

Region-Specific Emission Targets

How to define region-specific emission targets, either as year-based targets or emission budgets:

Setting Emission Targets: `cm_emiMktTarget`

- require `regipol` to be set to `regiCarbonPrice`

Options

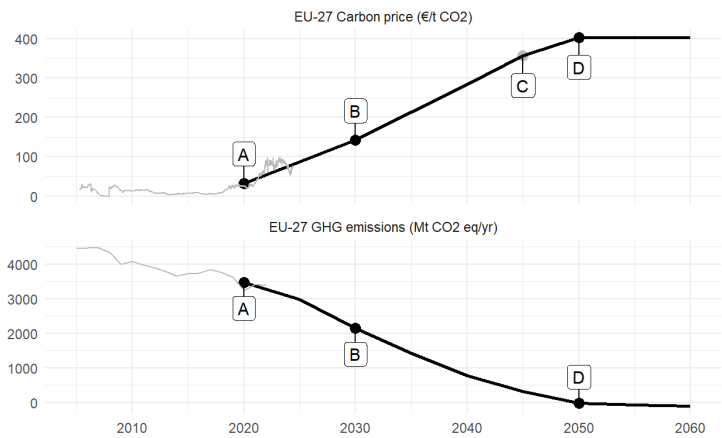
| Option | Description |
|---|--|
| <code>off</code> | No regional emission target |
| <code>scenario_tag</code> | Targets defined in module 47 declarations under the scenario tag |
| <code>2020.2050.EU27_regi.all.budget.netGHG_noBunkers 72</code> | Explicitly defined target configuration |

CO2 Tax Curve Shape

| Segment | Description |
|-------------------|--|
| Pre-target years | Linear increase from the starting year (<code>initial_year</code>) to the target year (<code>target_year</code>) |
| Post-target years | Annual increase based on the <code>cm_postTargetIncrease</code> value (in EUR per tCO2) |

EU-27 target example (Germany and EU-27)

- A. fixed historical value
- B. EU-27 57% reduction: `2020.2030.EU27_regi.all.year.netGHG_LULUCFGrassi_intraRegBunker 2.191` and DEU 65% reduction: `2020.2030.DEU.all.year.netGHG_noLULUCF_noBunkers 0.42`
- C. effect of DEU 2045 net-neutral target on EU-27 aggregated price: `2035.2045.DEU.all.year.netGHG_LULUCFGrassi 0.0001`
- D. EU-27 net-neutral 2050 target: `2020.2050.EU27.all.year.netGHG_LULUCFGrassi 0.0001`



Emission Target Definition

`cm_emiMktTarget` follows this format:

`initial_year . target_year . region . group_of_sectors . type_of_target . emissions_type value`

Configuration Parameters

| Parameter | Set | Values | Description |
|-------------------------------|-----------------------------|---|---|
| <code>initial_year</code> | <code>ttot</code> | year with four digits | Year when price increase starts and budget calculation begins |
| <code>target_year</code> | <code>ttot</code> | year with four digits | Year when the emission target or budget is achieved |
| <code>region</code> | <code>ext_reg</code> | ISO3 code or REMIND region code | Region where the target applies |
| <code>group_of_sectors</code> | <code>emiMktExt</code> | <code>all</code> , <code>ETS</code> , <code>ESR</code> , <code>other</code> | Targeted emission markets: all emissions, ETS market, Effort Sharing market, or other markets |
| <code>type_of_target</code> | <code>target_type_47</code> | <code>budget</code> , <code>year</code> | Emission target type: a cumulative budget or specific year-based reduction |
| <code>emissions_type</code> | <code>emi_type_47</code> | Various options (see below) | Specifies CO2 or GHG target type (net or gross, with/without LULUCF or bunker emissions) |
| <code>value</code> | | Gt CO2e | Emission target value |

Emission Type Options

- **CO2 Emission Targets:**
 - `netCO2` , `netCO2_noBunkers` , `netCO2_noLULUCF_noBunkers` , `netCO2_LULUCFGrassi` , `netCO2_LULUCFGrassi_noBunkers` , `netCO2_LULUCFGrassi_intraRegBunker`
 - `grossEnCO2_noBunkers`
- **GHG Emission Targets:**
 - `netGHG` , `netGHG_noBunkers` , `netGHG_noLULUCF_noBunkers` , `netGHG_LULUCFGrassi` , `netGHG_LULUCFGrassi_noBunkers` , `netGHG_LULUCFGrassi_intraRegBunker` , `netGHG_noLULUCF`

Examples

| Example | <code>cm_emiMktTarget</code> | Description |
|--|--|--|
| Single Regional Target | <code>2020.2050.EU27.all.year.netGHG_LULUCFGrassi 0.0001</code> | EU27 economy-wide (<code>all</code>) 2050 net-neutrality (<code>2050</code> , <code>year</code>) of GHG with bunkers emissions and LULUCF Grassi shift (<code>netGHG_LULUCFGrassi</code>) |
| Multi-period Target | <code>2020.2030.EU27_regi.all.year.netGHG_LULUCFGrassi_intraRegBunker 2.191</code> , <code>2020.2050.EU27.all.year.netGHG 0.0001</code> | EU27 economy-wide (<code>all</code>) GHG emission target including only intra-region bunkers (<code>netGHG_LULUCFGrassi_intraRegBunker</code>) for 2030, and including full bunkers (<code>netGHG</code>) for 2050 |
| Multi-period, Multi-regional Target | <code>2020.2030.EU27_regi.all.year.netGHG_LULUCFGrassi_intraRegBunker 2.191</code> , <code>2020.2030.DEU.all.year.netGHG_noLULUCF_noBunkers 0.42</code> , <code>(2035.2050.EU27_regi, 2035.2045.DEU, 2020.2050.UKI).all.year.netGHG_LULUCFGrassi 0.0001</code> | 2030, 2045, and 2050 emission targets for different regions: Germany (<code>DEU</code>) , EU27 , and UK (<code>UKI</code>) . |
| Enforcing Long-Term Targets (India Net-Zero Post-2070) | <code>2020.2070.IND.all.year.netCO2 0.001</code> , <code>2070.2090.IND.all.year.netCO2 0.001</code> | Ensures that India's net-zero target remains beyond 2070, preventing emissions from rebounding. |