



## Building a Paris Agreement Compatible (PAC) energy scenario

### CAN Europe/EEB technical summary of key elements

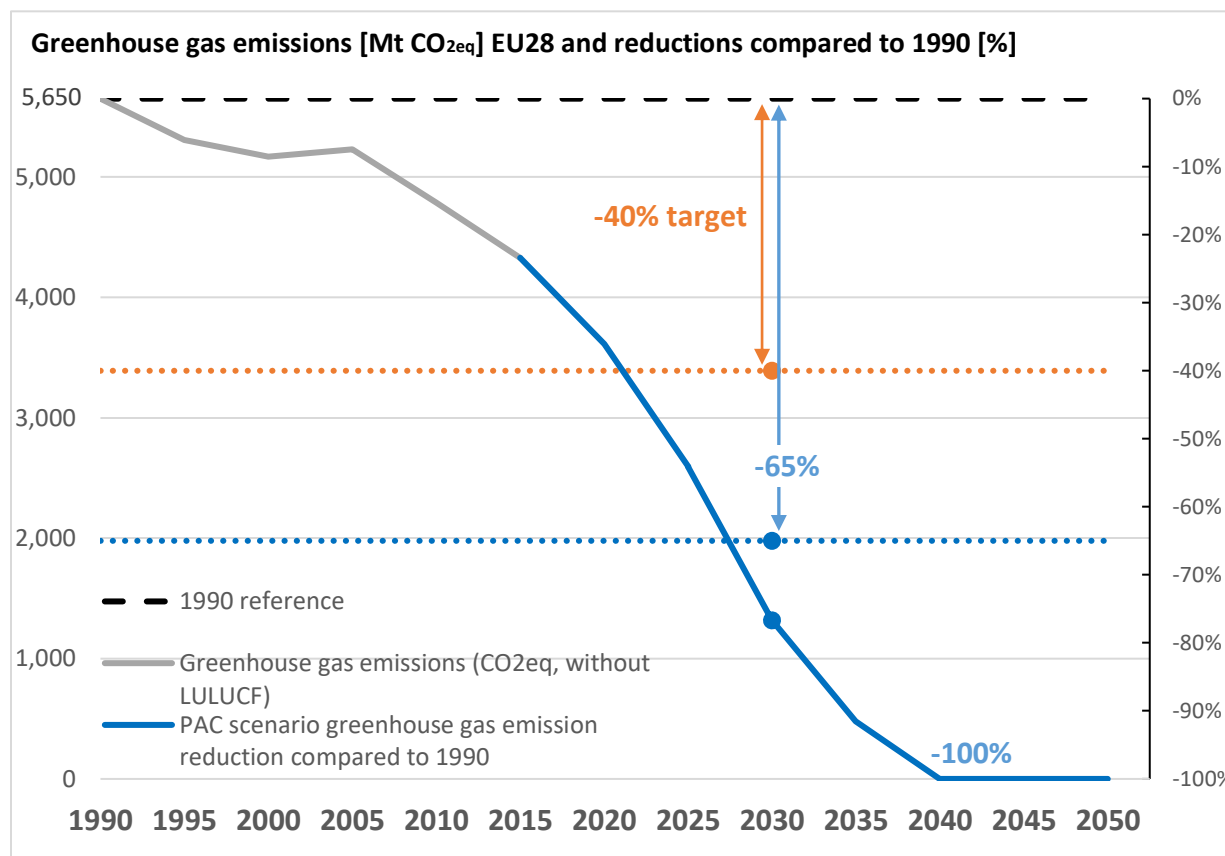
June 2020



### 3. Reaching the Paris Agreement 1.5°C target

#### 3.1 Greenhouse gas emissions reductions

The PAC scenario’s overarching aim is to illustrate a robust pathway that ensures the EU limits global warming to not more than 1.5°C as endorsed in the Paris Agreement. The deployment of energy savings and renewable energy potentials as described in chapters 1 and 2 ensure a quick reduction of greenhouse gas emissions.

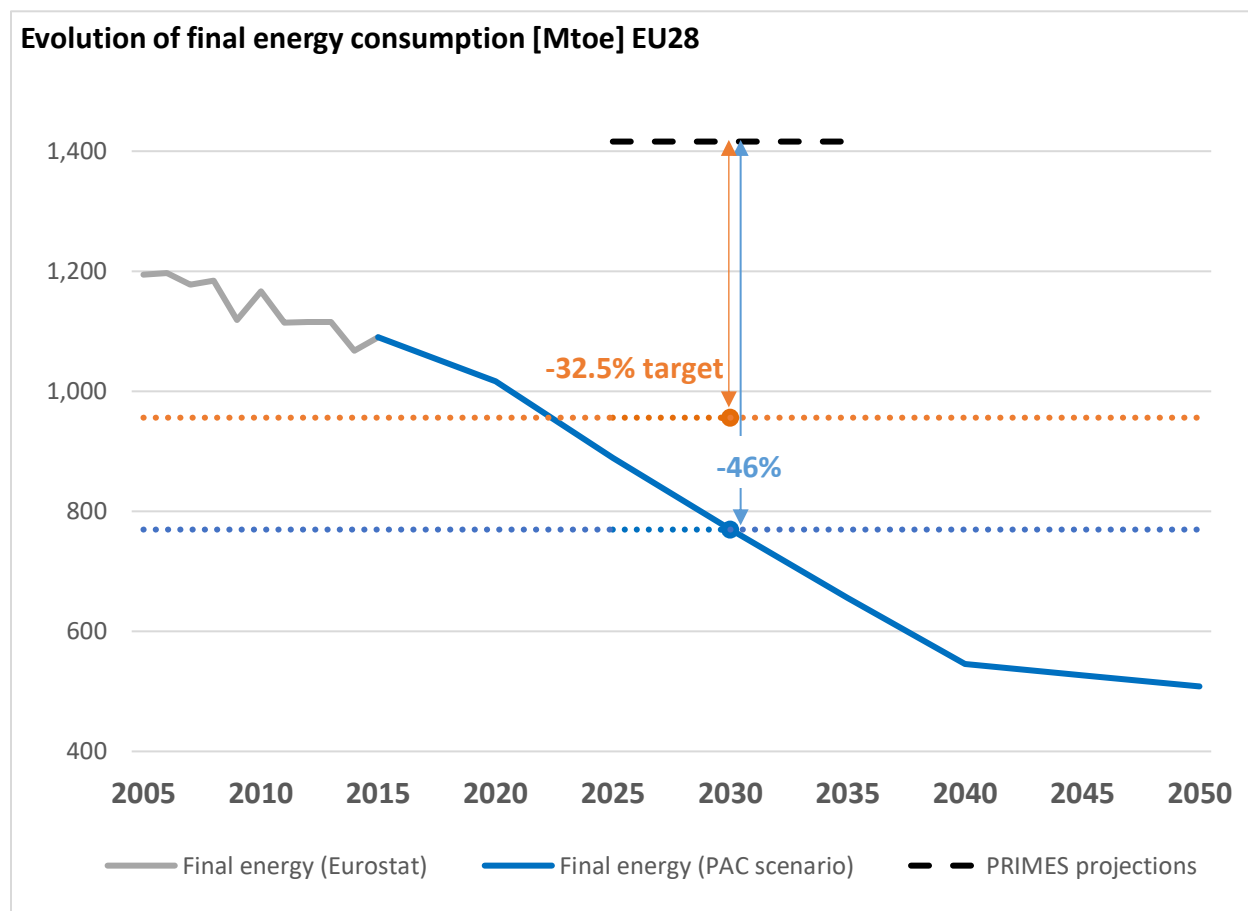


Energy-related CO<sub>2</sub> emissions decrease from 4,124 Mt CO<sub>2</sub> in 1990 to 997 Mt CO<sub>2</sub> in 2030, reaching full decarbonisation in 2040. This is a reduction by 76%. The non-CO<sub>2</sub> emissions from energy as well as the non-energy related emissions however are not included in this number. If they reduce as strongly as the energy-related emissions, total greenhouse gas emissions decrease from 5,650 Mt CO<sub>2eq</sub> in 1990 to ca. 1,367 Mt CO<sub>2eq</sub> in 2030. In order to cut the total greenhouse gas emissions by 65% in 2030, the non-CO<sub>2</sub> emissions as well as the non-energy related emissions would only have to be cut by 36% (from 1,526 Mt CO<sub>2eq</sub> in 1990 to 980 Mt CO<sub>2eq</sub> in 2030). Considering the current trends in emissions reductions, this reduction by a third of non-CO<sub>2</sub> and non-energy related emissions appears to be realistic. The EU climate target of at least 40% greenhouse gas emissions reductions in 2030 compared to 1990 thus can be outperformed.

These approximate calculations do not consider emissions and removals from land use, land use change and forestry (LULUCF) as these are traditionally not part of the EU 2030 climate target. A detailed sector-specific assessment of emissions reductions will be carried out during the second half of 2020.

### 3.2 Energy savings

The final energy consumption under the PAC scenario halves between 2015 and 2050. With a final energy demand of around 770 Mtoe in 2030, it shows the important energy savings potential that can be mobilised. It is clear that the EU 32.5% energy efficiency target for 2030 can be outperformed. Compared to PRIMES projections<sup>1</sup>, final energy consumption is 46% lower.



At the same time, expressing the abovementioned evolution in primary energy terms translates into a level of energy consumption of 1,014 Mtoe in 2030. The increasing share of renewable energy contributes to the primary energy decrease: The more renewable energy sources are used, the less primary energy input is lost by burning fossil fuels. The decrease equals a 46% reduction compared to the PRIMES projections.

The increase of non-fossil gases and fuels in the 2030s (renewable hydrogen, renewable ammonia, synthetic methane and liquid synthetic fuels) however causes an end to the declining trend. Because of the high losses of primary energy input during the production process of renewable hydrogen and the other gases and fuels, the primary energy consumption increases after 2035 to reach 1,308 Mtoe in 2050.

<sup>1</sup> PRIMES 2007 projections for the year 2030.

### 3.3 Renewable energy shares

The PAC scenario projects a fully renewable energy supply by the year 2040. The steep increase of renewable energy in the energy mix allows to outgo the EU 32% renewable energy target for the year 2030. The share of renewable energy sources in the gross final energy consumption of the EU28 reaches more than 50% in 2030.

