

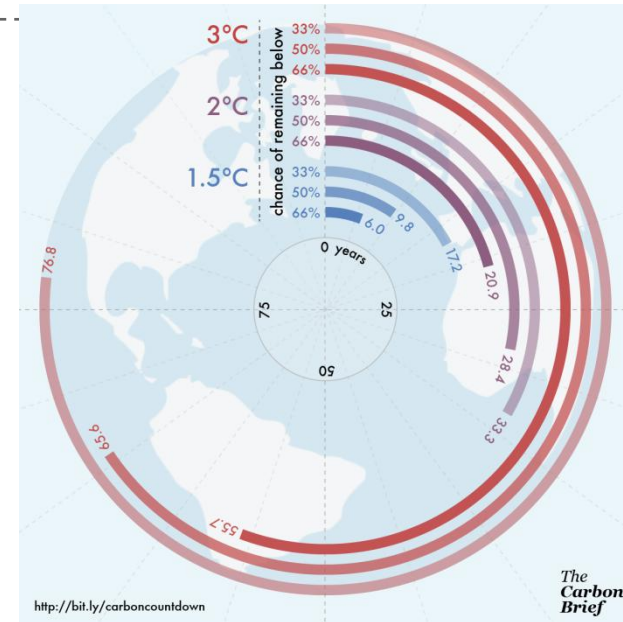
The EU emission budget and its implications for EU climate action

Brussels, 22 January 2018
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Global emission budgets

Parameters

- ▶ Targeted temperature increase (target)
- ▶ Probability to reach this target (probability)
- ▶ Negative emissions
- ▶ Overshooting
- ▶ Natural processes (LULUCF, ocean de-acidification...)



Source: The Carbon Brief

Challenges: Large uncertainties in estimates of...

- ▶ Natural long term developments
- ▶ Technological long term developments

Global budgets

Global **carbon** budget

| Source | Timeframe | <u>Budget (in Gt CO₂)</u> | |
|--------------------|-------------|--------------------------------------|----------|
| | | 1.5°C, 50% | 2°C, 66% |
| UNEP (2017) | 2011 - 2100 | < 600 | 1000 |
| UNEP (2016) | 2015 - 2100 | 217 | 553 |
| IPCC | 2010 - 2100 | 550 | 1000 |
| Climate Analytics* | 2010 - 2100 | 447 | 950 |

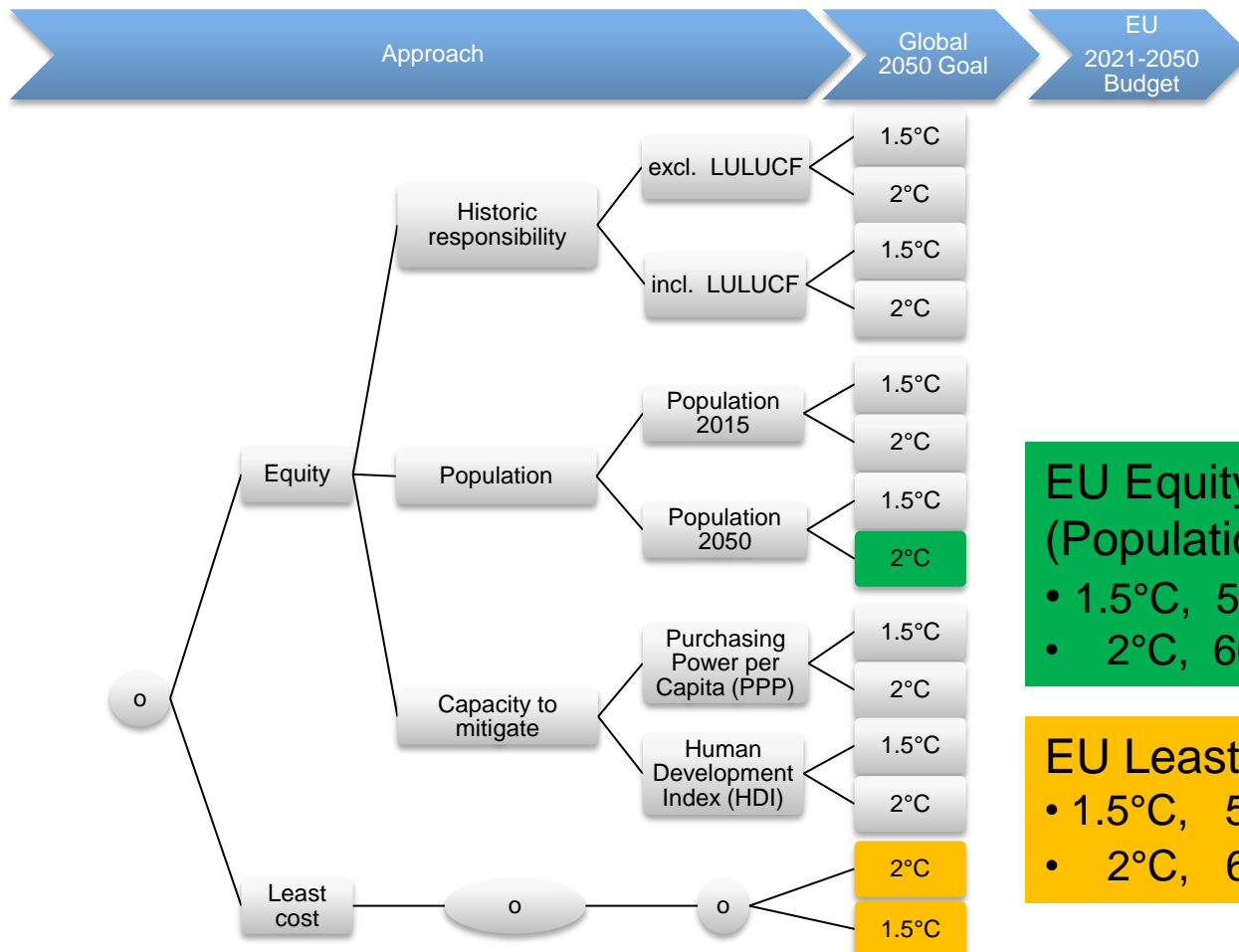
* Based on Rogelj et al. (2015)

Global **GHG** budget

| Source | Timeframe | <u>Budget (in Gt CO₂e)</u> | |
|----------------------|-------------|---------------------------------------|----------|
| | | 1.5°C, 50% | 2°C, 66% |
| Ecologic Institute** | 2010 - 2100 | 680 | 1440 |

** Based on Climate Analytics (2016)

Splitting up the global budget



**EU Equity Budget 2010 – 2100:
(Population 2050):**

- 1.5°C, 50%: < 40 Gt CO₂e
- 2°C, 66%: < 57 Gt CO₂e

EU Least Cost Budget 2010 – 2100:

- 1.5°C, 50%: 100 Gt CO₂e
- 2°C, 66%: 140 Gt CO₂e

Source: Ecologic Institute

EU 2030 target

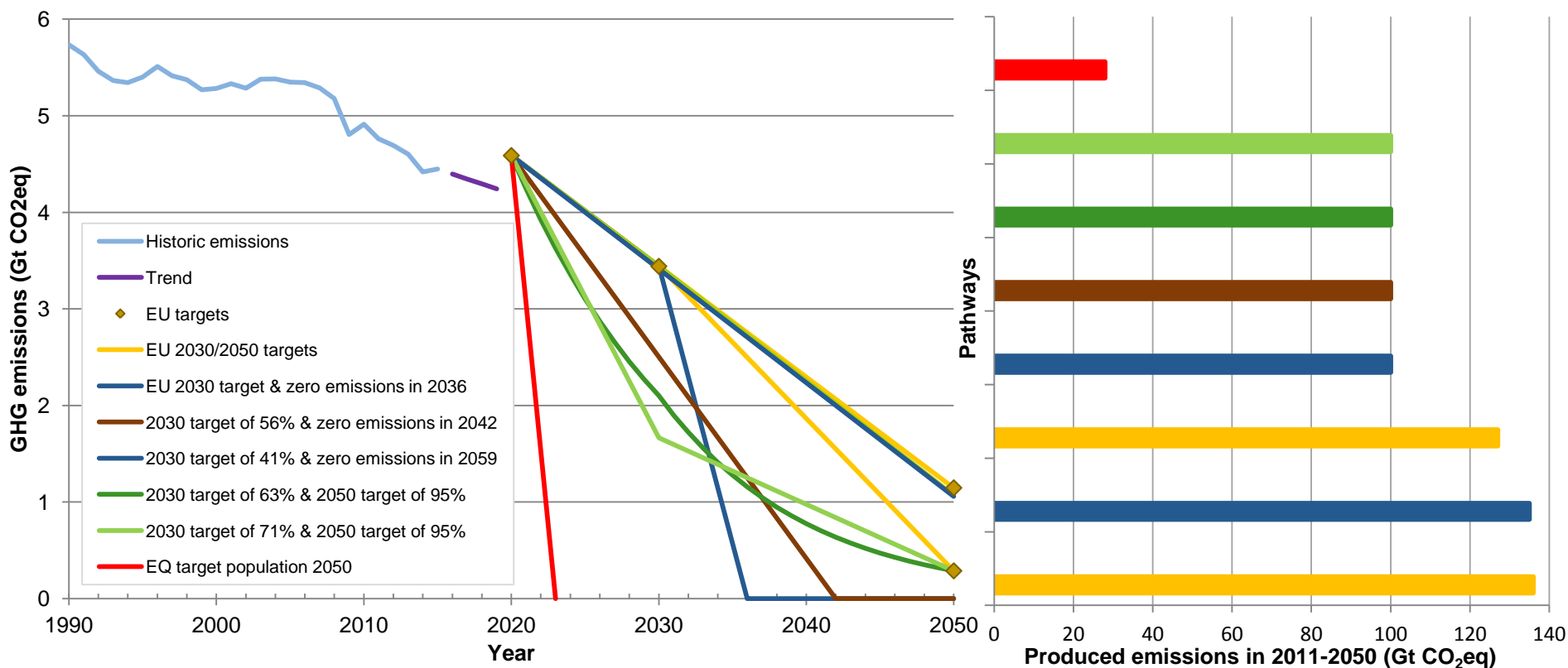
The current 2030 EU target leads to **overall emissions of 38 Gt CO₂e** for the period **2021-2030**

- Currently discussed cancellation in the ETS sector may lead to a reduction of around 1.5 billion allowances
 - Different “flexibilities” in the non-ETS sector may lead to an increase of around 927 Mt CO₂e
- ▶ Recent political decisions may decrease this budget to **37.4 Gt**



This leaves **12 – 12.6 Gt CO₂e** for the remainder of the century (least cost; 1.5°C; 50%)

Are reductions of 80-95% by 2050 a “fair” EU contribution?



Implications for the ETS / non-ETS Sector

| Options | Overall reduction 2030/2050 [against 1990] | 2030 emission reduction compared to 2005 | | 2050 emission reduction compared to 2005 | | ETS accumulated emissions | Non-ETS accumulated emissions |
|---|--|--|---------|--|---------|---------------------------------|-------------------------------------|
| | | ETS | Non-ETS | ETS | Non-ETS | 2010-2050 | 2010-2050 |
| Existing EU targets and pathways | | | | | | | |
| ETS LRF 2.2 until 2050 + reach both 2030 target and 2050 aspiration | 36% / 79-95% [40% / 80-95%] | 43% | 30% | 84% | 74-103% | 53 Gt CO ₂ eq | 70-78 Gt CO ₂ eq |
| ETS LRF 2.2 until 2030 + reach 2050 aspiration based on Roadmap split | 36% / 79-95% [40% / 80-95%] | 43% | 30% | 88-100% | 71-90% | 49-52 Gt CO ₂ eq | 73-79 Gt CO ₂ eq |
| Roadmap targets | 31-36% / 79% [35-40% / 80%] | 43-48% | 24-36% | 88-92% | 66-71% | 49-52 Gt CO ₂ eq | 76-83 Gt CO ₂ eq |
| Pathways to stay in the GHG budget for 1.5 °C (least cost) | | | | | | | |
| EU 2030 target and zero emissions in 2036 (1.5°C GHG budget) | 36% / 100% [40% / 100%] | 43-48% | 26-30% | 100% | 100% | 39-40 Gt CO ₂ eq | 57-58 Gt CO ₂ eq |
| 2030 target of 56% and zero emissions in 2042 | 53% / 100% [56% / 100%] | 53-71% | 53-38% | 100% | 100% | 37-41 Gt CO ₂ eq | 55-60 Gt CO ₂ eq |
| 2030 target of 63% / 71% and 2050 target of 95% | 60% / 95% [63% / 95%] | 60-81% | 44-60% | 95-100% | 90-95% | 36-45 Gt CO ₂ eq | 59-67 Gt CO ₂ eq |

Conclusions

- ▶ Effective climate action needs to **focus on budgets**, less on reduction targets
- ▶ Current EU targets and aspirations combined with linear pathways imply EU emissions from 2017 amounting to...
 - ▶ **28.2% – 31%** of the global 1.5°C budget and
 - ▶ **8.4% – 9.2%** of the global 2°C budget left after 2017
(projected EU population in 2050: 5.4%)
- ▶ 2030 target of **63% - 71%** and 2050 target of **95%** = EU contribution to a 1.5°C scenario (least cost approach)
- ▶ Any EU emission budget is very small and shrinking rapidly!

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Thank you!

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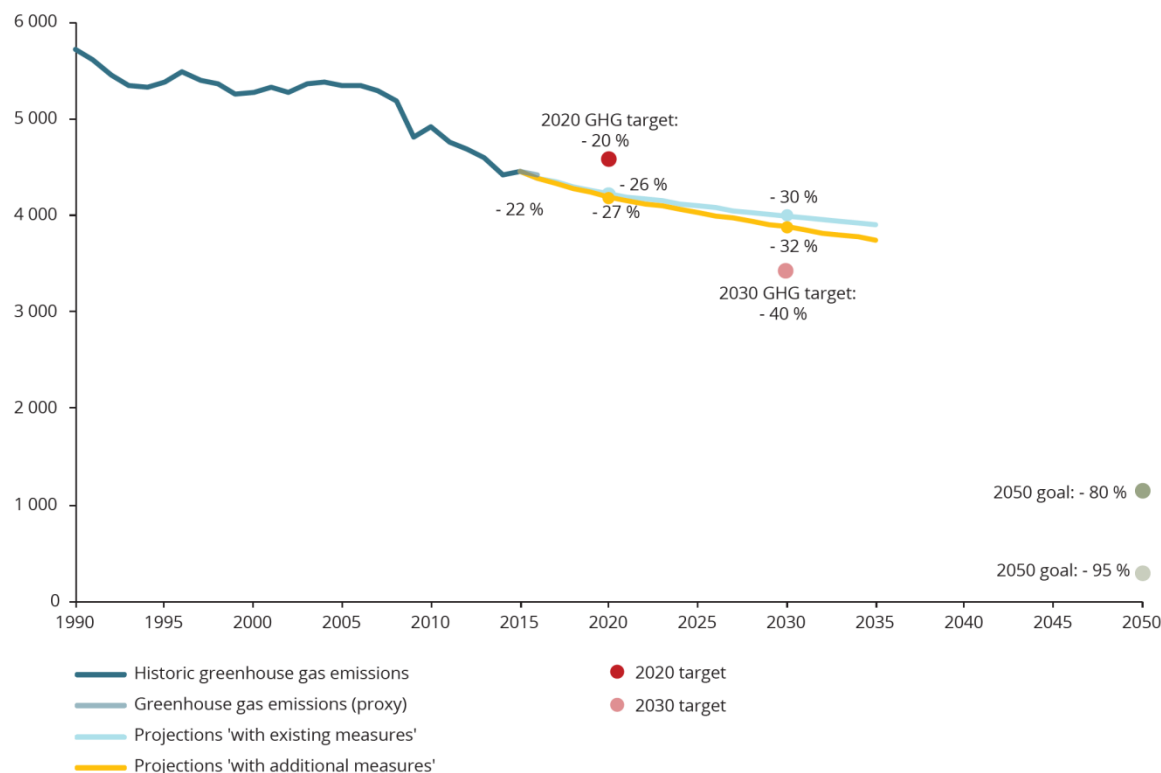
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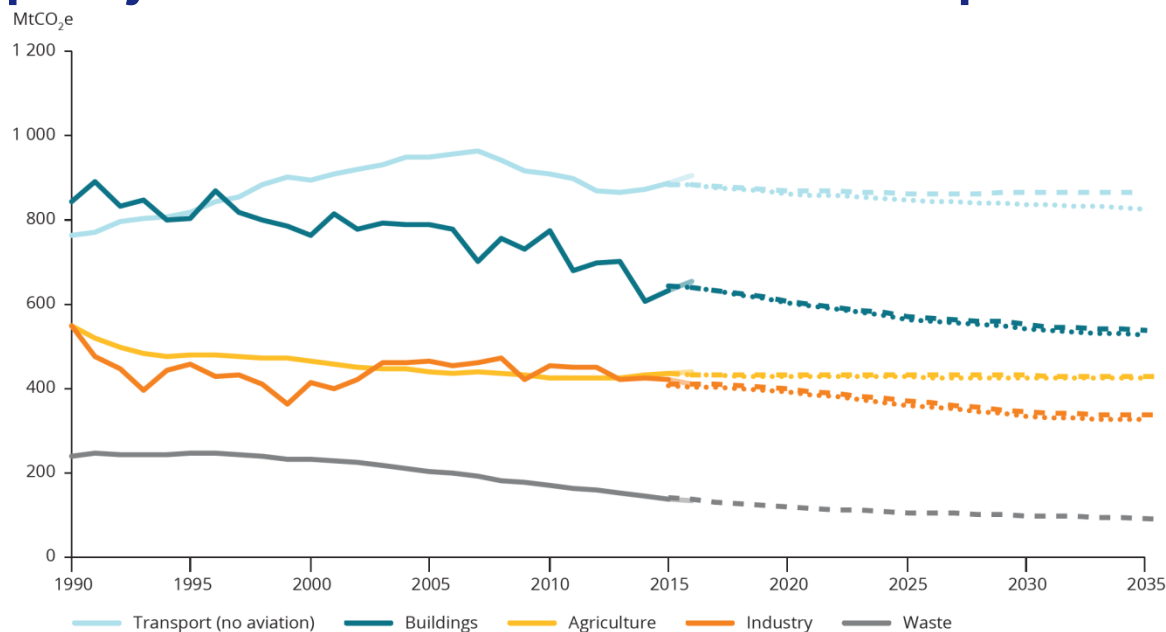
Backup: GHG emission trends, projections and targets in the EU

Million tonnes of CO₂ equivalent (MtCO₂e)



Source: EEA (2017): Trends and projections in Europe 2017

Backup: GHG emission trends and projections under the scope of the ESD

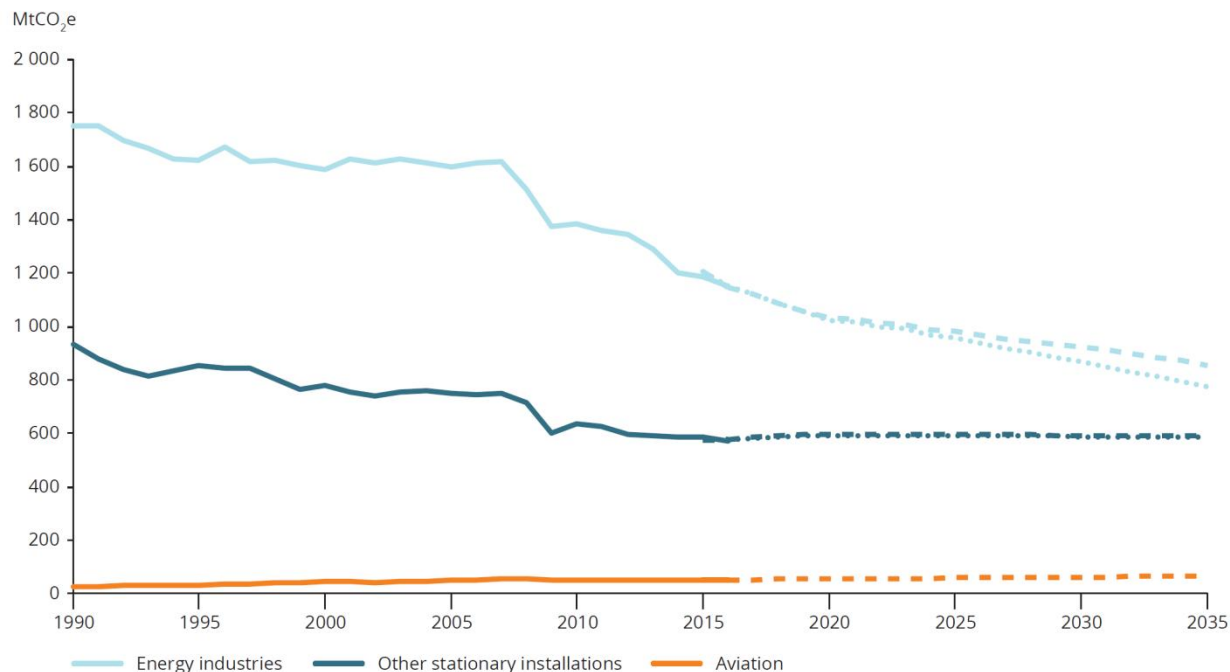


Notes: Solid lines represent historical GHG emissions (available for the 1990-2015 period) and proxy emissions for 2016. Dashed lines represent projections in the 'with existing measures' (WEM) scenario. Dotted lines represent projections under the 'with additional measures' (WAM) scenario.

The Effort Sharing sector emissions presented are estimated based on the attribution of GHG emissions, reported by source categories in national GHG inventories and national projections, to EU ETS sectors and/or Effort Sharing sectors. The sector here summarised as 'industry' aggregates ESD emissions of energy supply, manufacturing and product use, i.e. inventory source categories 1.A.1, 1.A.2, 1.B, 1.C and 2.

Source: EEA (2017): Trends and projections in Europe 2017

Backup: GHG emission trends and projections under the scope of the ETS



Notes: Solid lines represent historical GHG emissions (available for the 1990-2016 period). Dashed lines represent projections of the WEM scenario. Dotted lines represent projections under the WAM scenario.

The EU ETS GHG emissions presented were estimated based on the attribution of GHG emissions, reported by source categories in national GHG inventories and national projections, to EU ETS sectors and/or Effort Sharing sectors.

Source: EEA (2017): Trends and projections in Europe 2017

Backup: Why emission budgets?

Total concentration of greenhouse gases in the atmosphere is what matters for the climate system.

Cumulative total anthropogenic emissions is what is relevant for GHG concentration.

Emission budgets show the amount of GHG that can be emitted without exceeding a certain GHG concentration. Compared to a reduction target for a given year, budgets have the advantage that they take account of total admissible emissions.

