



# SECURITY OF THE ENERGY SUPPLY – NOTHING WILL BE THE SAME

## Electricity prices and investments

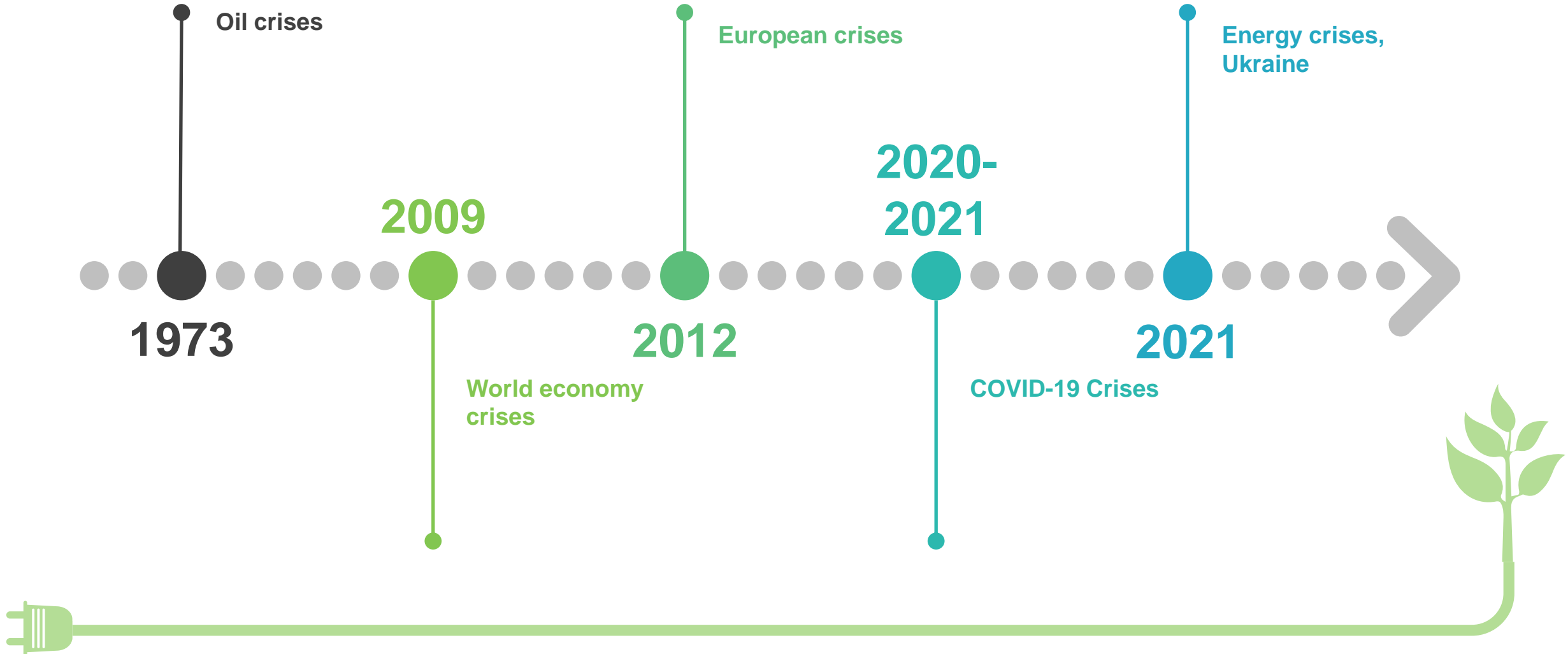
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- 02** How states solve the crisis
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# World crises



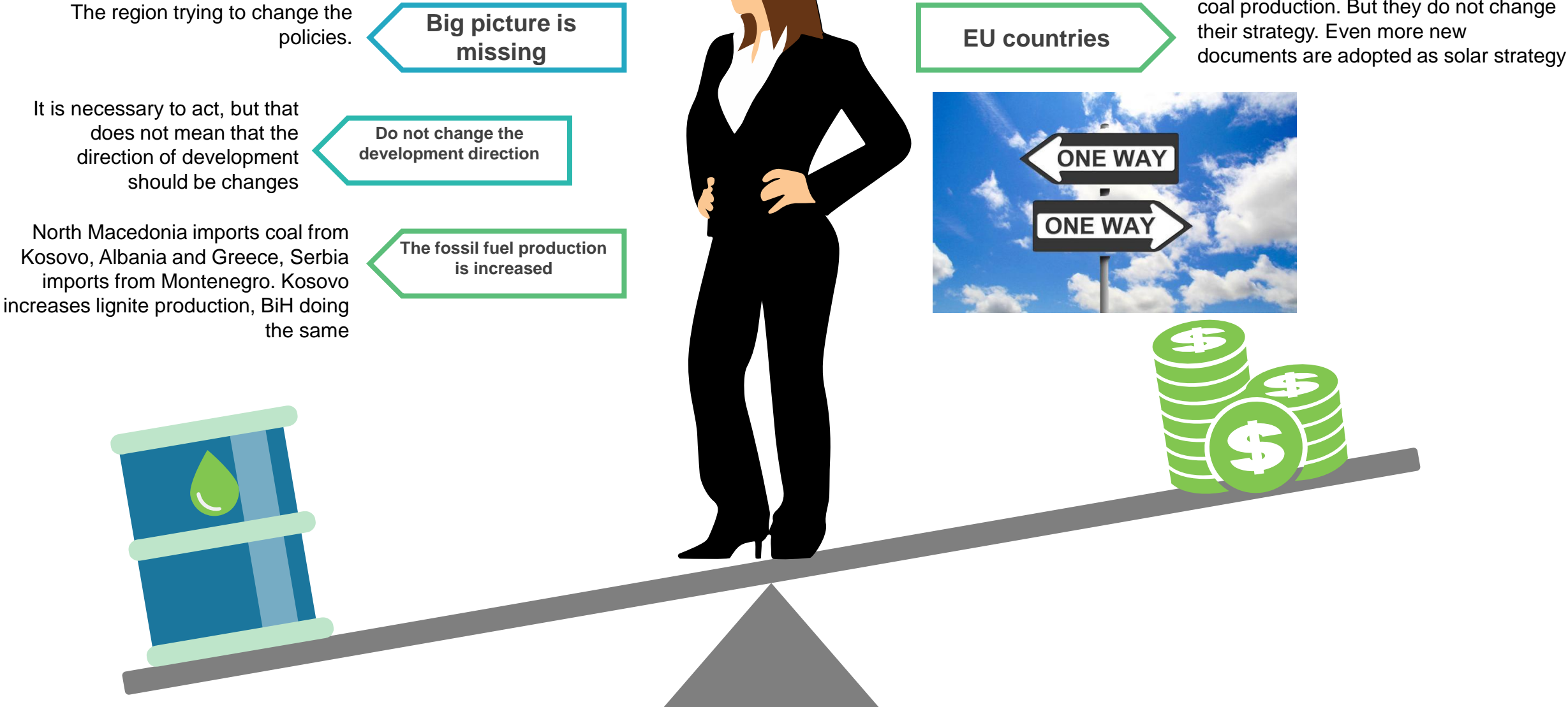
# How states solve the crisis



## Fuel switch

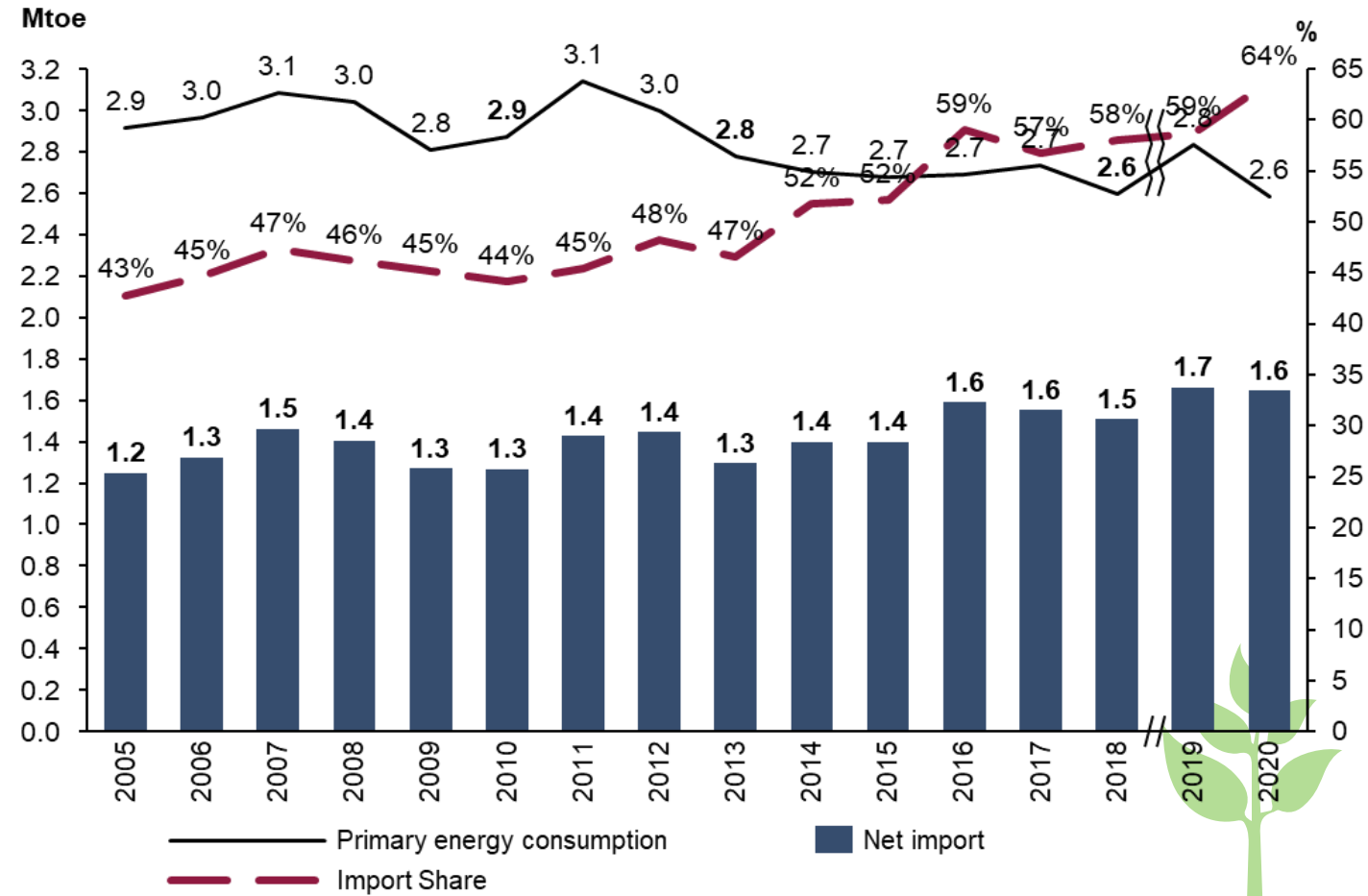
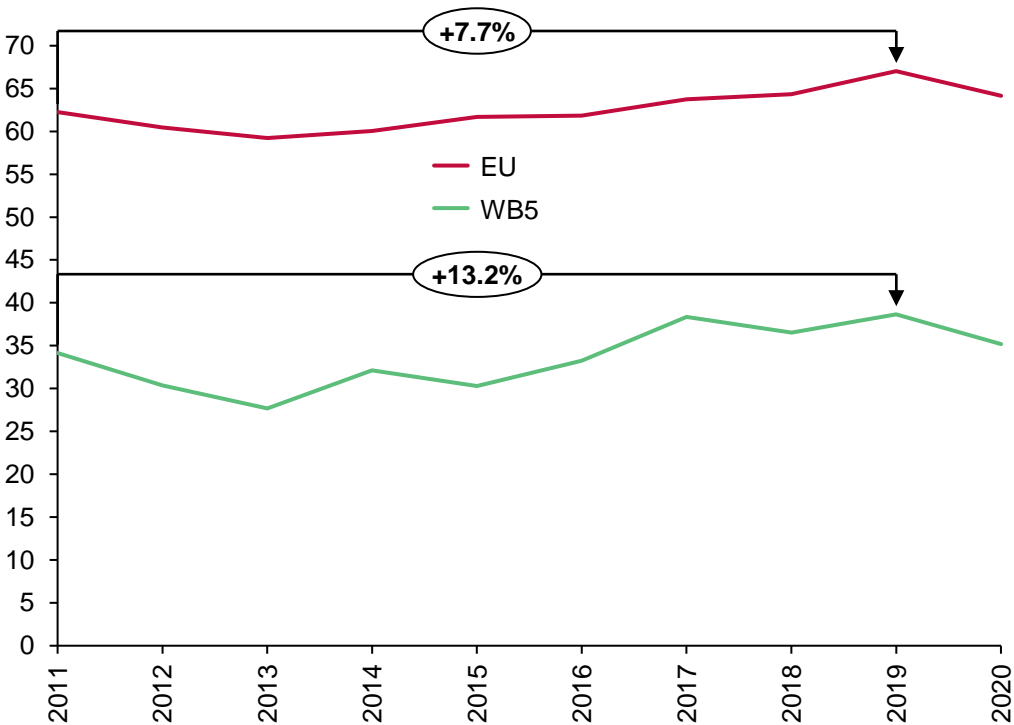
- A lot of countries made a fuel switch from oil to natural gas, lignite and nuclear.
- Most of them oriented themselves towards what is available at home,
  - USA coal,
  - France established its nuclear program.
- Although energy efficiency was almost non-existent at the time, France recommended to the people to heat their homes to a temperature of 20°C.
- Innovation and new technologies

# How states solve the crisis



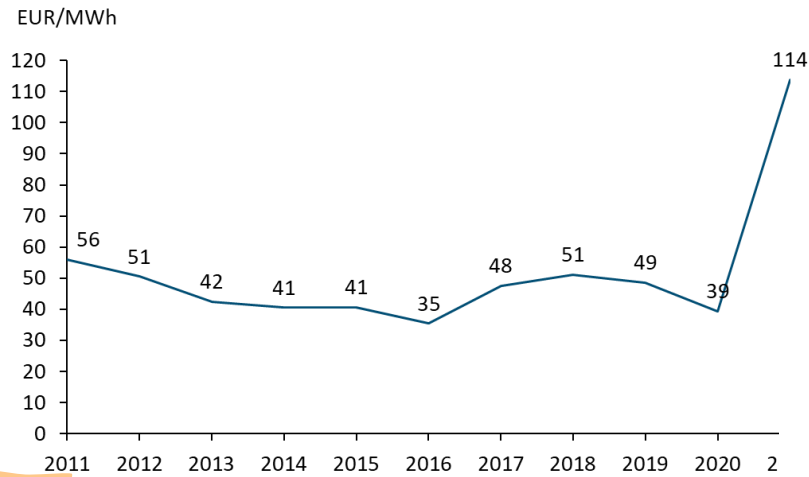
# Import dependent country

- The region and EU have the same problem



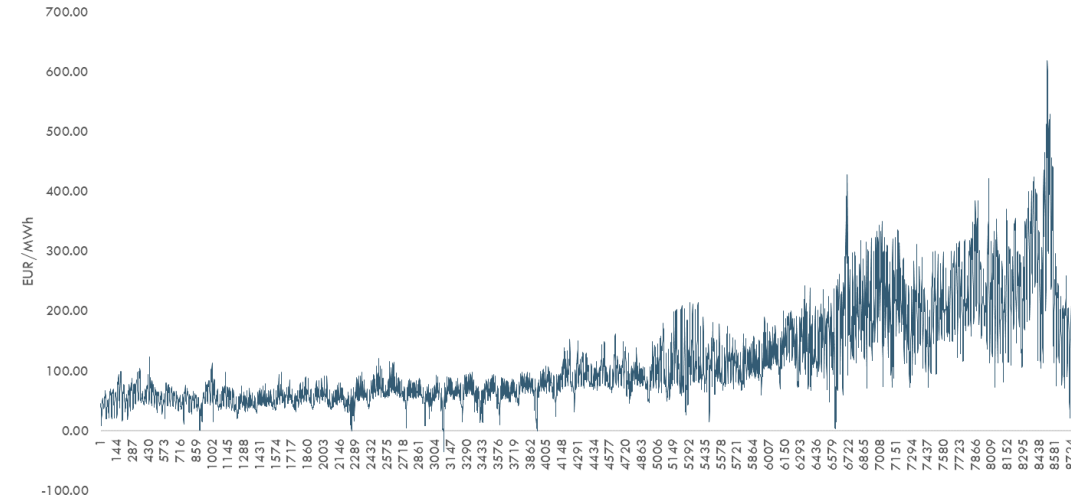
# The market

- Liberalization of the market, good for the companies in the last 10 years,
- Bad for new investment, all investments were compared with the market prices, position and opposition
- CO2 tax, was far from the region but indirectly we are paying it
- Production price of different technologies



Source: HUPX

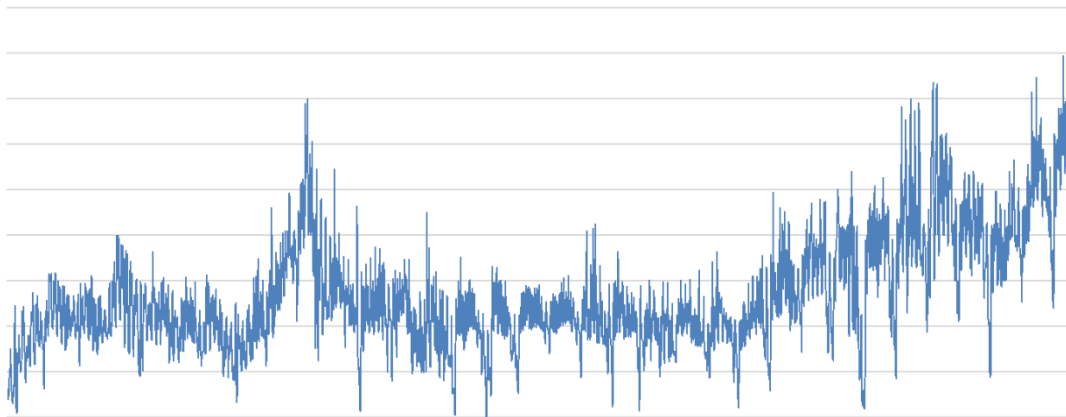
2021



# The market

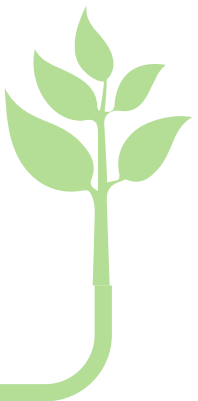
- The price are going up.
- Accelerate the transition. The production price of wind and solar are the lowest price at the moment.

2022



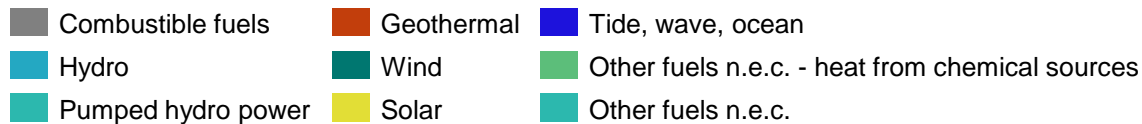
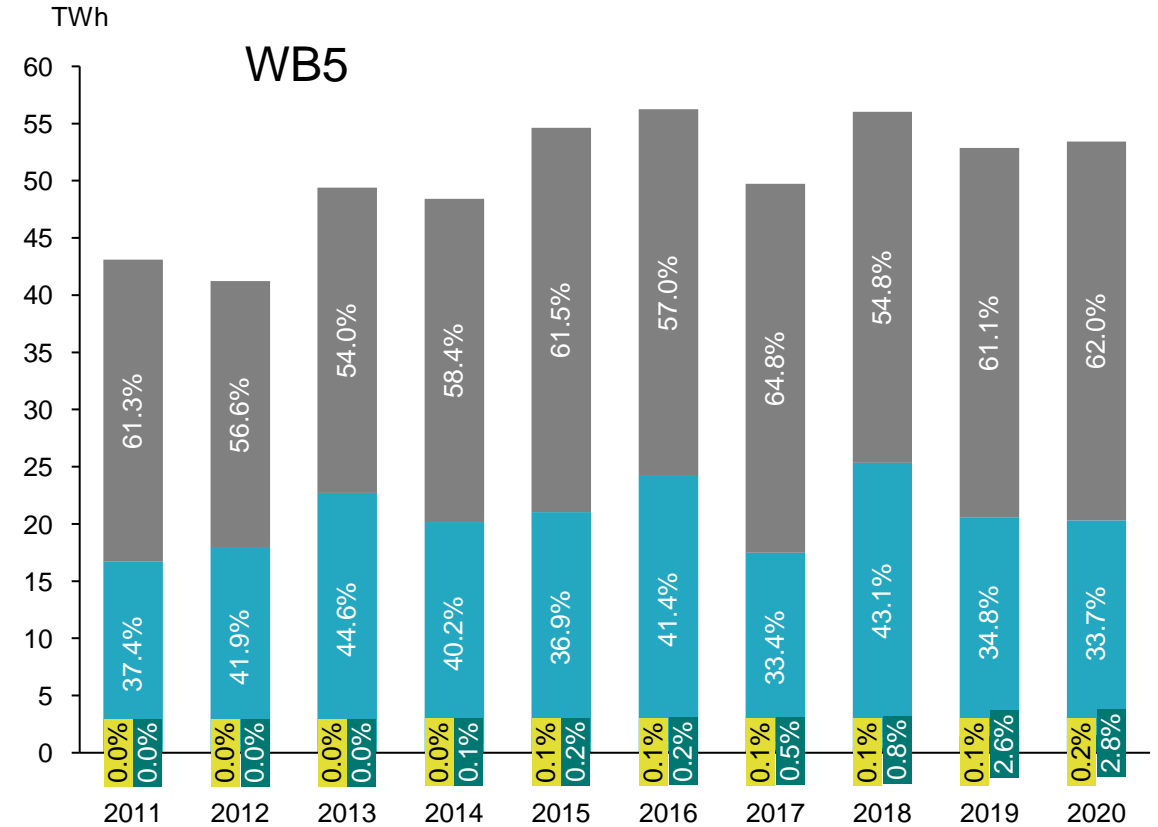
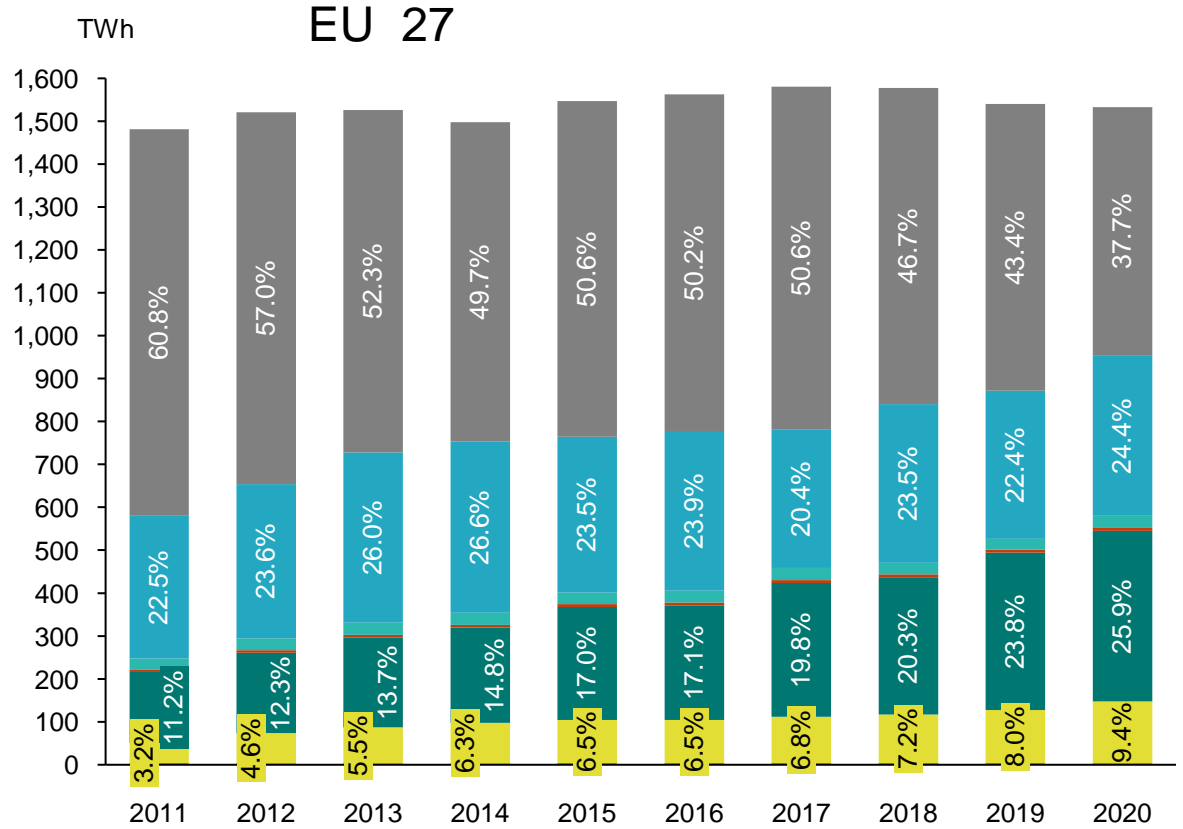
Trading day: 23.08.2022

Contract	Settlement price (EUR/MWh)
BL Sep-22	614.29
BL Q4-22	774.02
BL YR-23	647.31



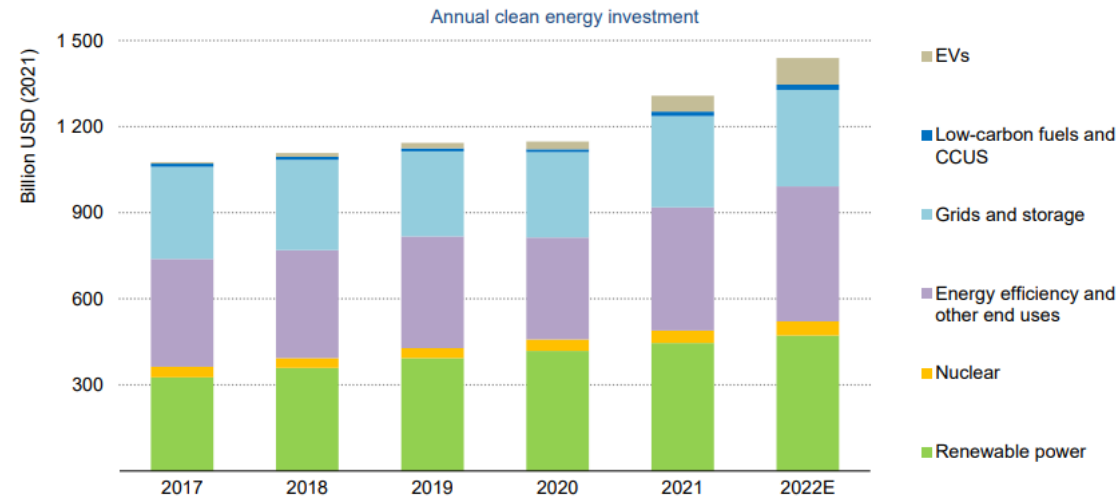


# Investments - Electricity generation

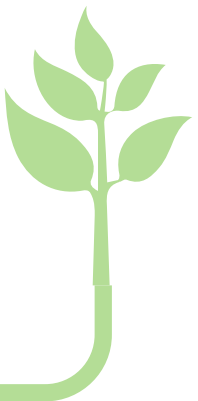


# Investments

- In the period from 2017 to 2020 investments in clean technologies increased by an average of 2% per year so that in 2021 they will increase by about 18% compared to 2020
- Investments at the world level for 2022 are planned to reach 2400 billion euros, of which about 60% are investments in clean technologies (renewable sources, energy efficiency, energy storage, etc.).
- Hydrogen is entering the EU on a grand scale, although its more widespread use is planned for after 2025



Source: International Energy Agency,



# Solutions

2022 requests

>3000 MW

750 MW



Wind

1400 MW



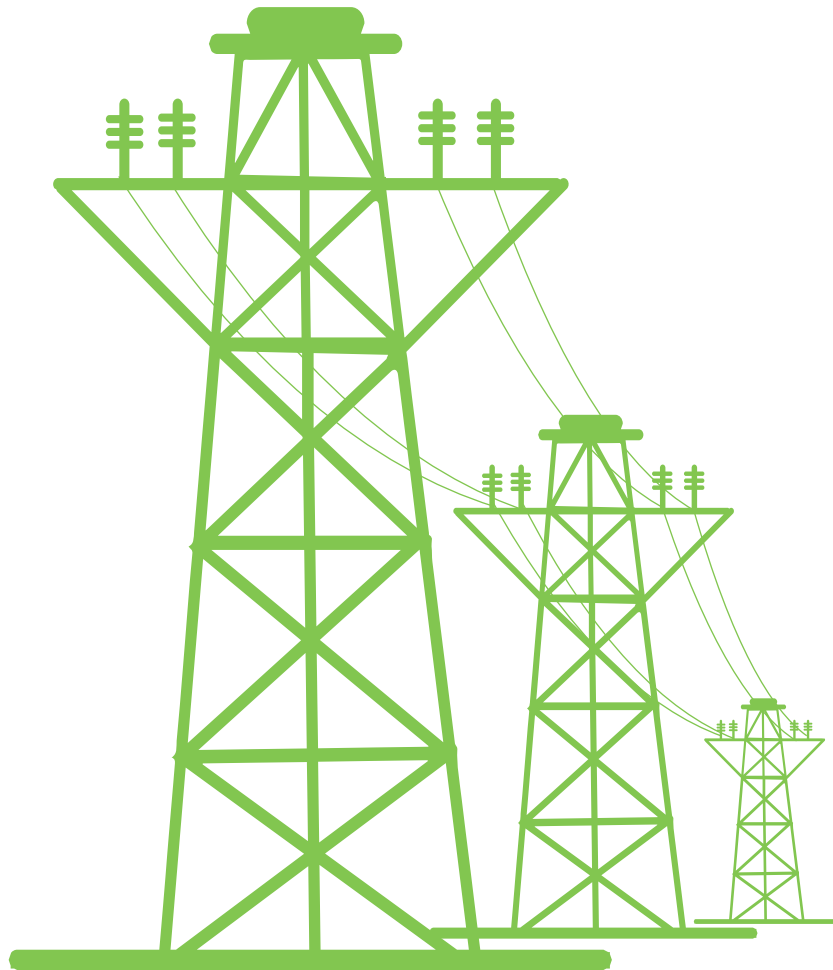
Solar

>3000 MW



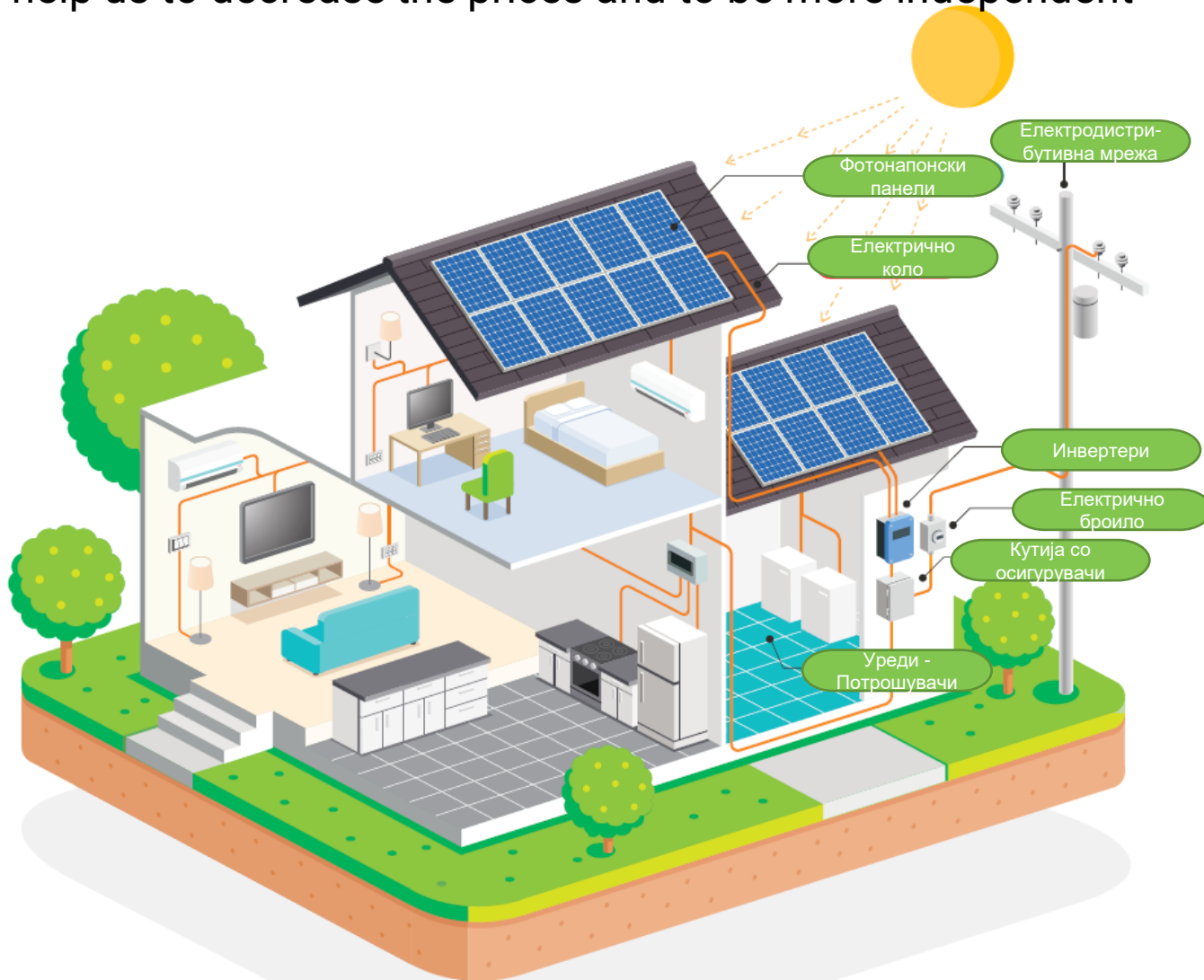
Hydro

Hydro pump  
storage

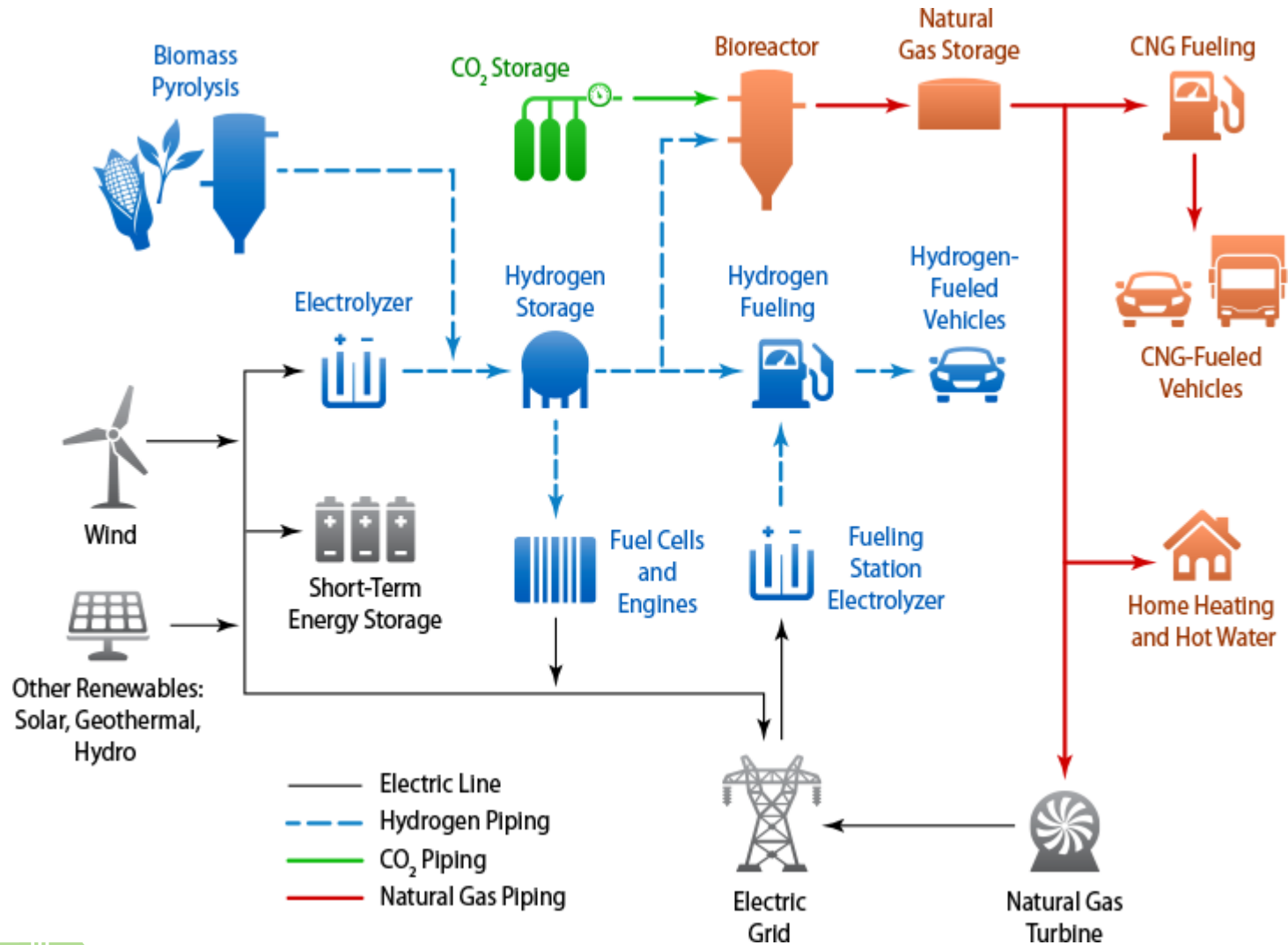


# Solutions

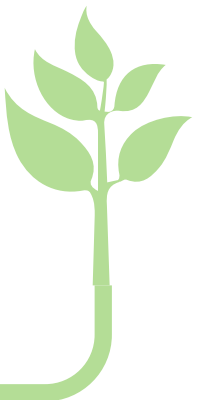
- A lot of technologies were invented to decrease the GHG emissions, now they will help us to decrease the prices and to be more independent



# Solutions



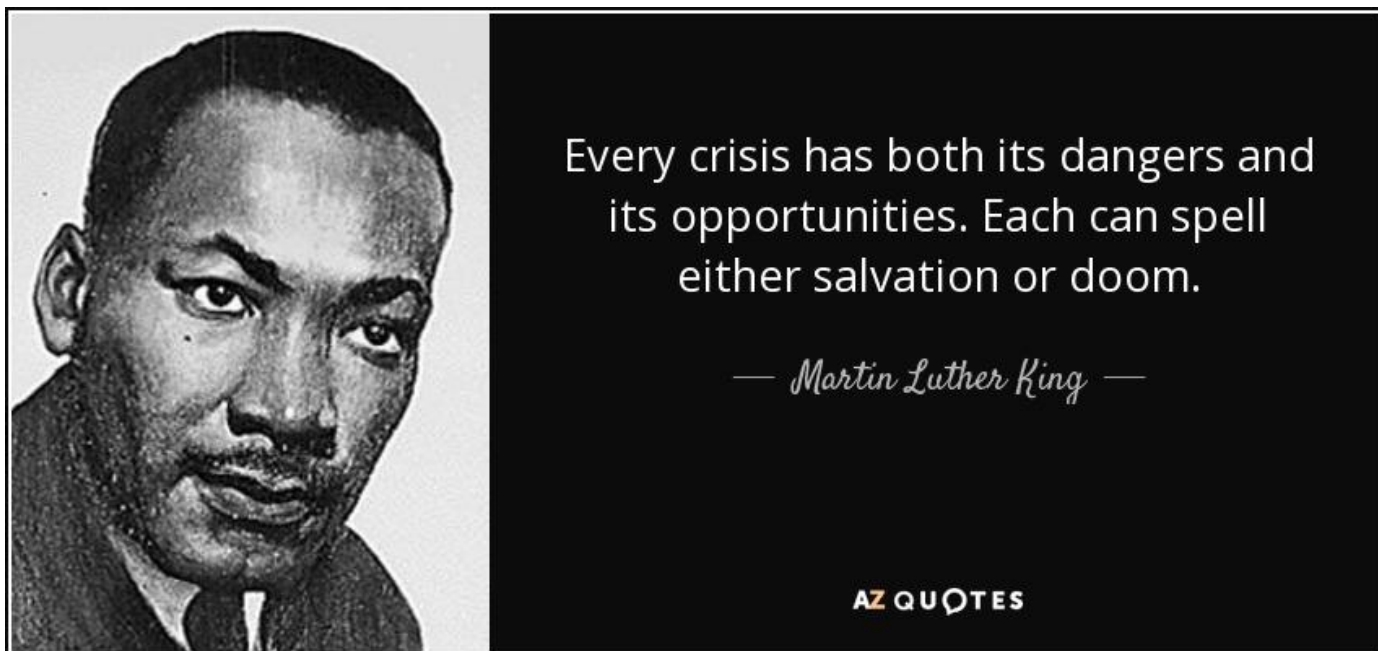
Source: NREL





# Recommendations

- One of the conclusions of the World Economic Forum in Davos on how to solve the energy crisis in the long term is that we should not look for a way to replace the source of fossil fuels and the way of supplying them, but to accelerate the transition. Macedonia and other countries from the Western Balkans have a historical opportunity to change many things, and this crisis should be used to the maximum, and the past should not be repeated.
- The solutions that will be adopted now should not lead to a new energy crisis for these countries in the near future.



Quotes



# Thank You

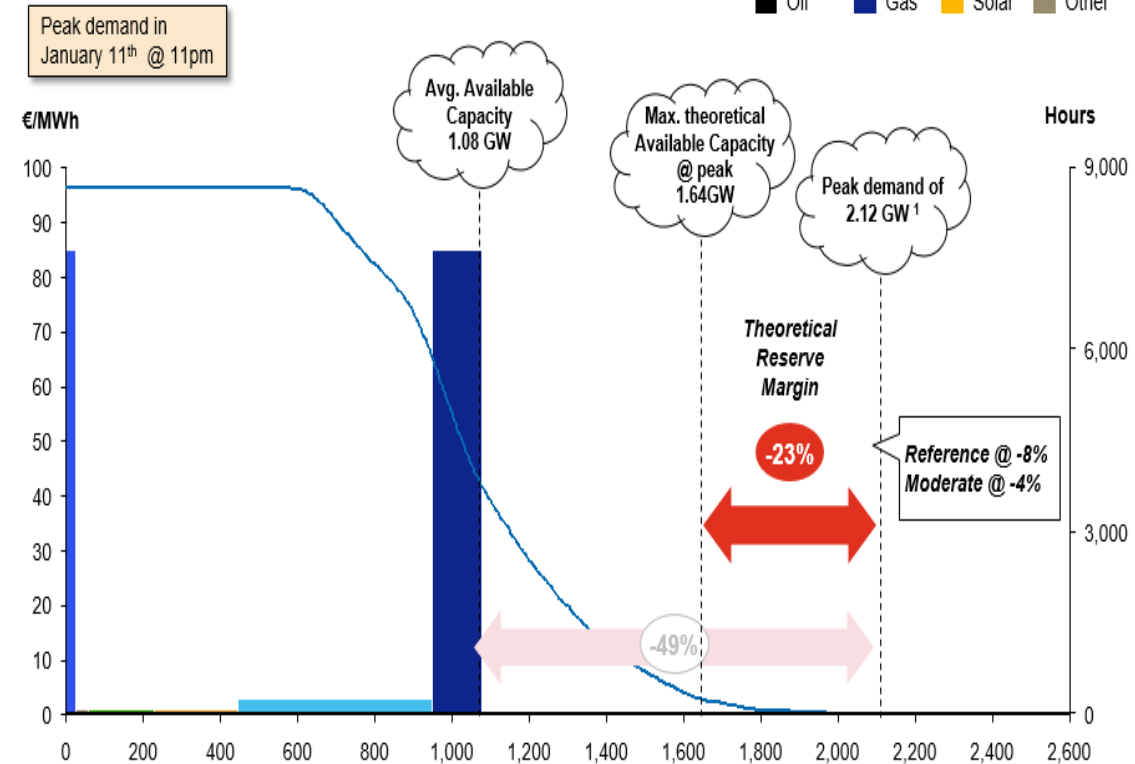
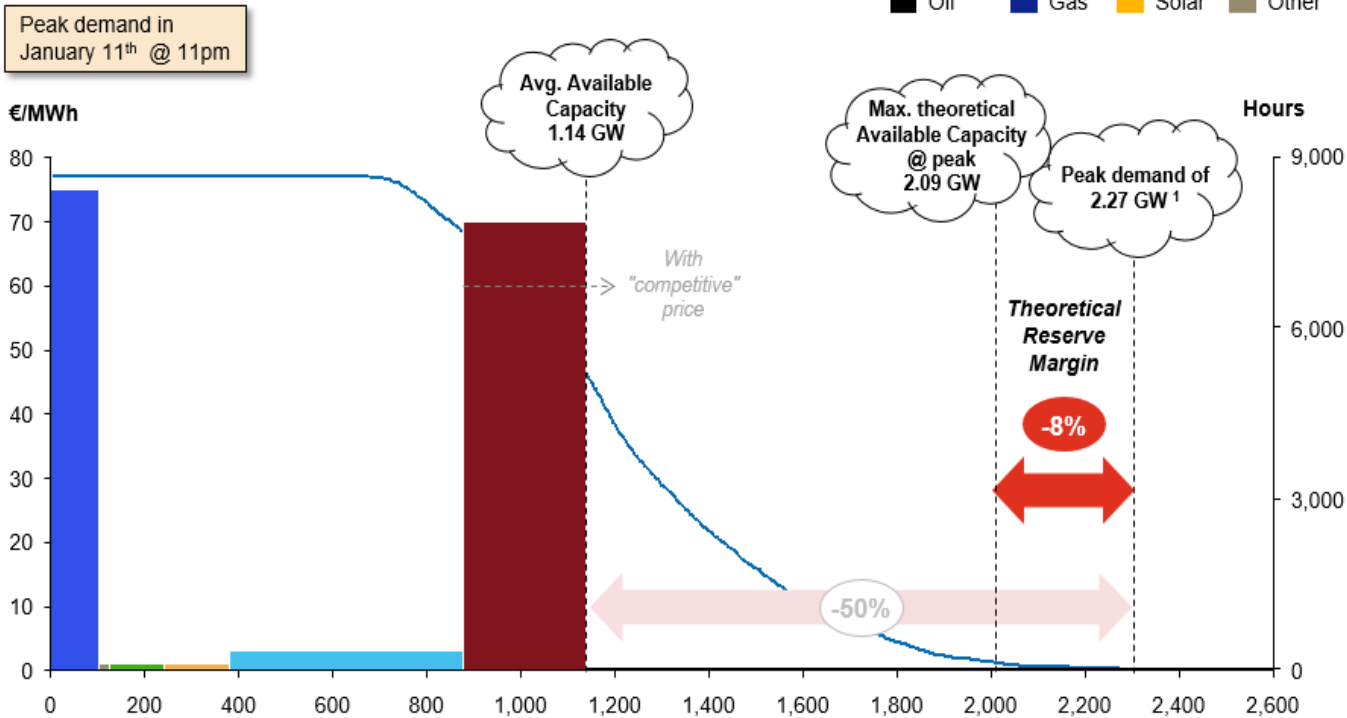
email:[dedinec@manu.edu.mk](mailto:dedinec@manu.edu.mk)



# Solution

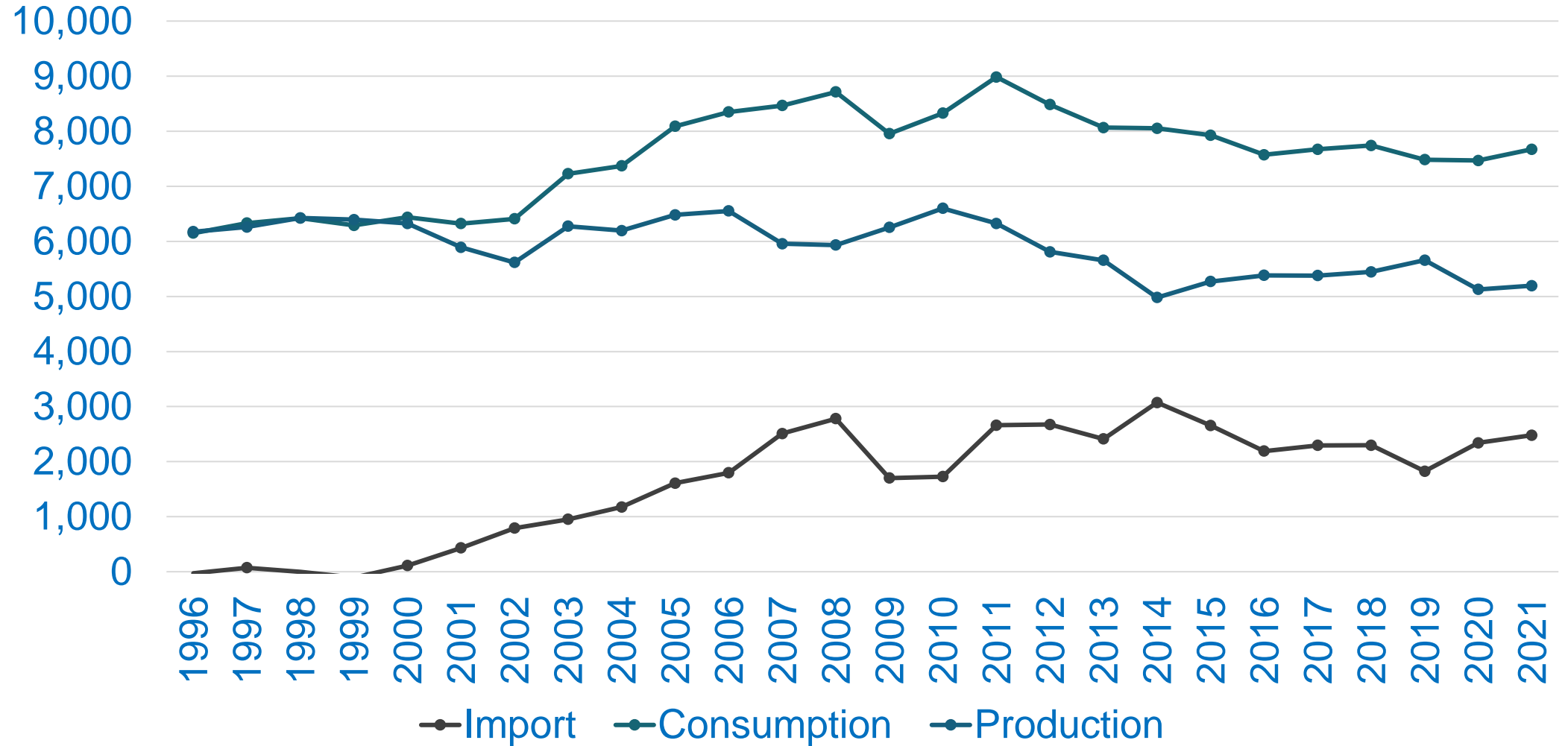
- Technical, security of supply, flexibility of the system
- Macedonia merit order curve in 2040

■ Lignite ■ CHP ■ Hydro ■ Wind  
■ Oil ■ Gas ■ Solar ■ Other

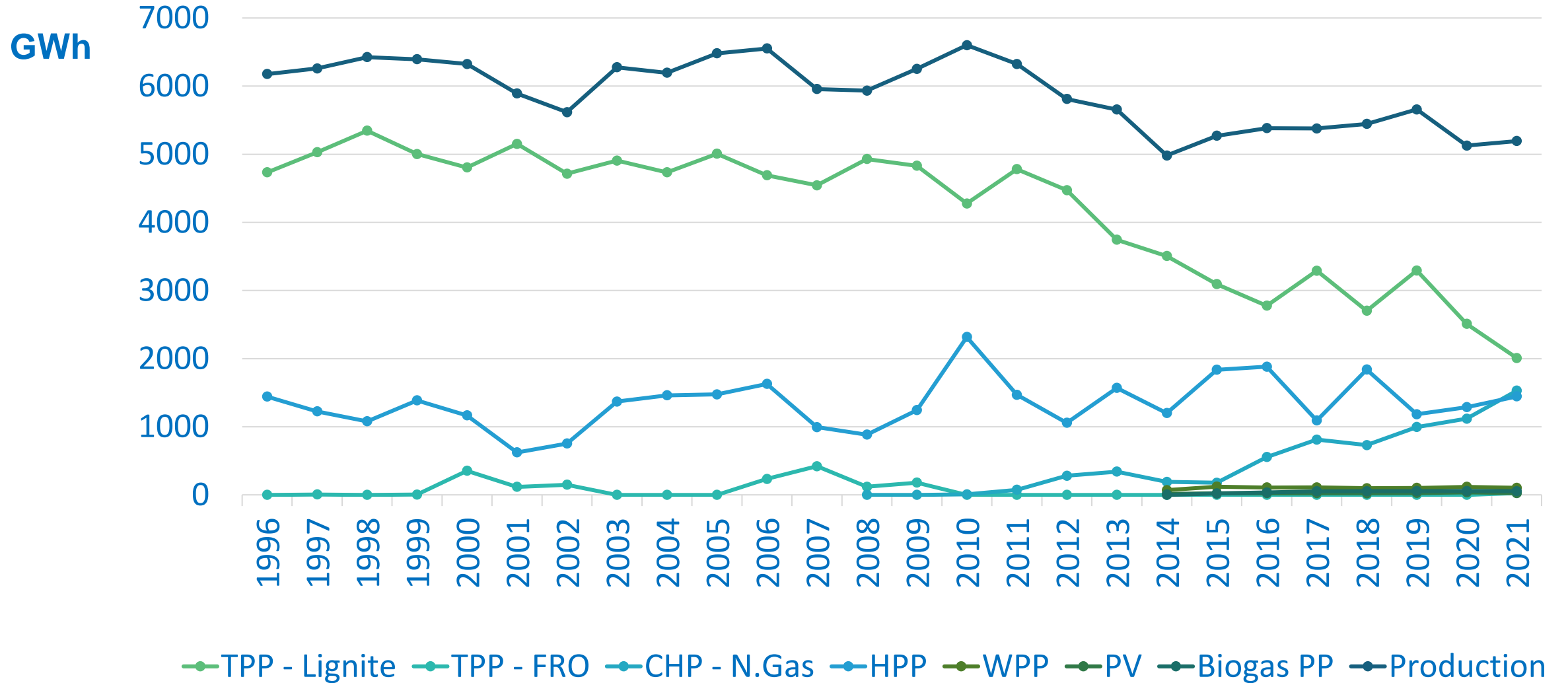


# Electricity

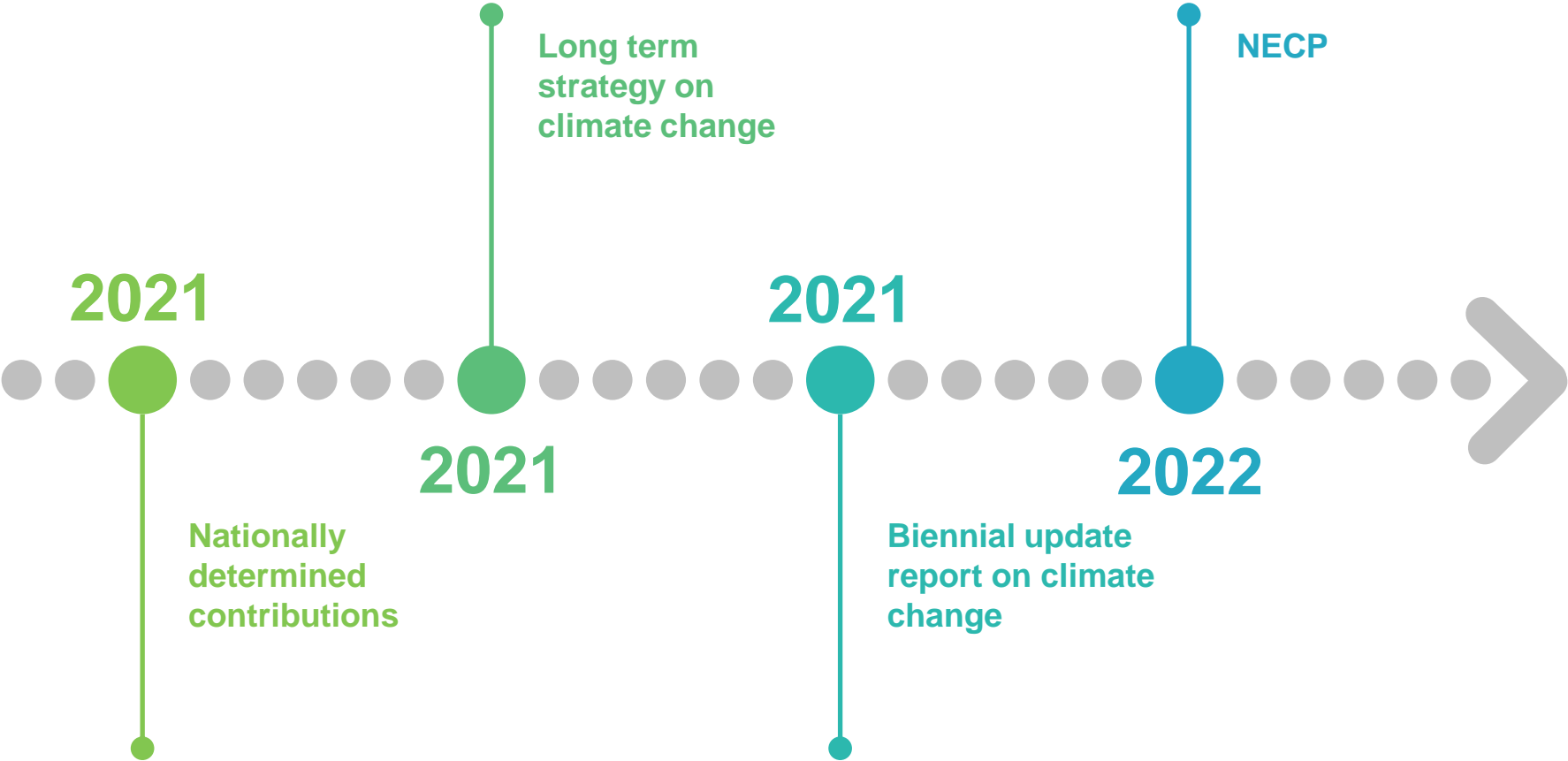
GWh



# Electricity production



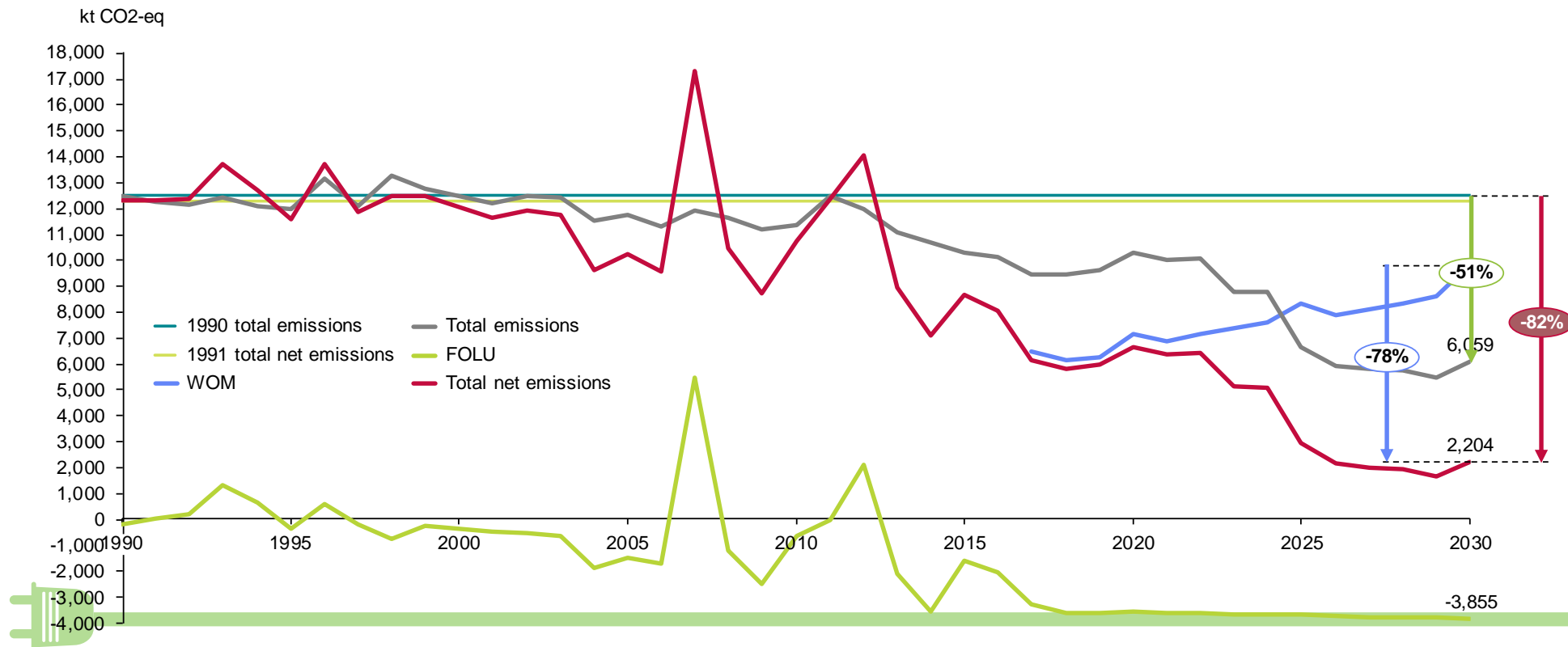
# Introduction-Documents adopted



# Introduction-Targets and objectives - Sectoral targets

The **targets** are expressed in relation to 1990, as a base year and are:

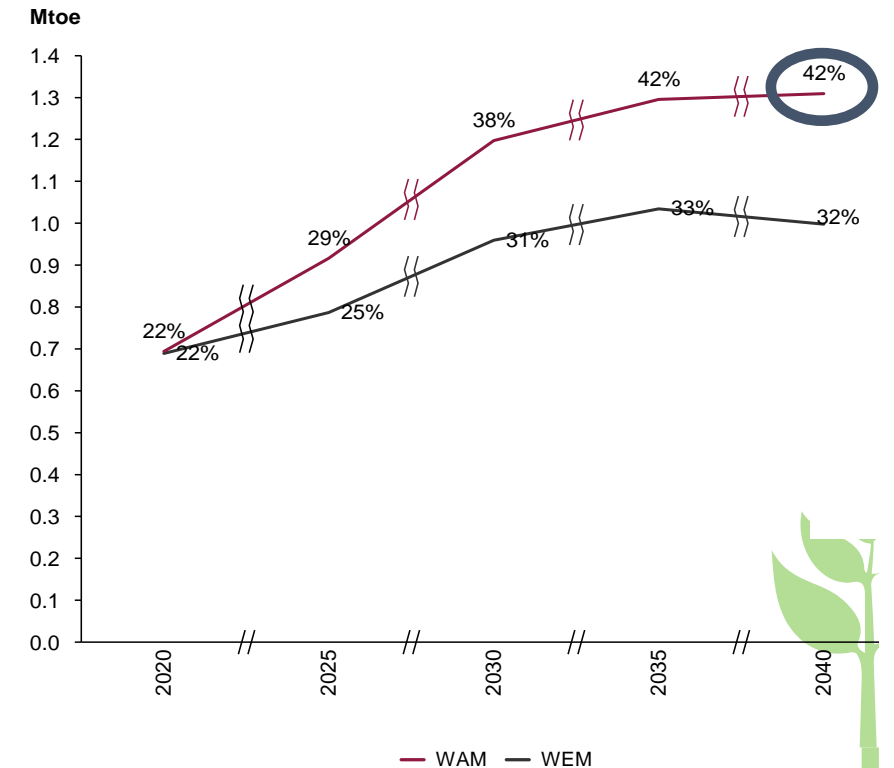
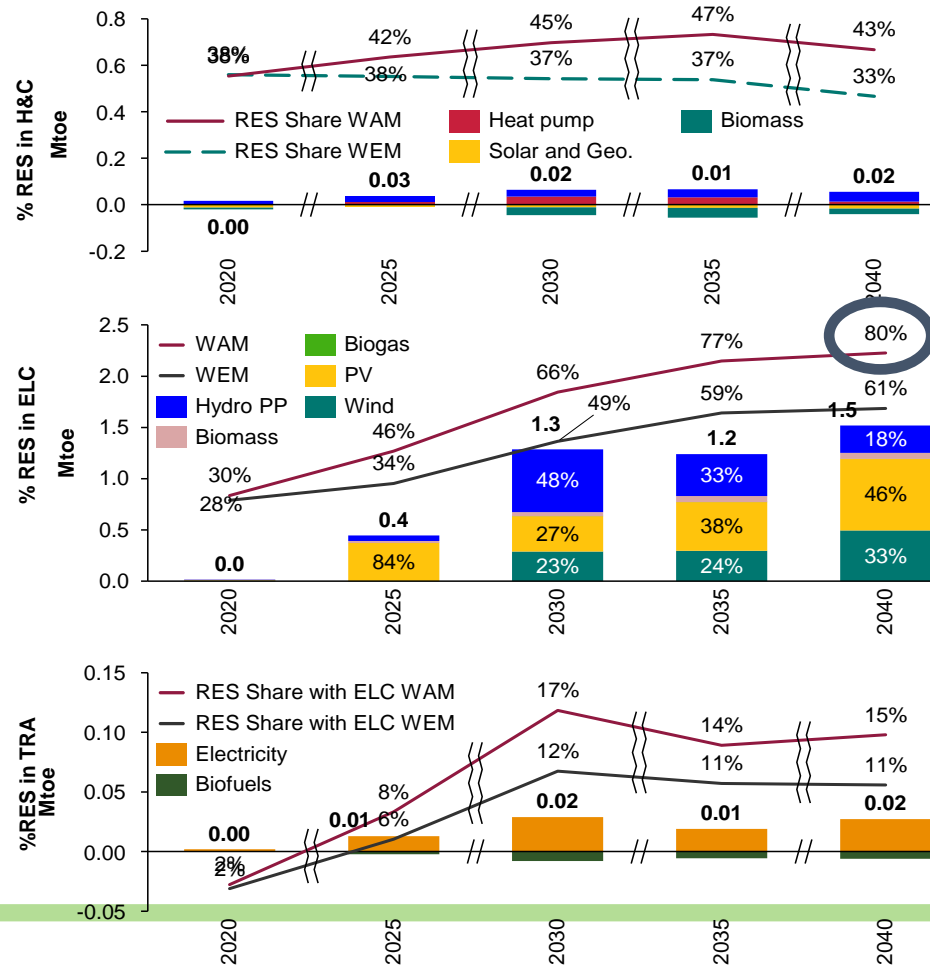
- **51% GHG emissions reduction**
- **82% net GHG emissions reduction**



# Introduction -Targets and objectives

Difference between WEM and WAM in indicative projections of **RES share in gross final energy consumption** and in different sectors (heating and cooling, electricity and transport) as well as per technology in each of these sectors

- Electrification of the heating and cooling sector



- Electrification of the transport sector

