

# Economic cost of clean energy.

Activity P6.

*“Current status and Future Prospects of  
Renewable Energy in Europe”*

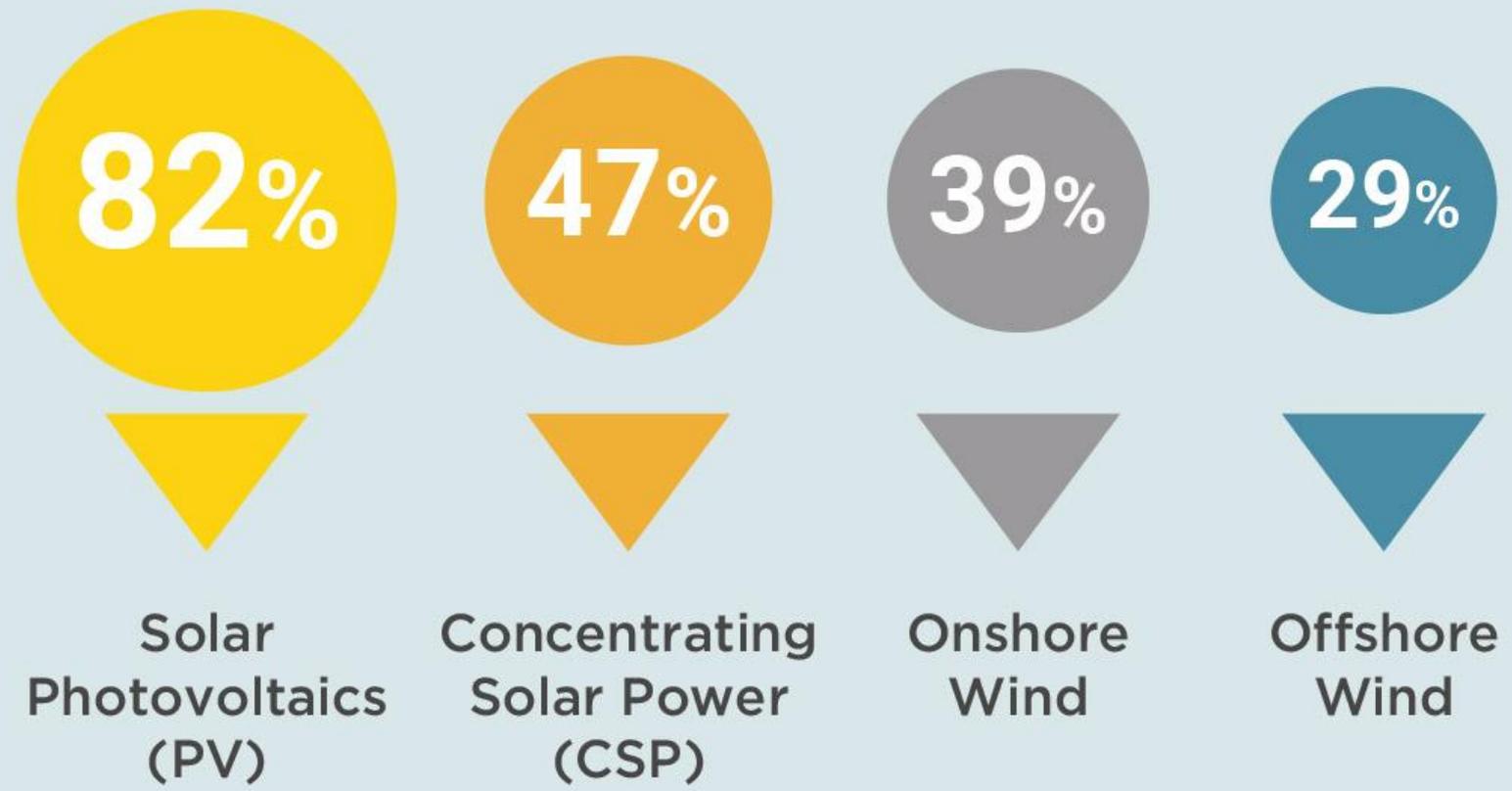
# Actual Situation (I)

- Photovoltaic solar energy and onshore wind energy are now the cheapest sources of electricity generation for at least two-thirds of the world's population.
- The International Renewable Energy Agency says half of new solar and wind installations undercut fossil fuels in 2019.

# Actual Situation (II)

- Since 2010, the cost of new solar photovoltaic projects has fallen by 82%.
- Governments are debating whether to stimulate economic recoveries with “green growth” policies, including investment in renewables.

## FALLING POWER GENERATION COSTS



82%

Solar  
Photovoltaics  
(PV)

47%

Concentrating  
Solar Power  
(CSP)

39%

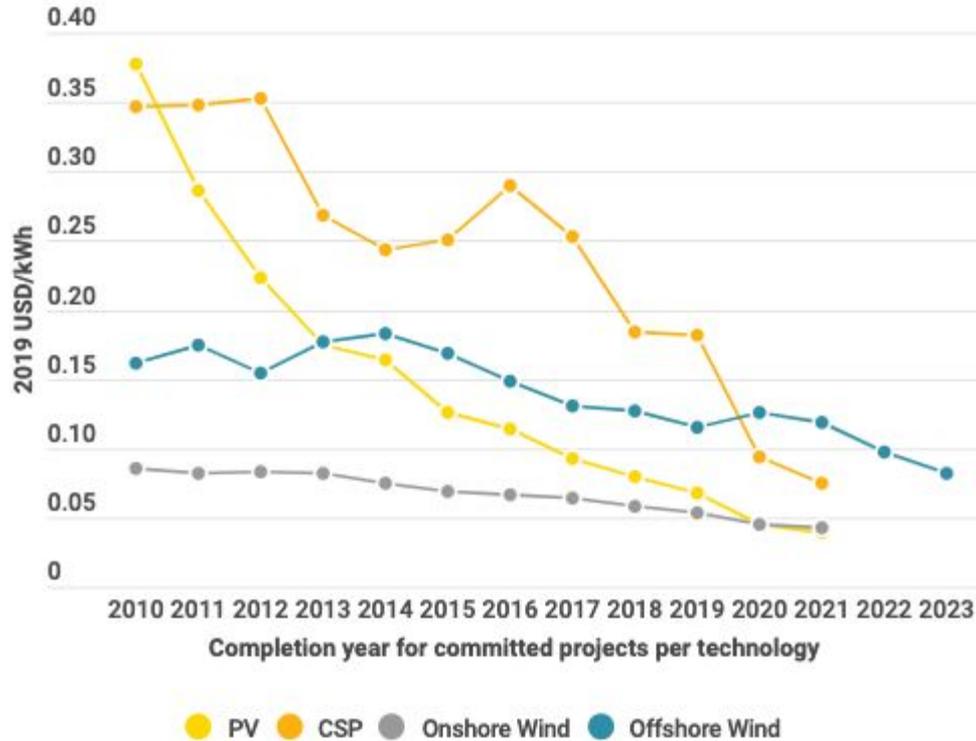
Onshore  
Wind

29%

Offshore  
Wind

## POWER GENERATION COSTS IN 2019

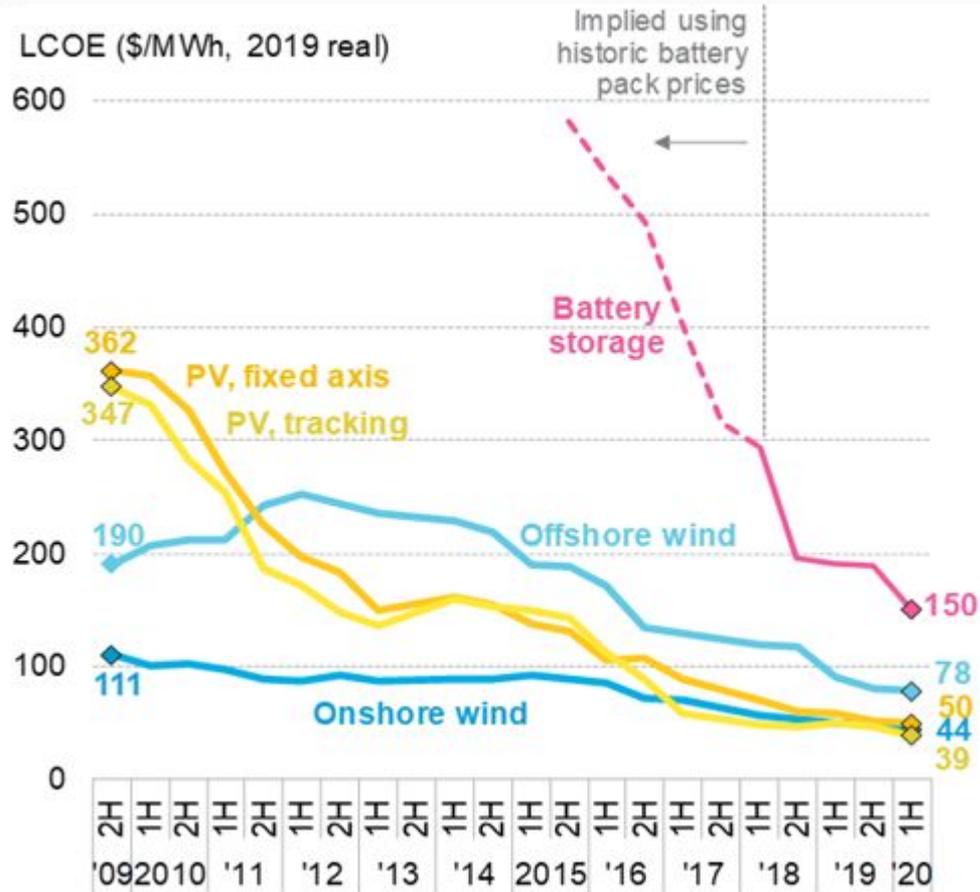
# Costs continued to fall in 2019 for solar and wind power technologies



PV: Photovoltaics  
CSP: Concentrated Solar  
Power

# LCOE

- The Levelized World Benchmark Cost of Electricity, or LCOE, for onshore wind and large-scale PV has fallen by 9% and 4% since the second half of 2019, to € 40.5 and € 46.1 / MWh, respectively.



Offshore wind



Onshore wind

# Battery Use

- Is now the cheapest new build technology for backup power for peak demand (up to two hours discharge duration) in gas-importing regions such as Europe, China or Japan.
- Baseline LCOE for battery storage has been reduced to € 138.1 / MWh, about half of what it was two years ago.

# Reasons for the price drop. Solar Energy

- Rapid addition of better performing monocrystalline modules (higher energy performance).

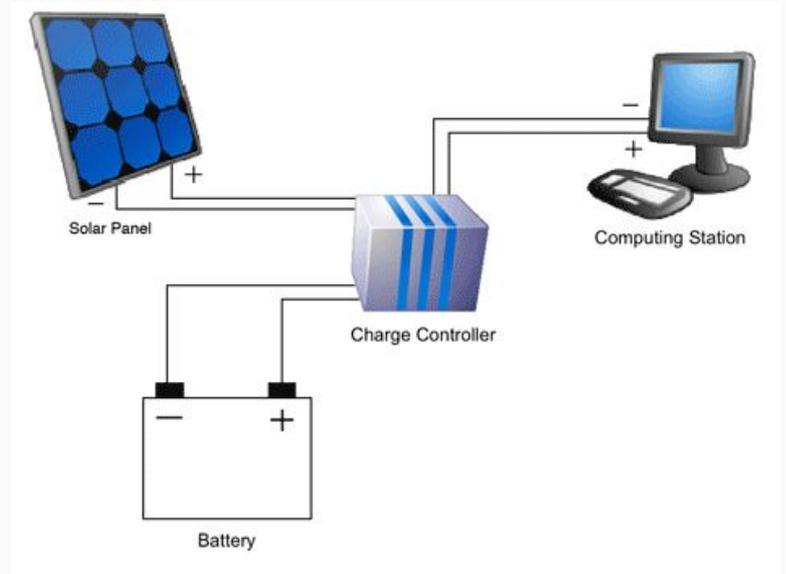


# Reasons for the price drop. Eolic Energy

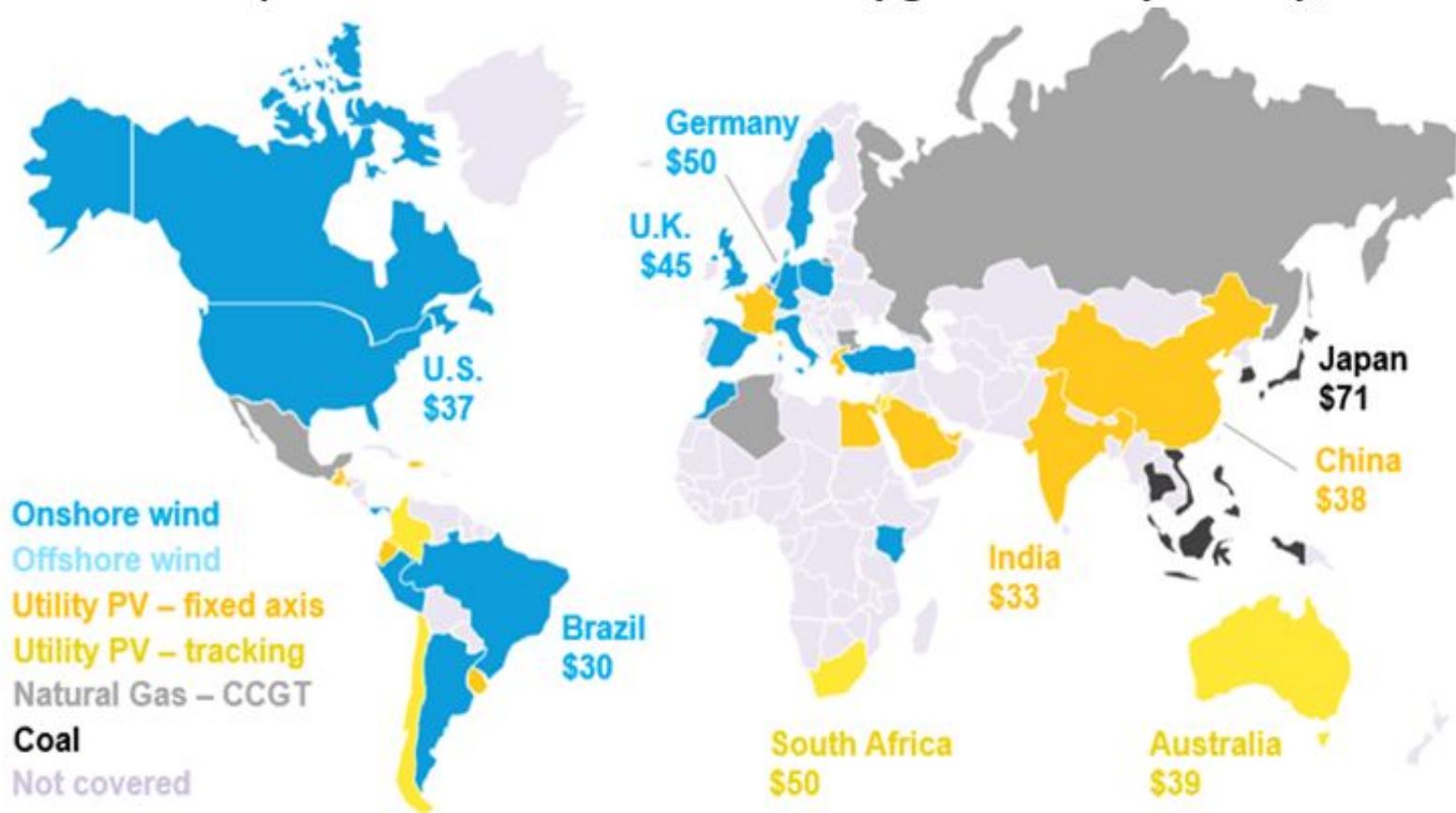
- Onshore wind has seen the most significant drop in cost since 2015.
- Reason: an increase in turbine power, which now averages 4.1 megawatts and is priced at around € 0.64 million per megawatt for projects recently funded.

# Reasons for the price drop. Battery use

- With a rapidly expanding manufacturing base and more energy-dense chemicals, battery have cut the LCOE of energy storage in half.



## Cheapest source of new bulk electricity generation by country, 1H 2020



## Sources:

- <https://www.weforum.org/agenda/2020/06/renewable-energy-cheaper-coal/>
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- <https://www.evwind.com/2020/06/02/costos-de-generacion-de-energia-renovable-en-2019/>
- <http://energia.renovetec.com/energias-renovables/294-comparativa-de-costes-de-las-energias-renovables>
- <https://elperiodicodelaenergia.com/los-costes-de-las-renovables-se-desploman-en-2020-la-energia-solar-y-la-eolica-terrestre-son-las-fuentes-mas-baratas-en-casi-todo-el-mundo/>