



## How to align EU policy with the goals of the Paris Agreement?

Scenarios on global and EU decarbonisation pathways and resulting recommendations

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# Overview of EnerFuture scenarios



Ener-Blue

Ener-Green

Ener-Brown

## CLIMATE & ENERGY POLICIES

- **2030 INDCs targets achieved**
- **CO<sub>2</sub> emissions growth slow-down**
- **+3-4°C** temperature increase

- **Reinforcement** trend
- **INDCs** targets regularly reviewed upwards
- **+1.5-2°C** temperature increase

- **INDCs targets not reached**
- Soaring **CO<sub>2</sub> emissions**
- **+5-6°C** temperature increase

## ENERGY DEMAND

- **Increase** in developing countries
- Stable in OECD
- **Controlled** through INDCs

- **Global stabilization**
- Ambitious **energy efficiency policies**
- **Regular updates** of efficiency targets

- **Limited improvement** on energy intensity
- High growth in developing countries
- Growth in OECD too

## ENERGY SUPPLY & PRICES

- **Tensions** on available resources
- **Increasing energy prices**
- **Diversification** towards renewables

- Fossil fuel subsidies phase-out
- **Strong development of renewables**
- **Price increase** reflect policies and CO<sub>2</sub> constraints

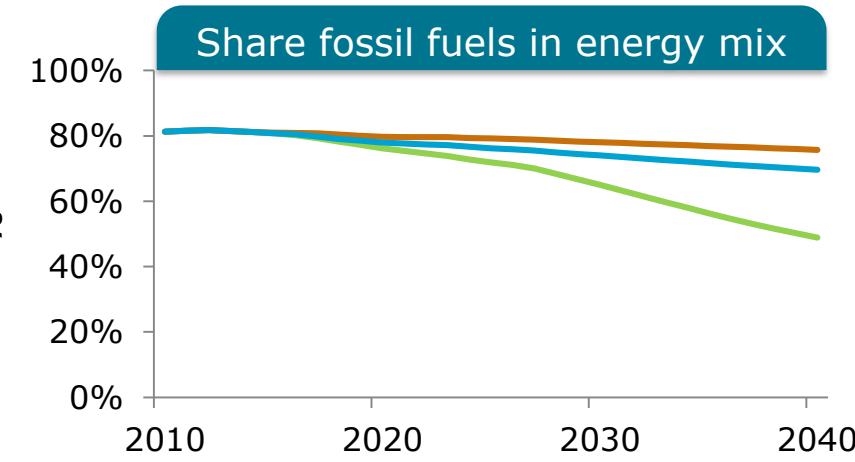
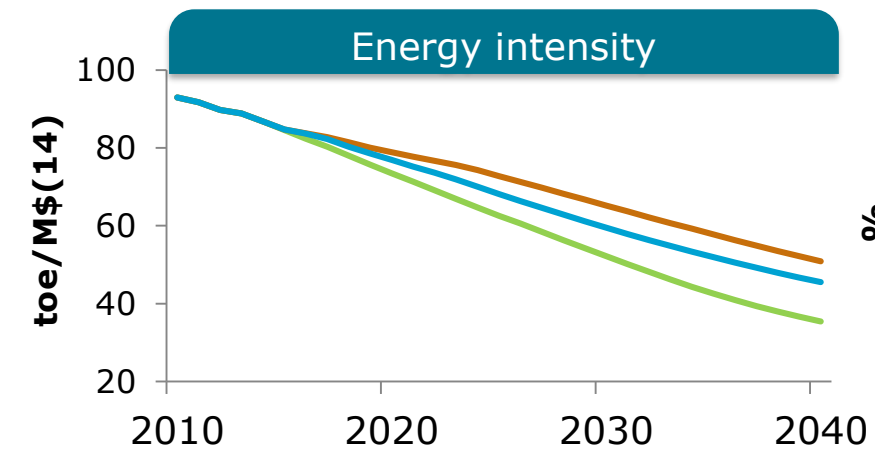
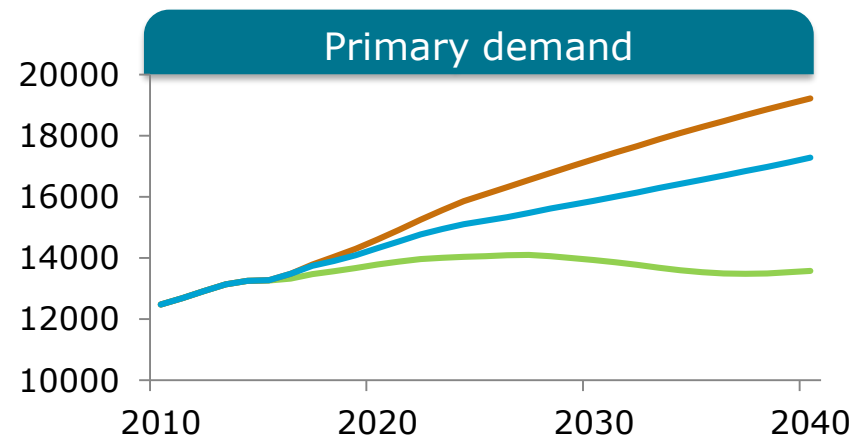
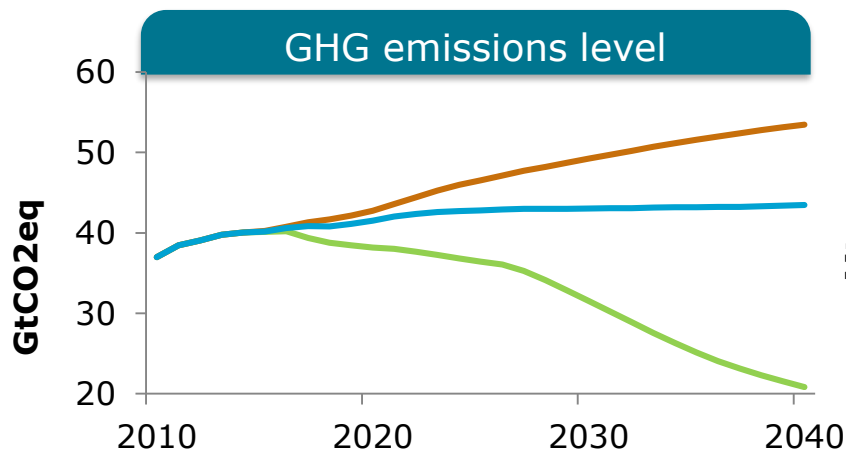
- **Fossil fuels** renaissance
- Lower **energy prices**
- Strong **fossil fuel technological improvement**
- Continued efforts on renewables

# Global decarbonisation pathways

# Key energy indicators by scenario



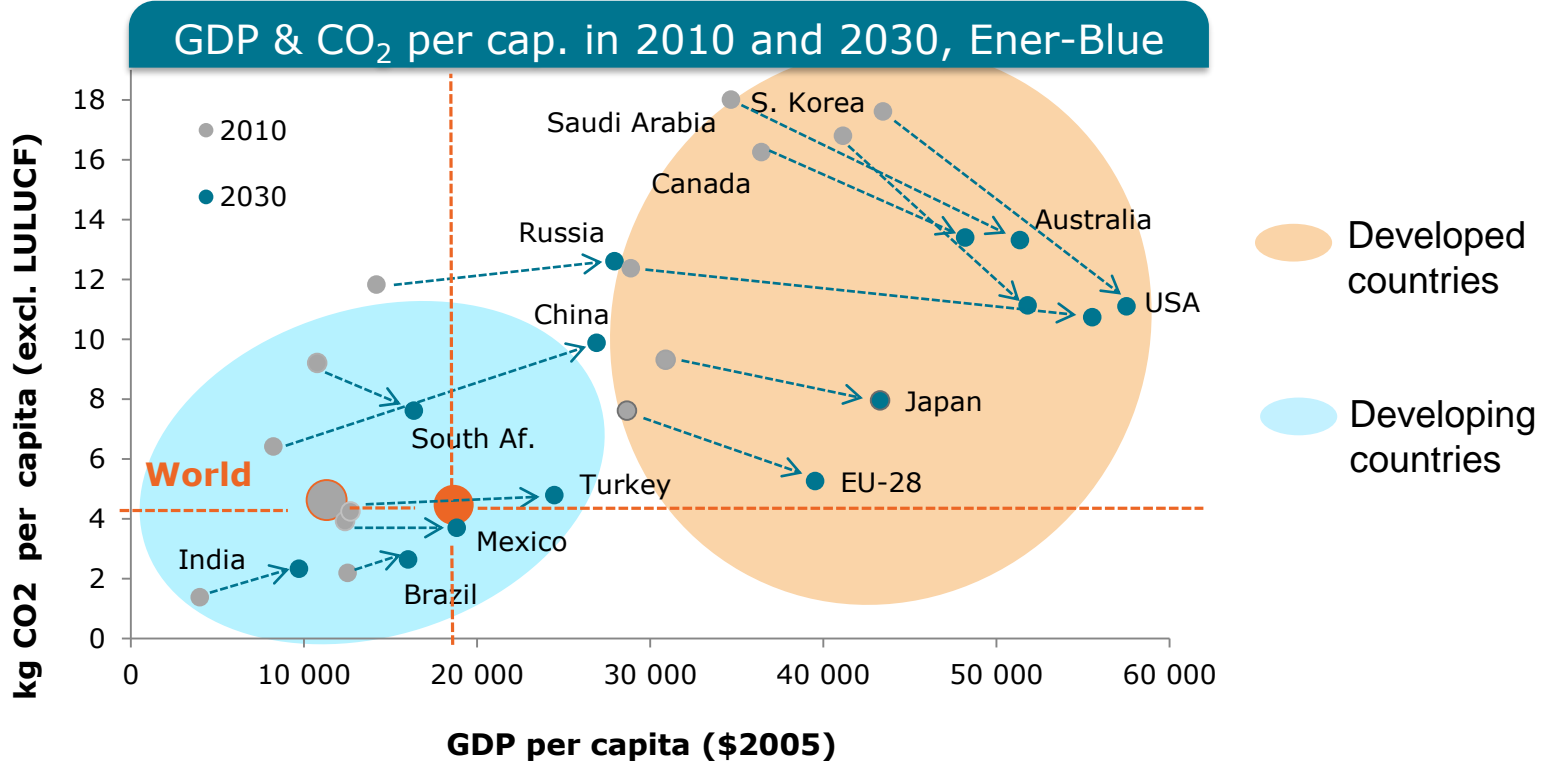
— Ener-Blue — Ener-Green — Ener-Brown



Source: EnerFuture



# INDCs lead to a growing decoupling between GHG emissions and GDP, mostly in OECD...

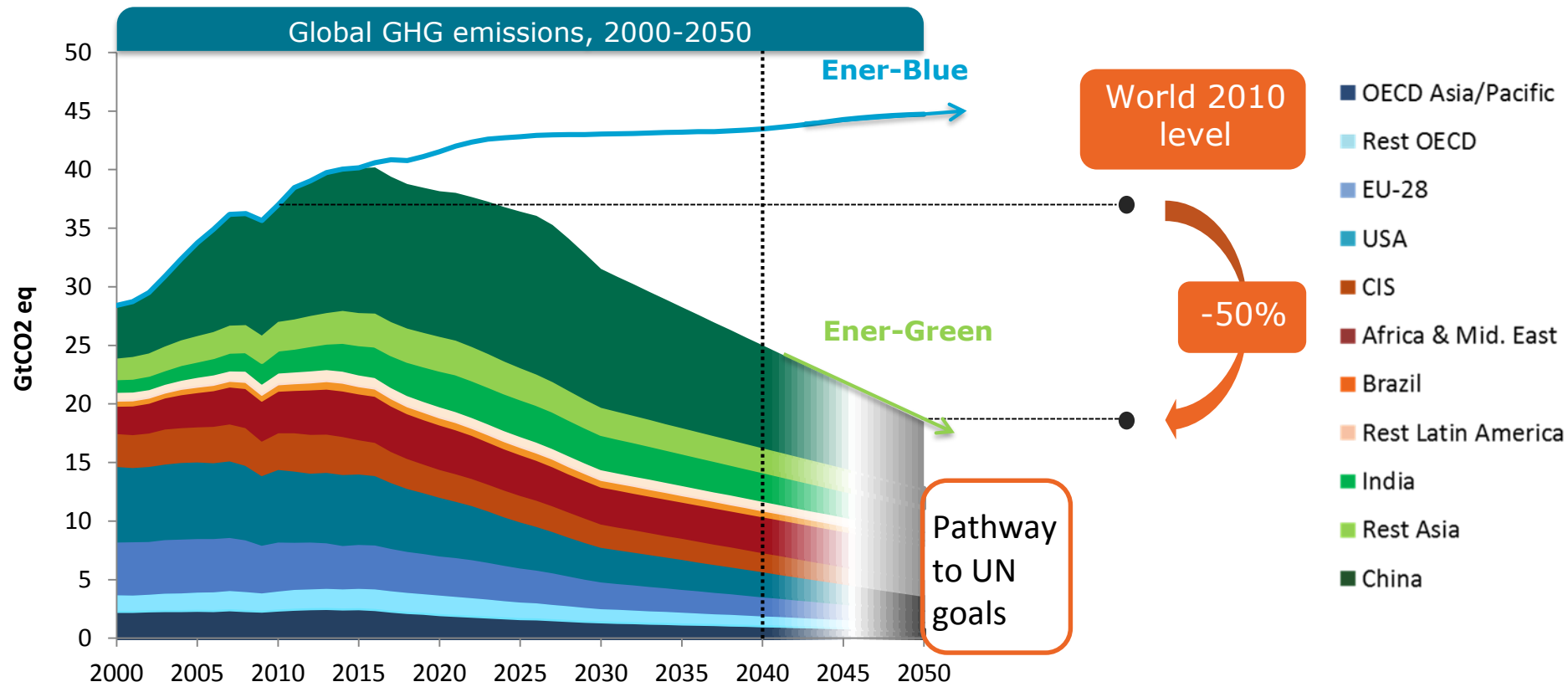


...however these improvements are not sufficient to cope with global climate challenges.

Source: EnerFuture, Ener-Blue scenario



# From INDCs to 2°C: a huge gap to close !

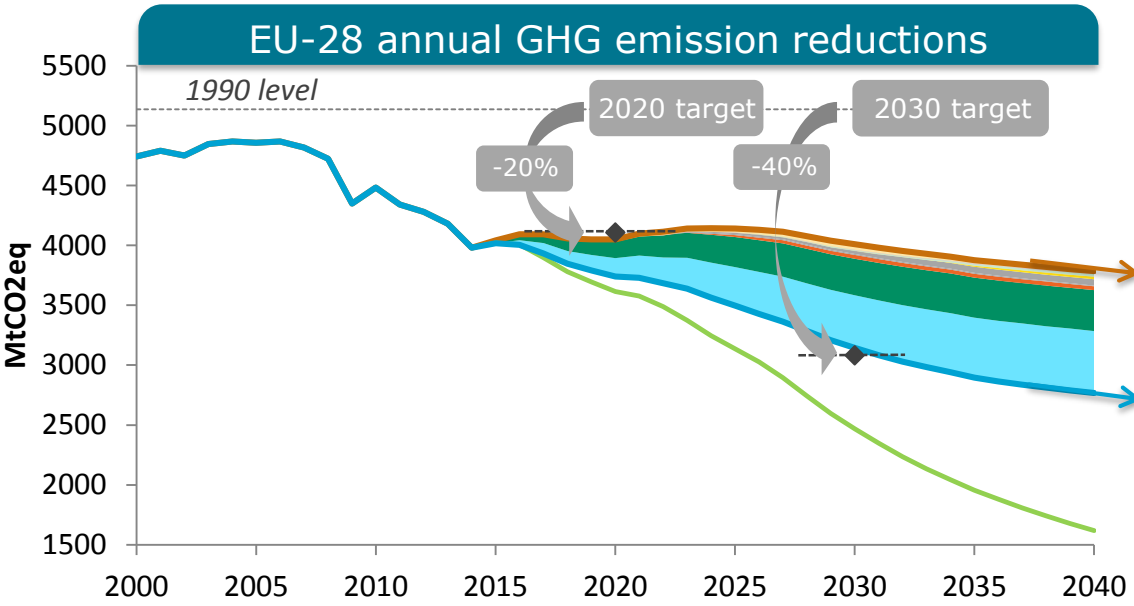


Source: EnerFuture, Ener-Blue & Ener-Green scenarios

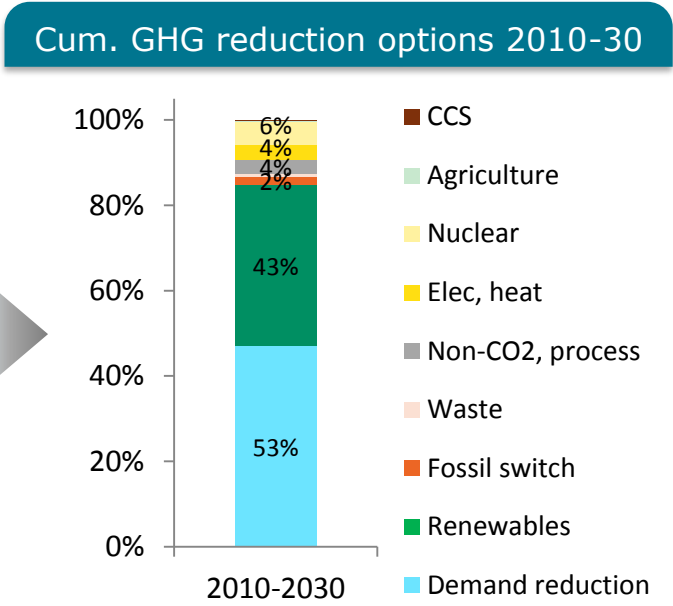
# Consequences for the European Union



# EU's 2030 target on emissions mainly reached via the deployment of renewables & efficiency



Source: EnerFuture



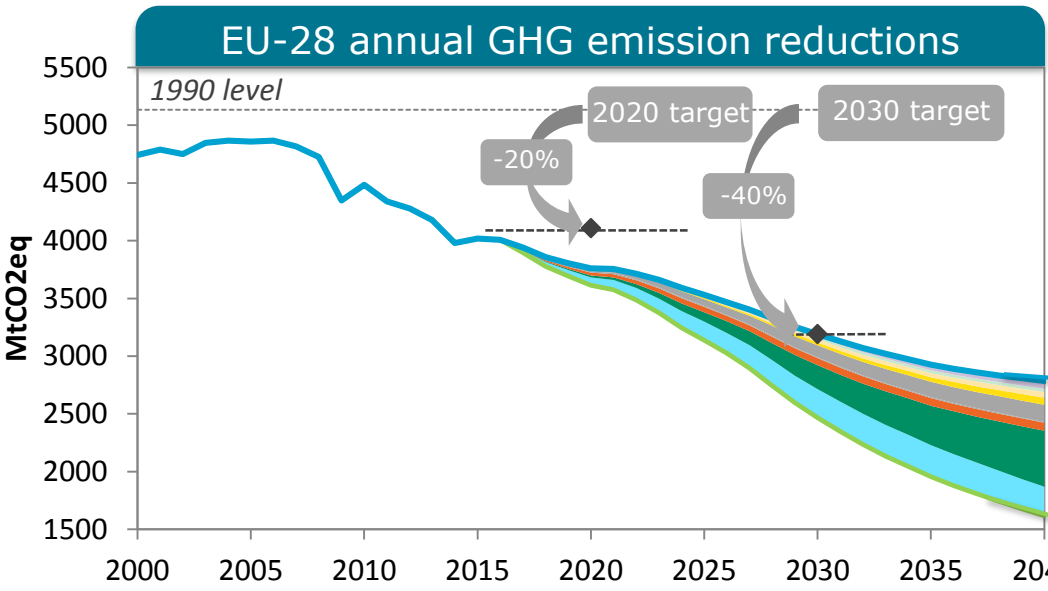
Source: EnerFuture, Ener-Blue and Ener-Brown scenarios

... with a decarbonisation principally achieved in the power and transport sectors.

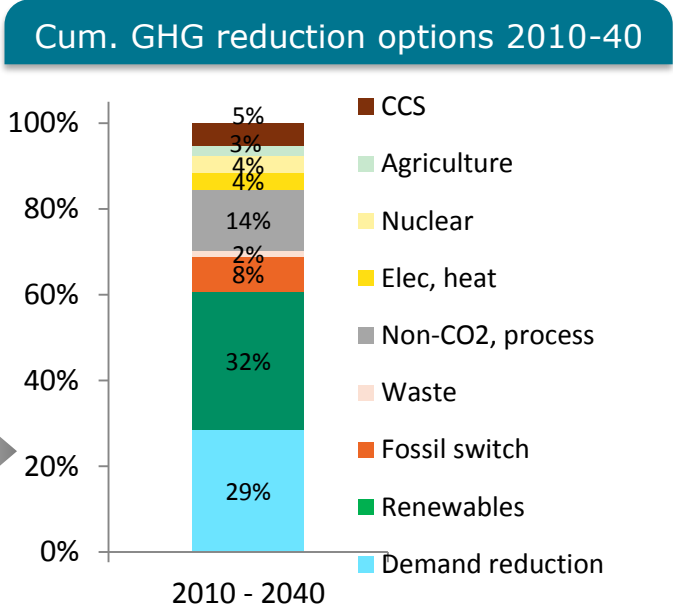




# Enabling the 2°C target will heavily depend on demand reduction and renewables...



Source: EnerFuture

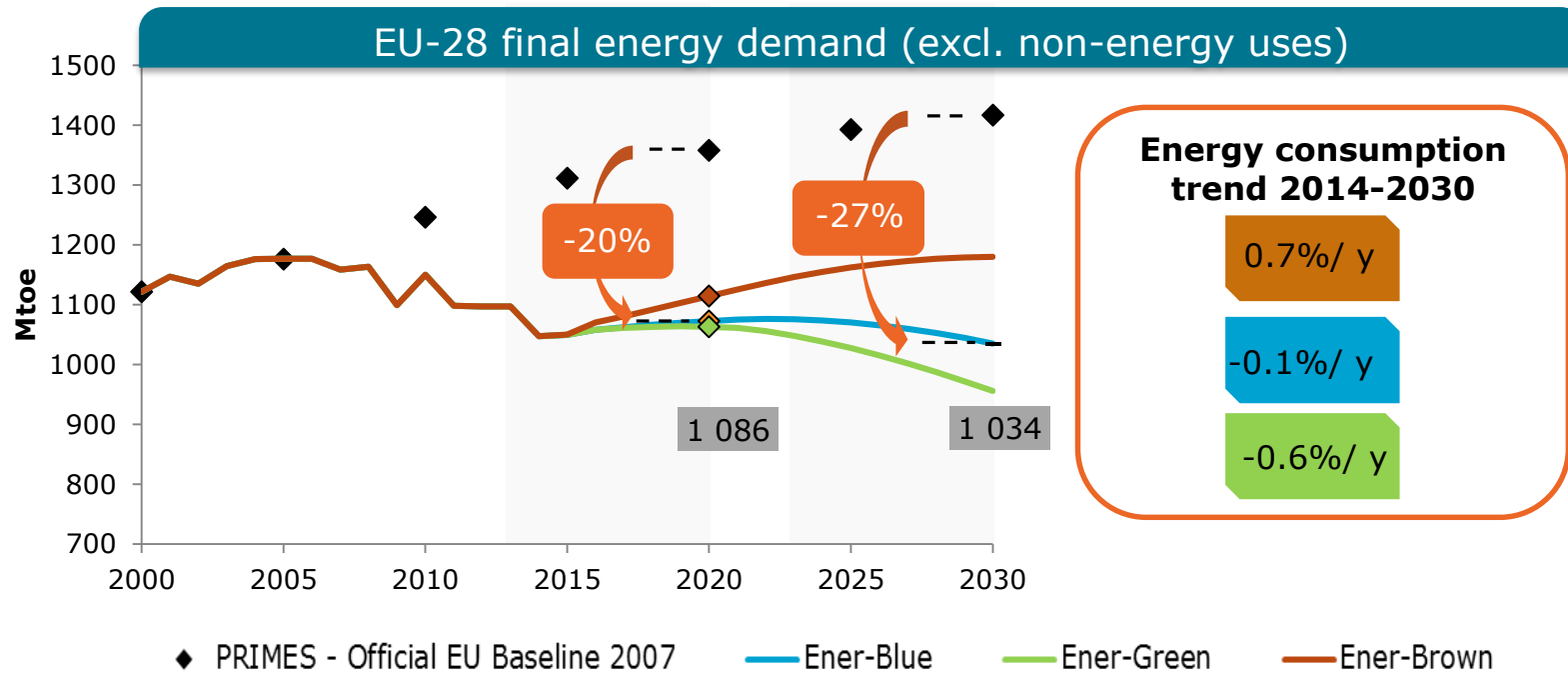


Source: EnerFuture, Ener-Blue and Ener-Green scenarios

... but options will also include fossil fuel switch (coal to gas) and industrial processes improvement.



# EU energy consumption objective: energy efficiency efforts should be intensified after 2020...

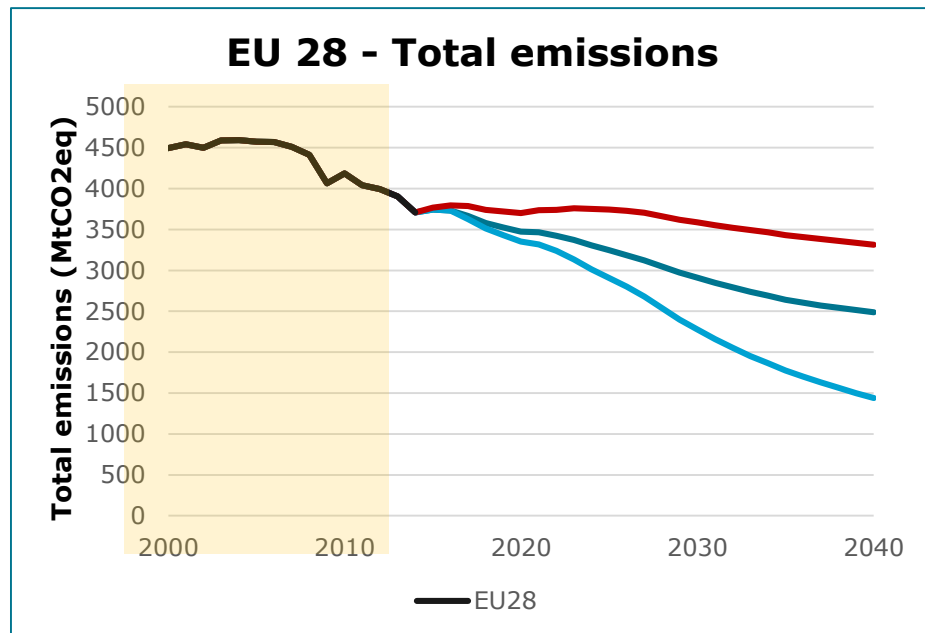
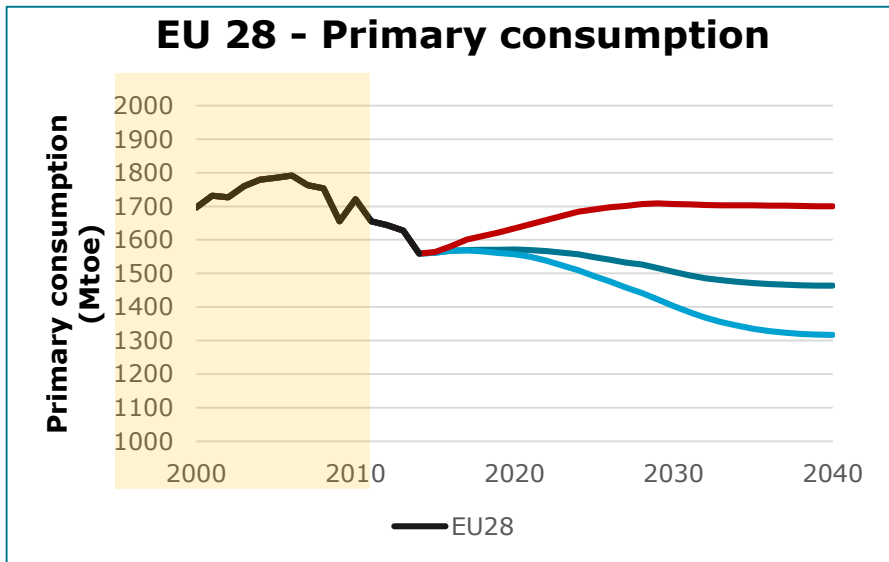
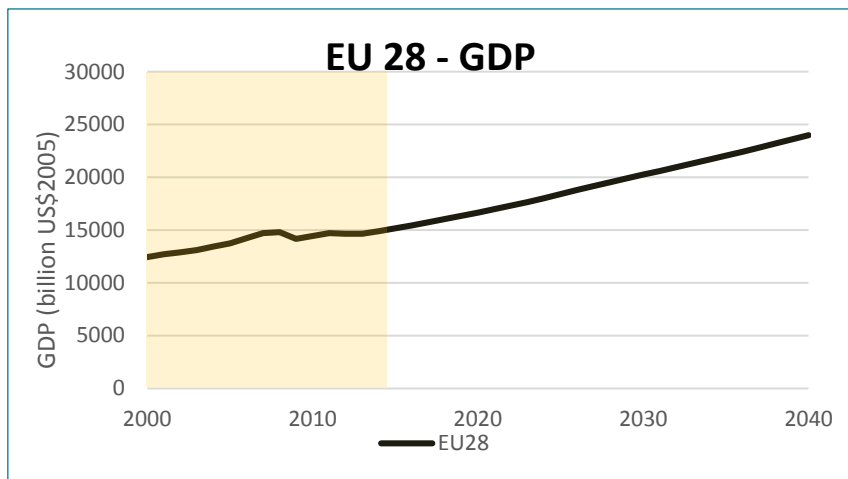


... with highest savings potentials coming from buildings.

Source: "Evaluating EU energy efficiency policies and future policy options up to 2020 and beyond", DG ENER, EnerFuture

# EU contribution to a 2° scenario requires a double breakthrough

- Reduction of energy intensity
- Decarbonisation of energy production



Source : Enerdata, scénarios EnerFuture

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# Conclusions and implications on EU policies

- The big gap between Ener-Blue (INDCs) and Ener-Green (2°) requires to set more ambitious CO<sub>2</sub> emissions objectives in order to accelerate the decarbonisation of the EU economies
- Decrease *energy intensity* (energy needed for 1 unit of GDP)
  - Define and implement ambitious Energy Efficiency objectives
  - Buildings sector as a key priority
- Decrease the *carbon intensity of energy production* (CO<sub>2</sub> emission per toe)
  - Power mix evolution: decrease fossil fuels and mostly coal %
  - Transportation
  - Real carbon price to change behaviours
- Part of EU additional contribution could be also in financing emissions reduction in other regions

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## About Enerdata:

Enerdata is an energy intelligence and consulting company established in 1991. Our experts will help you tackle key energy and climate issues and make sound strategic and business decisions.

We provide research, solutions, consulting and training to key energy players worldwide.

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Thank you for your attention!