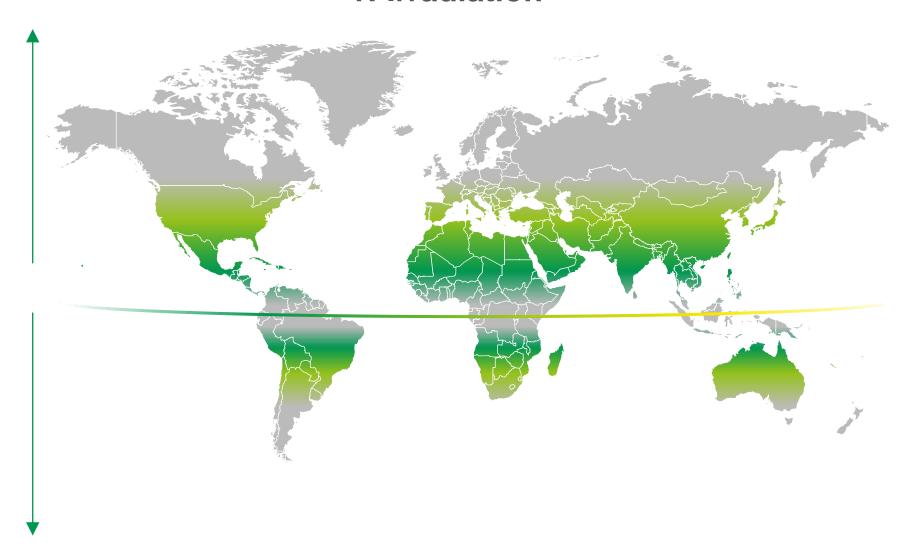
### **Production price level**

Same cost of energy production as classic electricity utilities companies

A technology is at grid parity, if it delivers energy at the same or lower cost than other technologies



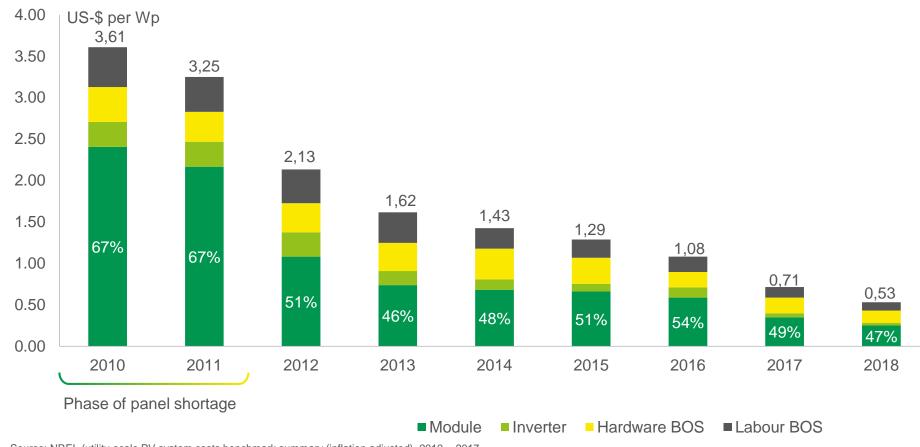
# The three main parameters for grid parity of solar 1: Irradiation





# The three main parameters for grid parity of solar 2: Construction cost

## Comparison of the CAPEX Split for a PV installation

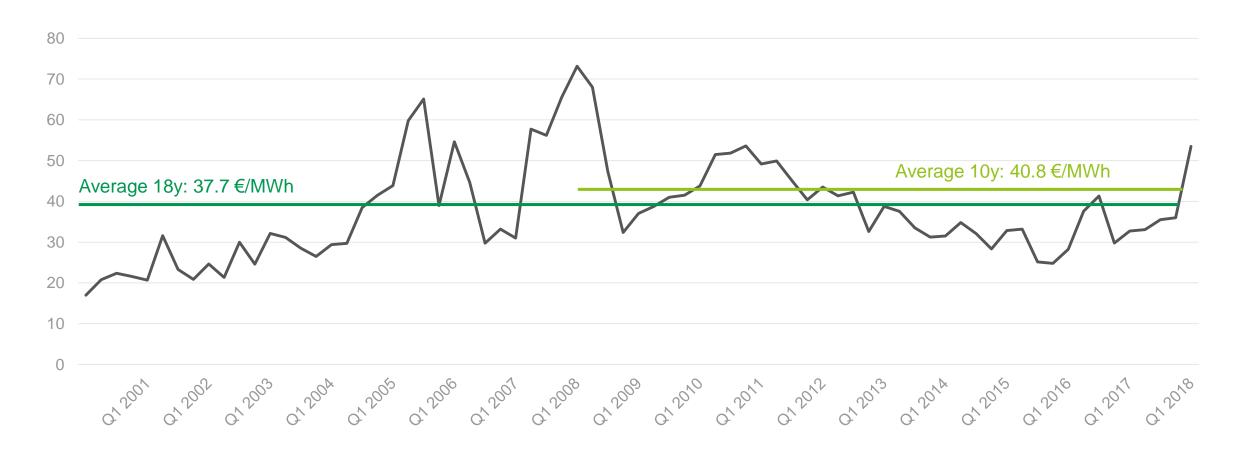


Source: NREL (utility-scale PV system costs benchmark summary (inflation adjusted), 2010 – 2017 2018ff: data projection BayWa



# The three main parameters for grid parity of solar 3: Electricity prices

**Average Spot Power Price Germany (EUR/MWh, real prices)** 





# Transition to grid parity of solar is in progress

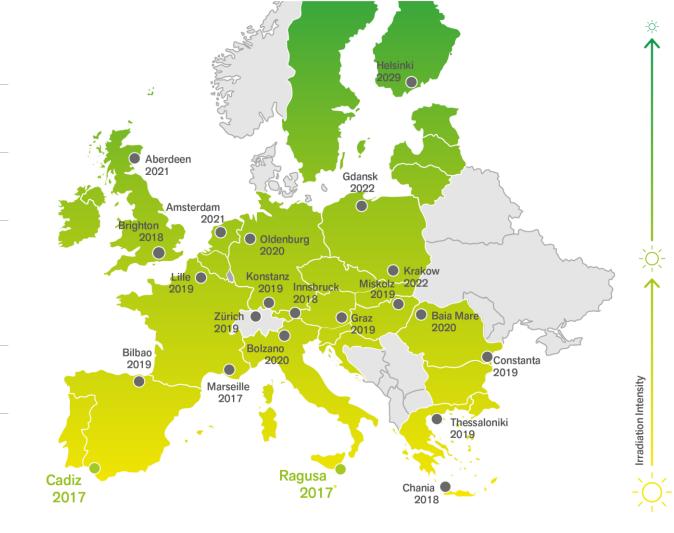
## **Grid Parity spreads across Europe**

#### It based on

- The expected price developments of whole sale electricity in each country
- The solar irradiation map
- Expected price developments in EPC and material costs for photovoltaic

#### It does not contain

- Grid connection costs
- > Possible differences in land and development costs



The study was performed 2016 by the Bequerel Institute, Brussels

