


# Innovation and Energy Transition

By: Dr. Mohammed Alqarni

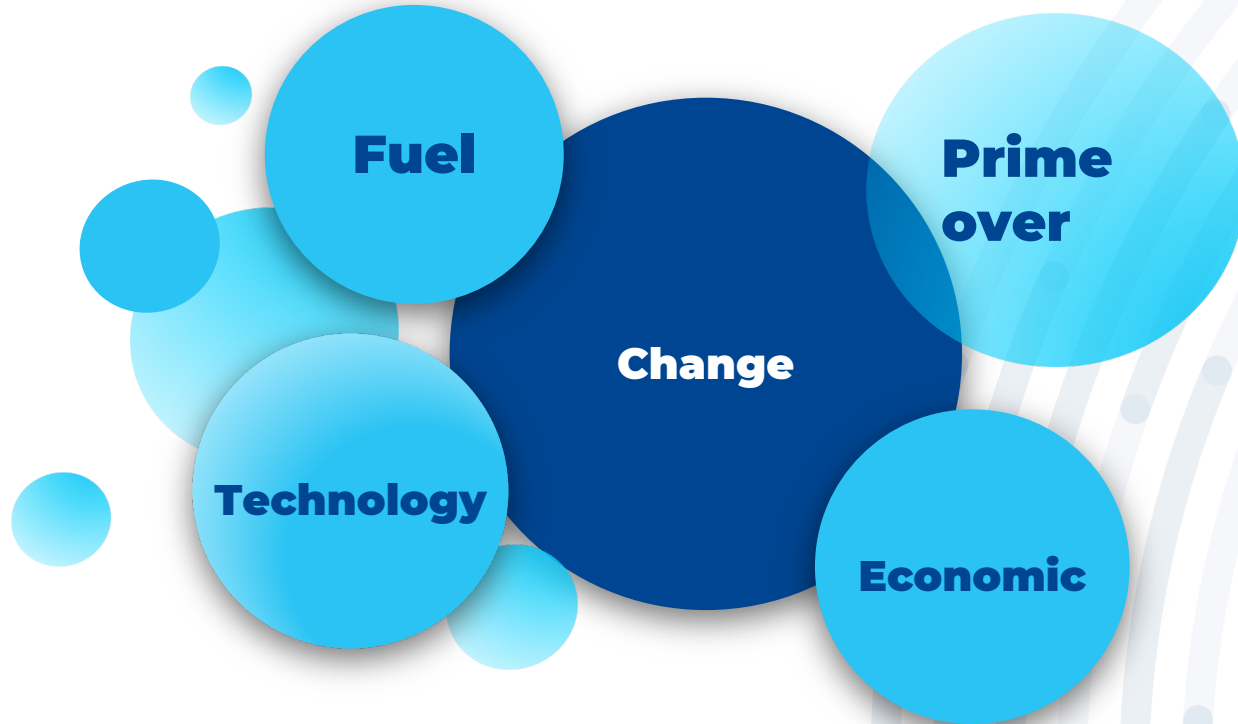
A world map is centered in the background, showing the continents in white against a blue background. Several small colored circles (green, yellow, red) are placed on the map, indicating different levels of electricity access in various regions. The largest number, 940,000,000, is overlaid in large red font across the center of the map.

**940,000,000**

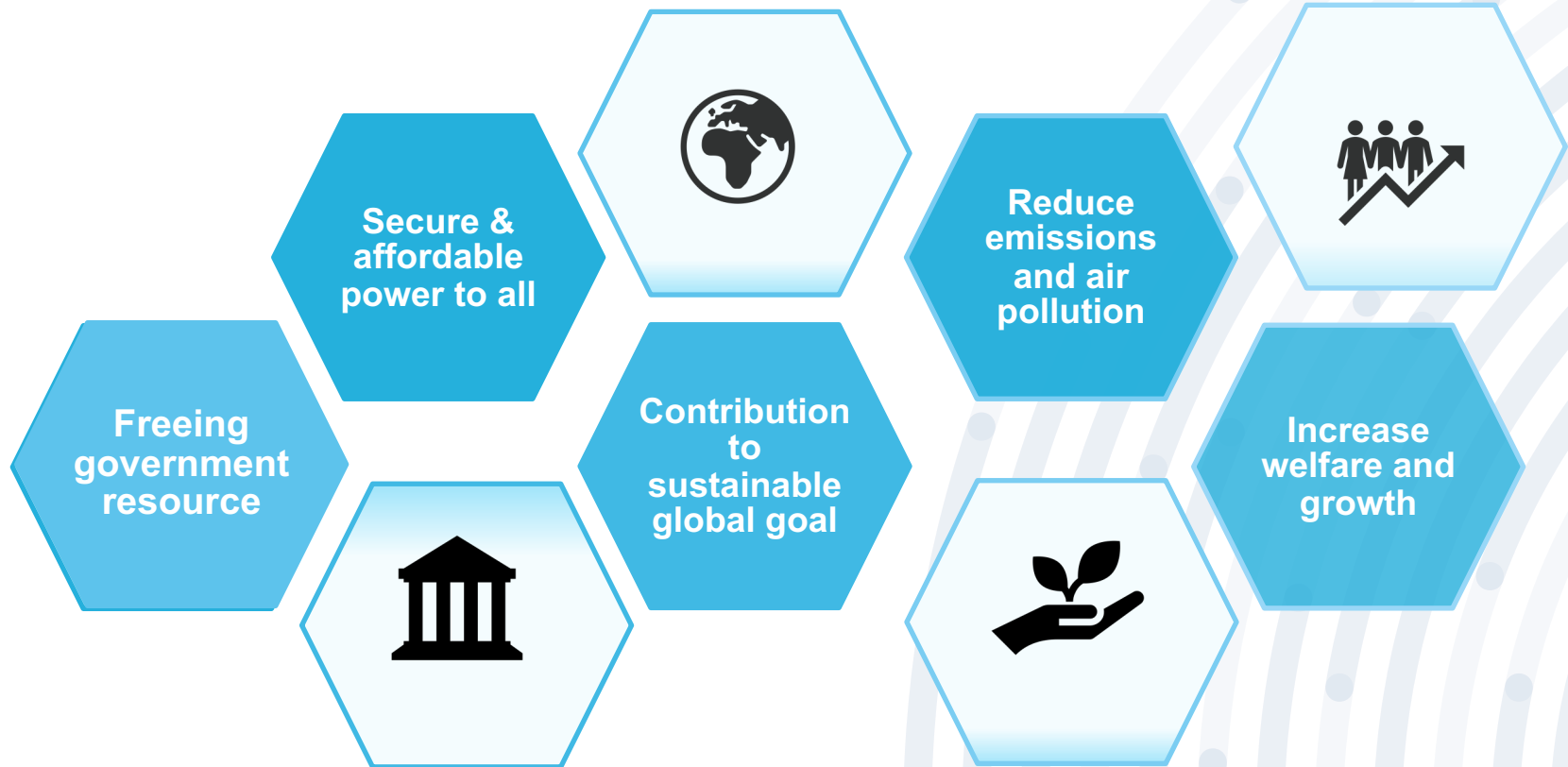
**World's population don't have access to electricity**

[1] <https://ourworldindata.org/energy-access#:~:text=Citation-,Summary,to%20clean%20fuels%20for%20cooking.>

# What is an Energy Transition?



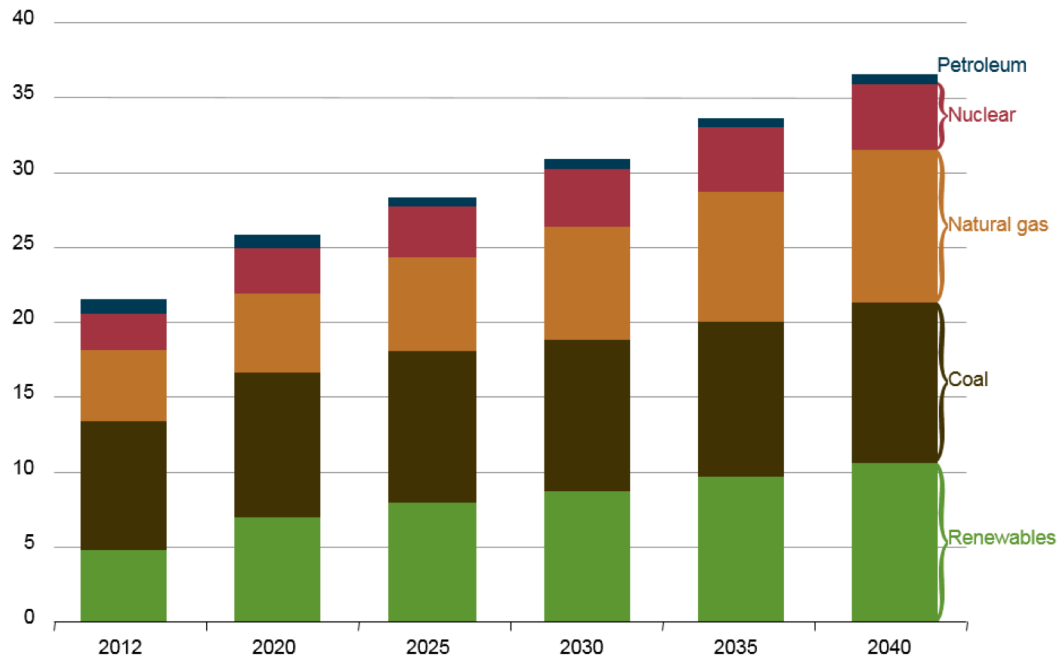
# Why Energy Transition



# World total electricity generation 2012 - 2040



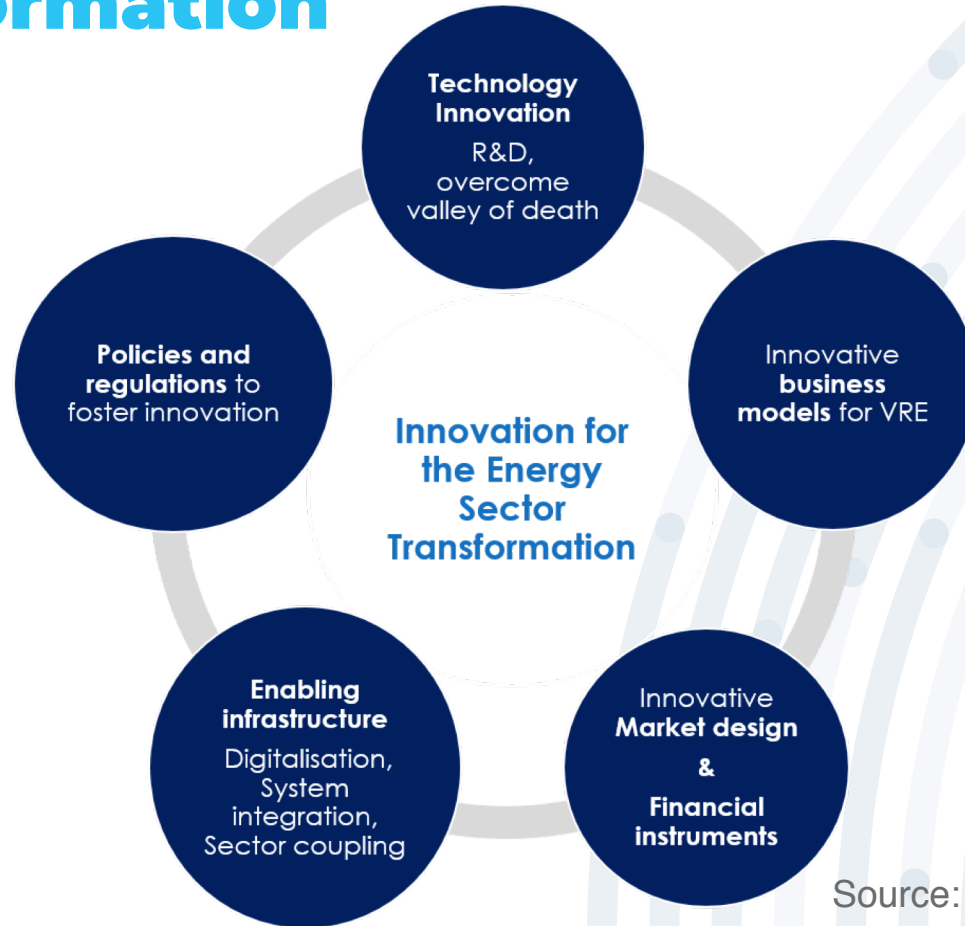
trillion kilowatthours



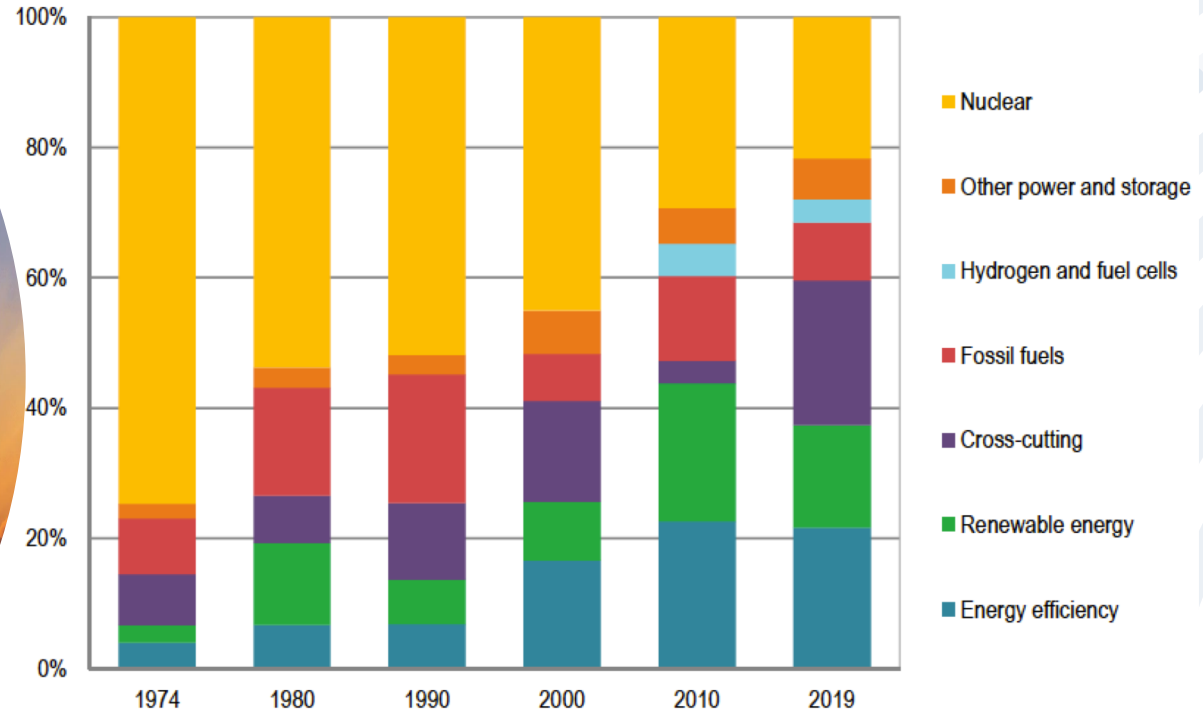
Source: IEA. All rights reserved



# Innovation for the energy sector transformation

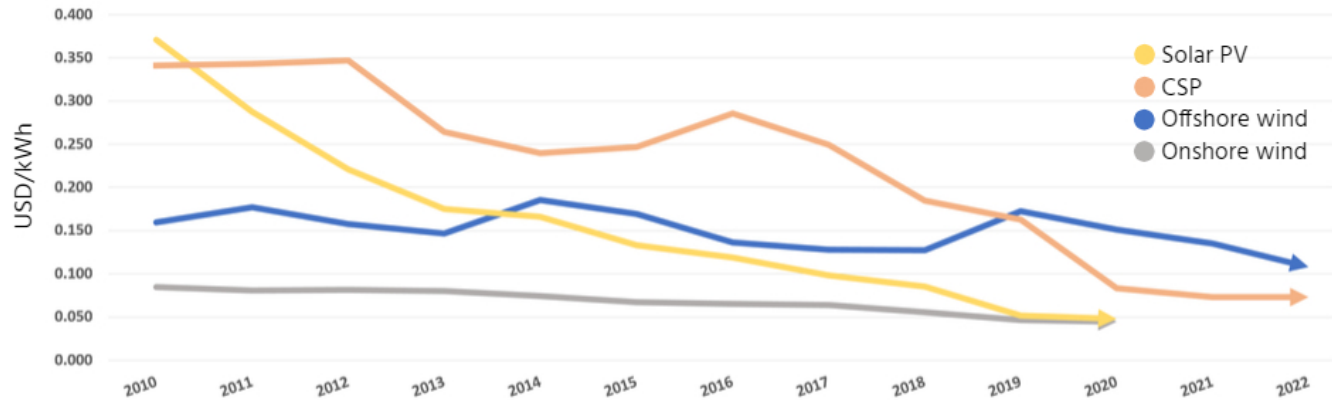


# Evolution of IEA total public energy RD&D by technology



# Cost of renewable energy

By 2020, **onshore wind** and **solar PV** will be a less expensive source of new electricity than the cheapest fossil fuel alternative.



RENEWABLE POWER GENERATION COSTS IN 2018

# Innovation gaps

- Renewable Energy Integration
- CO<sub>2</sub> Mitigation
- Energy Storage
- Energy Efficiency
- Electric Vehicle charging
- Smart meters



# Recommendations

- Establishing an independent sustainable energy innovation fund for Starts up and R&D
- Developing and implementing energy technology road maps through public-private collaboration.
- The Ministry of Energy to organize a national prize to recognize most innovative and outstanding entrepreneurial solutions in energy technologies

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The world needs to develop sustainable technologies to meet climate goals such as improving energy efficiency

H.R.H Abdulaziz Bin Salman



# Thanks!

## Any questions?

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