

# LIFE Climate CAKE PL

The European Green Deal impact on the  
GHG's emission reduction target for 2030  
and on the EUA prices

The 2030 Climate Target Plan  
Impact Assessment and role of the EU ETS  
7th April 2020



Project LIFE16 GIC/PL/000031 is co-financed from EU funds from the LIFE program and from the funds of the National Fund for Environmental Protection and Water Management.



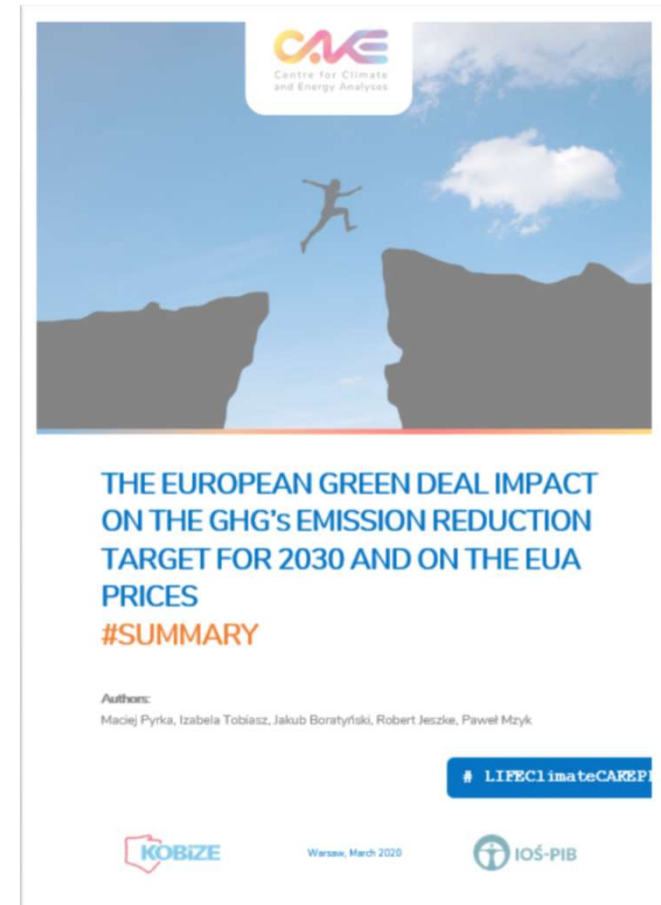
# PROBLEM DEFINITION

## ▶ 2030 climate & energy framework:

- ▶ Key target for 2030: at least **40%** cuts in GHG's emission (from 1990 levels)

## ▶ European Green Deal:

- ▶ Communication adopted on 12 December 2019,
- ▶ New reduction targets: **50-55%** (from 1990 levels)



# ANALYTICAL TOOLS

## ▶ CarbonPie model:

- ▶ *Carbon Policy Implementation Evaluation Tool,*
- ▶ simulation model of the EU ETS system.

## ▶ CREAM model – CGE model:

- ▶ *Carbon Regulation Emission Assessment Model,*
- ▶ simulation of increase in emission allowance prices,
- ▶ production changes in sectors.

## DATABASE

- ▶ **Data tables:** Input - Output (JRC EC, 2018),
- ▶ **Time horizon:** 2025-2030 (5-year step),
- ▶ **Regions:** 13 regions (UE + 12 rest of world),
- ▶ **Sectors:** 31 (of which 10 belong to the EU ETS),
- ▶ **Projection:** PRIMES model and POLES-JRC model (baseline scenario from Global Energy and Climate Outlook 2018, JRC 2018).

## MAIN ASSUMPTIONS

- ▶ The **EUA redistribution** mechanism will remain unchanged.
- ▶ Allowances are bought by market participants to meet **hedging needs** (demand for allowances is equal to supply).
- ▶ **MSR** - determined by the amount of surplus of allowances in the EU ETS (forecast surplus of allowances in the baseline scenario based on the emission projection from the Technical Note - Results of the EUCO3232.5).
- ▶ Reduction target in non-ETS sectors allocated between Member States based on their 2013 **GDP per capita**.

# SCENARIOS – REDUCTION EFFORTS BETWEEN THE EU ETS AND NON-ETS SECTORS

| Scenario        | GHG reduction targets in UE-28              |                                       |  |
|-----------------|---|---------------------------------------|--|
|                 | Reduction of GHG emissions in 2030 vs. 1990 | Target in the EU ETS in 2030 vs. 2005 | Target in the non-ETS in 2030 vs. 2005 |
| <b>Baseline</b> | 40%   | 43%                                   | 30%                                    |
| <b>GHG50</b>    | 50%   | 52%                                   | 42%                                    |
| <b>GHG55</b>    | 55%   | 57%                                   | 48%                                    |

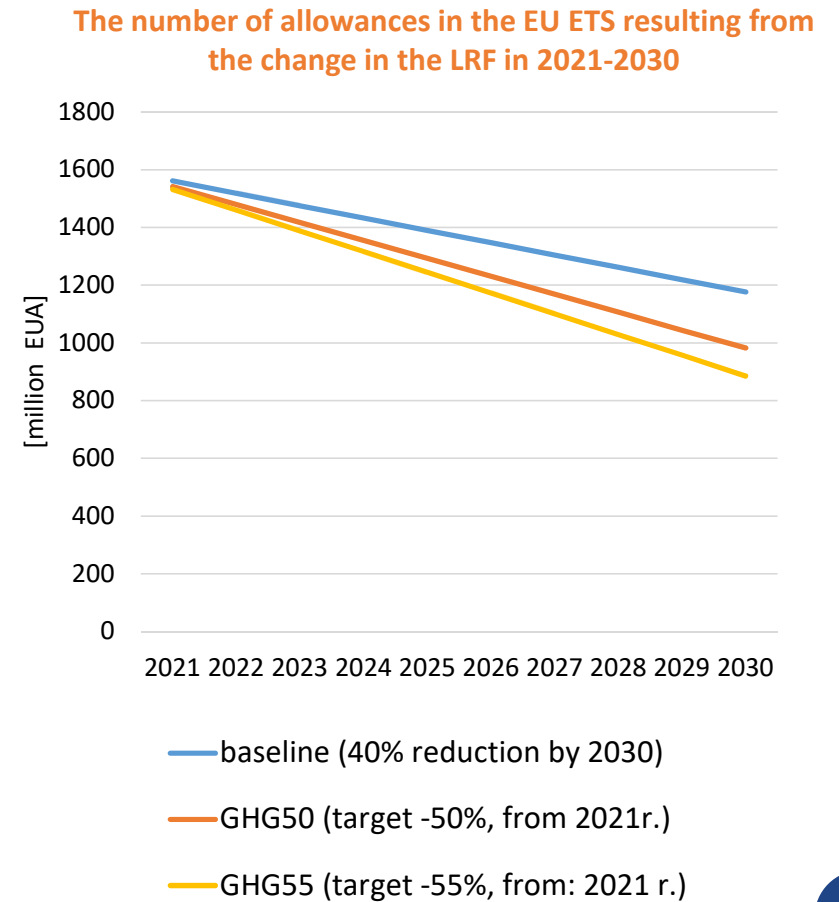
Source: CAKE/KOBiZE

# EU ETS

# SCENARIOS IN EU ETS

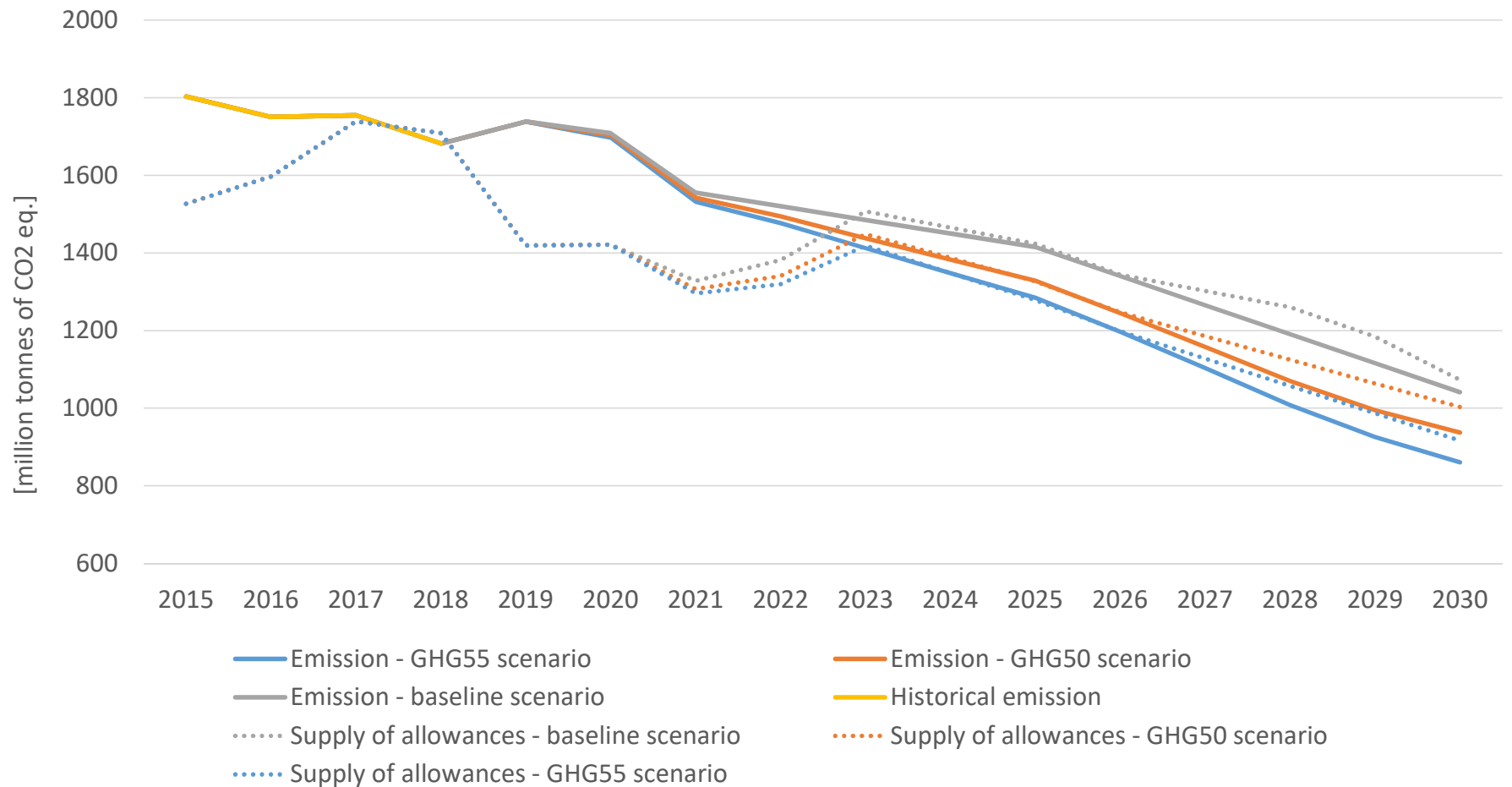
| Scenarios                              | LRF* (2021-2030) | Annual EUA reduction (2021-2030) in the EU ETS [in million] |
|--|------------------|---|
| <b>Baseline</b><br><i>(EU ETS 43%)</i> | 2,20%            | 42,71   |
| <b>GHG50</b><br><i>(EU ETS 52%)</i>    | 3,20%            | 62,13   |
| <b>GHG55</b><br><i>(EU ETS 57%)</i>    | 3,70%            | 71,83   |

\*LRF - linear reduction factor - determining the amount by which the total number of allowances in the EU ETS is reduced each year

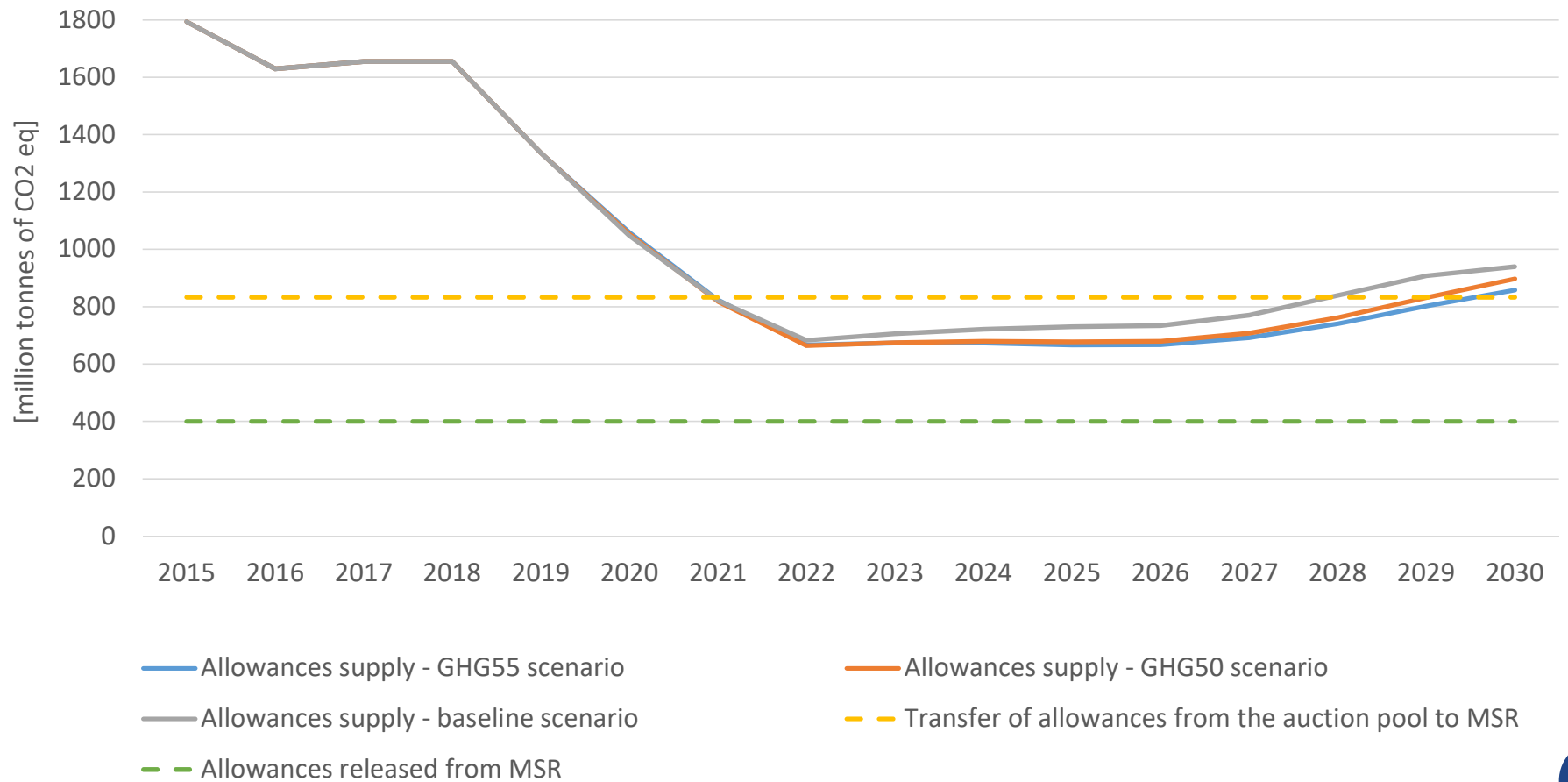




# PROJECTED EMISSIONS AND SUPPLY OF EUA BY 2030



# CHANGES IN AGGREGATED SURPLUS OF ALLOWANCES IN EU ETS AND MSR UNTIL 2030



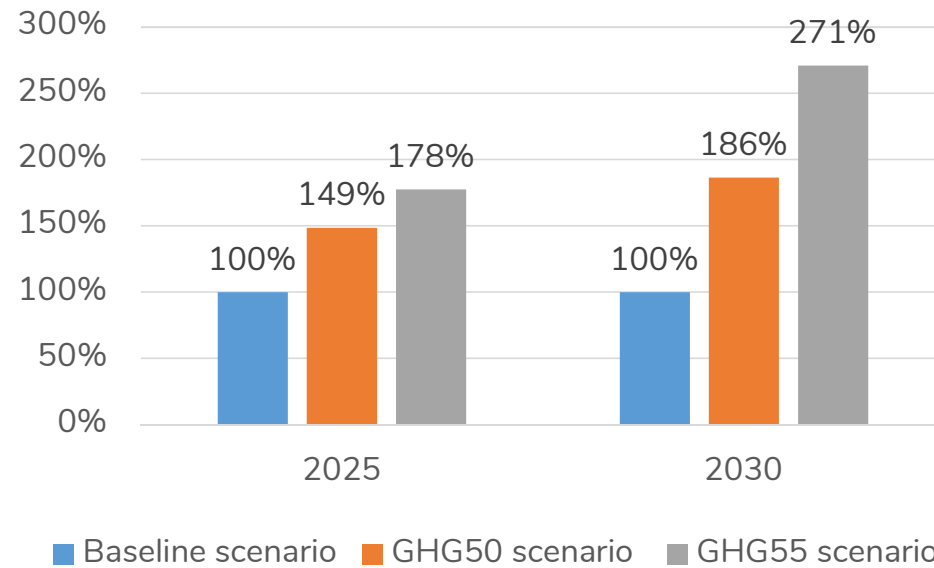
# CHANGE IN GHG's EMISSION IN RELATION TO THE BASELINE SCENARIO IN THE EU ETS [IN MT EQ. CO<sub>2</sub>]

|                   | Emission in 2025 | <i>Emission in 2025 vs. emission in baseline scenario</i> | Emission in 2030 | <i>Emission in 2030 vs. emission in baseline scenario</i> |
|-------------------|------------------|---|------------------|---|
| Baseline scenario | 1 415            | <i>100%</i>   | 1041             | <i>100%</i>   |
| GHG50 scenario    | 1 329            | <i>94%</i>  | 937              | <i>90%</i>  |
| GHG55 scenario    | 1 285            | <i>91%</i>  | 861              | <i>83%</i>  |

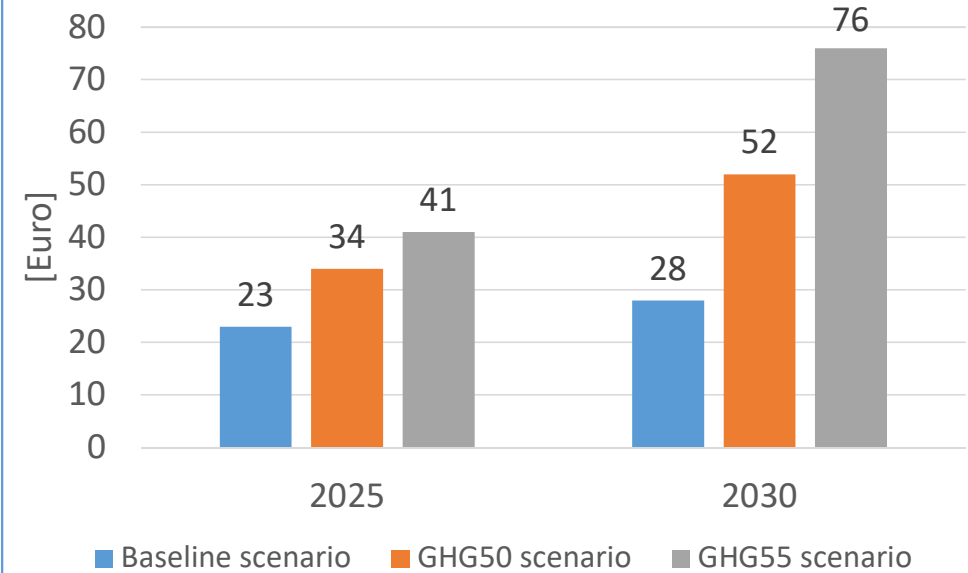
In 2018, emissions in the EU ETS are amounted to 1 553 million tonnes of CO<sub>2</sub> eq. (without UK)

# EUA PRICES IN THE 2030 PERSPECTIVE

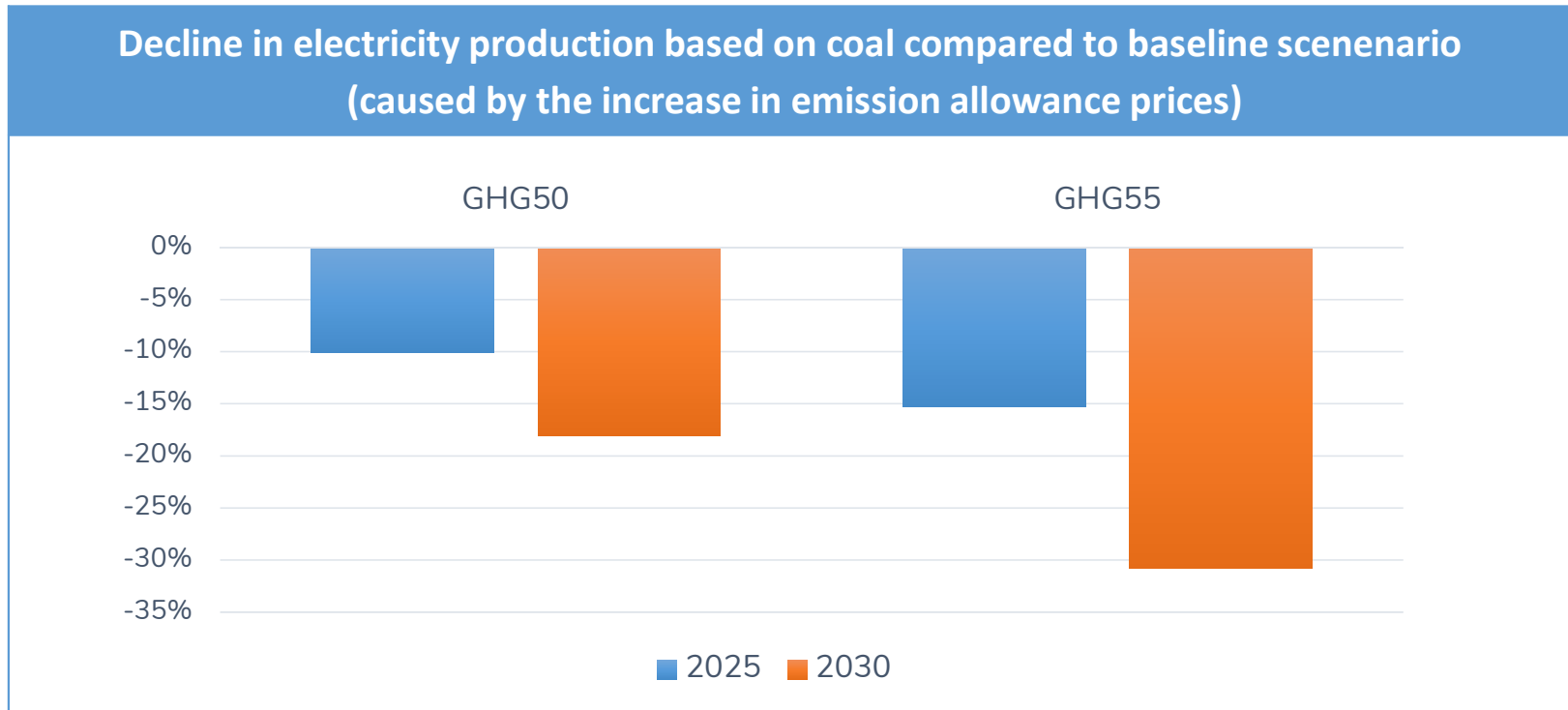
% price changes



Absolute price changes



# COAL WITHDRAWAL IN THE ENERGY GENERATION SECTOR

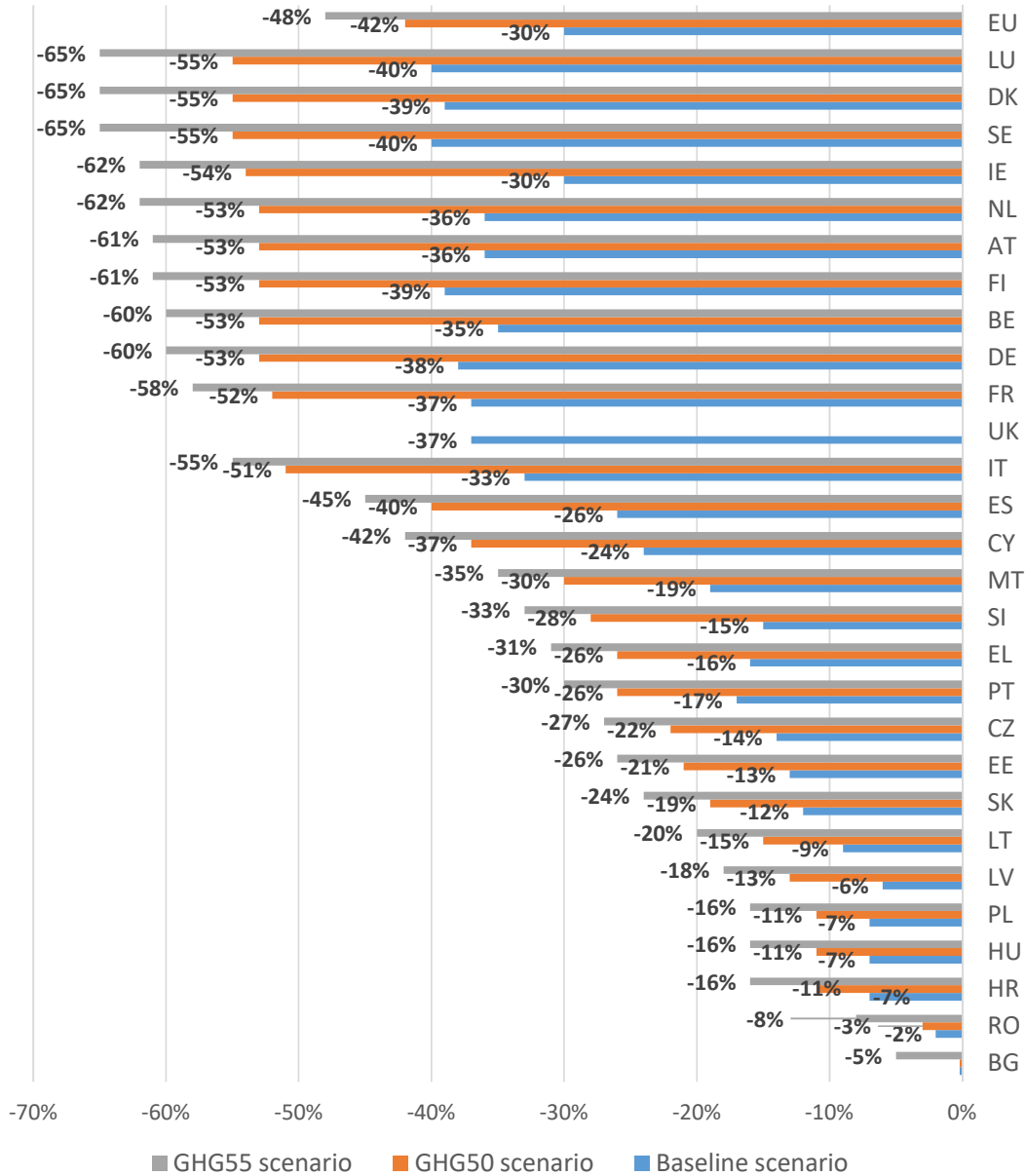


# NON-ETS

# SCENARIOS

| Scenarios                               | Range of reduction target for Member States |
|---|---|
| <b>Baseline</b><br><i>(non-ETS 30%)</i> | 0% - 40%                                    |
| <b>GHG50</b><br><i>(non-ETS 42%)</i>    | 0% - 55%                                    |
| <b>GHG55</b><br><i>(non-ETS 48%)</i>    | 5% - 65%                                    |

Source: CAKE/KOBiZE

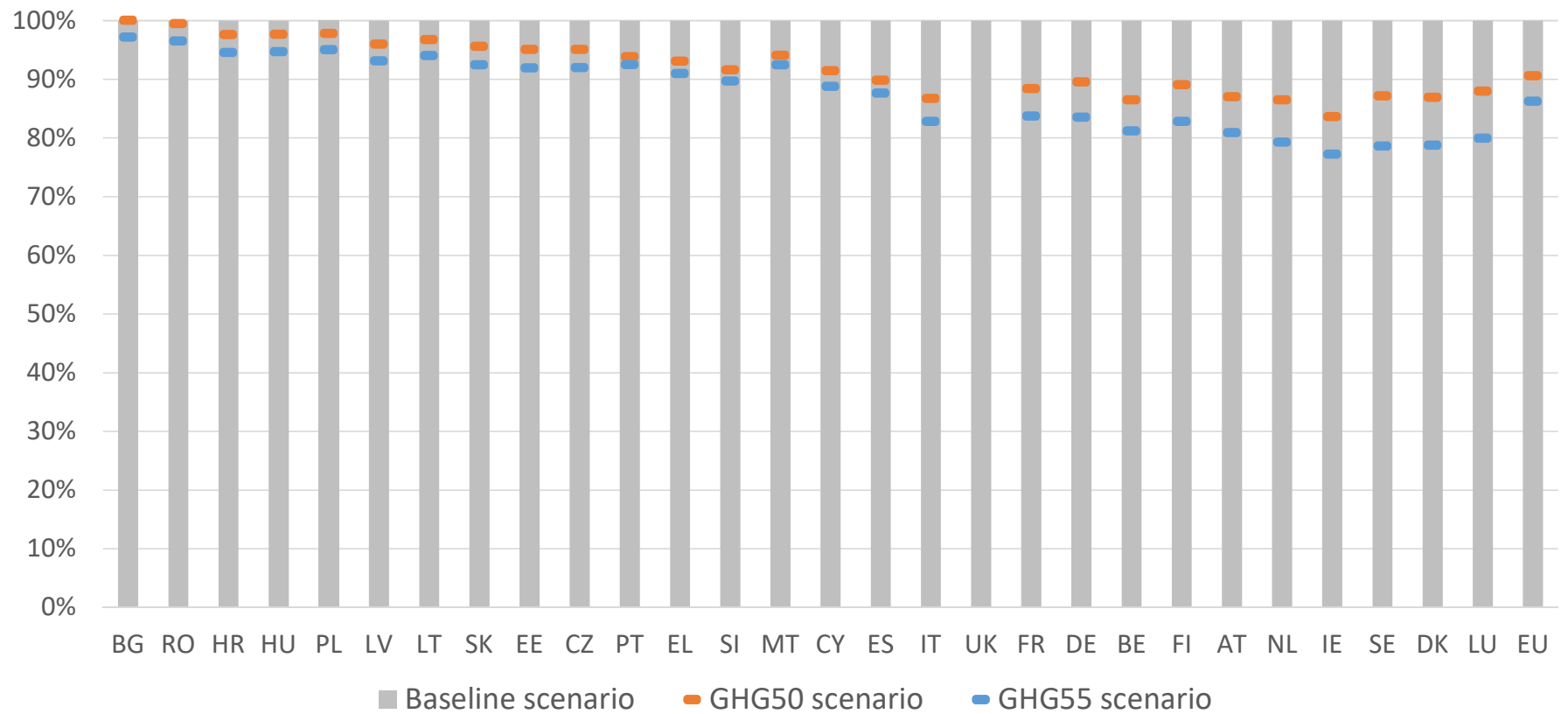


## COMPARISON OF REDUCTION TARGETS IN THE NON-ETS SECTORS FOR 2030, ACCORDING TO GDP PER CAPITA

Source: CAKE/KOBiZE



# EMISSION LIMITS FOR GHG50 AND GHG55 SCENARIOS IN RELATION TO BASELINE IN NON-ETS SECTORS



## CONCLUSIONS

- ▶ Faster withdrawal of fossil fuels up to **30% in 2030**,
- ▶ Price of allowances will rise up to **76 euro/EUA in 2030** – increases the risk of carbon leakage,
- ▶ Reduction the number of allowances to zero before 2050:

| Scenarios       | LRF  | Annual reduction of allowances in the EU ETS | Exhausting allowances in the EU ETS |
|-----------------|------|--|-------------------------------------|
| <b>Baseline</b> | 2,2% | 42 M   | 2056                                |
| <b>GHG50</b>    | 3,2% | 62 M   | 2045                                |
| <b>GHG55</b>    | 3,7% | 72 M   | 2042                                |

- ▶ Sharper decrease in non-ETS for Poland from + 14% in 2020 to:
  - ▶ current reduction target in baseline scenario **-7%** in 2030,
  - ▶ GHG50 **-11%** in 2030,
  - ▶ GHG55 **-16%** in 2030.



# Thank you!

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