# The EU, a world leader in fighting climate change

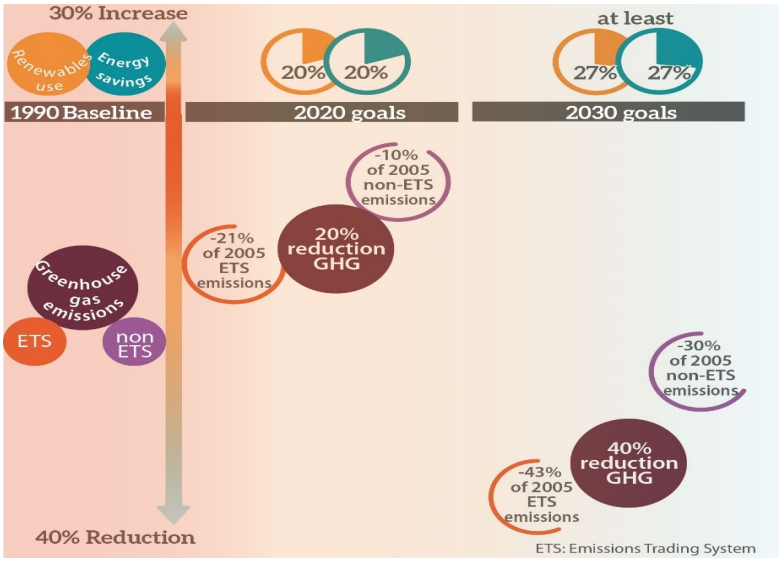
- The EU achieved its 2020 Kyoto target of reducing greenhouse gas emissions by 20 % (compared to 1990) ahead of schedule.
- EU economies grew by 53 % while emissions dropped by 23 % (1990-2016).
- New EU jobs created in the power and energy efficiency sectors will number 823 000 by 2026 to 2030.

The European Union is at the forefront of international efforts to reduce greenhouse gas emissions and thus safeguard the planet's climate. Greenhouse gases (GHG) – primarily carbon dioxide but also others, including methane and chlorofluorocarbons – trap heat in the atmosphere, leading to global warming. Higher temperatures then act on the climate, with varying effects. For example, dry regions might become drier while, at the poles, the ice caps are melting, causing higher sea levels. In 2016, the global average temperature was already 1.1°C above pre-industrial levels.

Rising concentrations of GHGs in the atmosphere are caused primarily by human activities such as the burning of fossil fuels and deforestation. The European Parliament has consistently pushed for action to curb emissions; without action, temperatures could rise to levels at which the impact becomes severe, with risks to food and water supplies, health, biodiversity and the built environment. There is a clear economic rationale for reducing emissions. For example, if the global temperature is allowed to rise to about 3°C above pre-industrial levels by 2100, the cost of damages could be equivalent to about 4 % of EU gross domestic product (GDP) per year.[1]

EU climate policies have been developing since 1990, when the United Nations Intergovernmental Panel on Climate Change – which provides the international scientific assessment of the problem – issued its first report. In 1997, the then-European Community signed up to the Kyoto Protocol and the EU subsequently joined the UN Paris Agreement, which was agreed in 2015. The Paris Agreement's stated goal is to limit global warming 'to well below

Figure 1 – EU commitments under UN climate agreements




Source: EPRS.



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2°C above pre-industrial levels' while 'pursuing efforts to limit the temperature increase to 1.5°C'. This international goal provides the overarching framework for EU climate policies.

# The EU climate policy architecture

EU climate policies are based on Article 191 of the Treaty on the Functioning of the European Union, which addresses environmental and health protection and promotion of international action to tackle environmental threats, especially climate change. The EU is seeking to reduce greenhouse gas emissions in a coordinated way and at least cost. For policy purposes, emissions have in effect been split into two categories:

- industrial and other emissions covered by the EU emissions trading system (ETS), which covers about 40 % to 45 % of EU greenhouse gas emissions; and
- emissions not covered by the ETS, which account for about 55 % to 60 % of the total.

While the ETS is an EU policy, non-ETS emissions are covered by EU and EU Member State policies. The EU has also agreed policies on renewable energy and energy efficiency to help with the achievement of both the ETS and non-ETS reductions.

The overall emissions reductions to be achieved are defined by binding targets. By 2020, the EU is required to reduce emissions by 20 % compared with 1990, a target that was enacted in EU legislation in 2009 to ensure the EU delivers on its remaining obligations under the Kyoto Protocol. The 2020 target breaks down to a 21 % cut in ETS emissions by 2020 compared with 2005 (the year in which the ETS got under way), and a 10 % cut from non-ETS sectors by 2020 compared with 2005. The 20 % emissions reduction necessary was already achieved in 2015, according to the European Environment Agency.

For the period after 2020, the EU has agreed to an emissions cut of 40 % below 1990 levels by 2030. This goal was agreed by the European Council in October 2014, and became the EU commitment under the Paris Agreement. The European Council also agreed the split of the target between ETS and non-ETS emissions: by 2030, ETS emissions should fall by 43 %, and non-ETS emissions should fall by 30 %, both relative to 2005 (see Figure 1).

The European Parliament has called for targets to be maximised and for the EU to play the strongest possible role in international climate talks. For example, before the United Nations climate change conference that finalised the Paris Agreement in 2015, Parliament adopted a resolution calling for the inclusion of a possible 1.5°C maximum temperature rise in the agreement. Parliament has also consistently pushed for ambitious EU energy efficiency and renewable energy targets, on the basis that they would drive innovation and lead to the creation of high-quality jobs, while making it more likely that climate goals can be achieved.[2] In early 2018, Parliament voted for high renewable and energy efficiency targets for 2030, compared with the position of the Council of the EU (see below: Perspectives: completing the climate architecture).

# A suite of policies

Within the overall climate policy framework, the EU has put in place a range of legislation to ensure that the emissions reduction burden is shared out fairly. The main building blocks are the following:

**Emissions trading.** Under Directive 2003/87/EC, power stations and energy-intensive sectors, such as steel, aluminium, chemicals, cement and glass production, are subject to an emissions cap, which tightens each year. For each tonne of carbon dioxide up to the cap, a tradable allowance is created; individual facilities must obtain enough of these allowances to cover their own emissions. Some allowances are given to facilities for free and some are auctioned. Safeguards are in place to ensure that sectors that might be vulnerable to international competition are not overburdened with the costs of emissions trading. Under the system's most recent reform (Directive (EU) 2018/410 of 14 March 2018), the emissions cap will be lowered by 2.2 % per year after 2021, compared with 1.74 % currently.

**Non-ETS national targets.** The European Parliament gave its final approval on 17 April 2018 to a regulation that will determine the national reductions each Member State must achieve by 2030 from non-ETS sectors, such as transport, agriculture, construction and waste management. Member States are free to decide how best to achieve the reductions, depending on their national circumstances. National reductions vary according to the level of development and capacity of each country, from zero for Bulgaria and -2 % for Romania, to cuts in the range of -38 % to -40 % for Germany, Denmark, Luxembourg, Finland and Sweden.

**Land-use and forestry.** Also on 17 April 2018, the European Parliament gave its final approval to a regulation that brings carbon sinks into the EU emissions reduction effort. Carbon sinks include resources such as forests that can lock in carbon when they are growing or expanding, but release it when they are cut down. Under the law, Member States must ensure that, on balance, emissions and removals from carbon sinks are balanced, and that therefore poor management of carbon sinks does not undermine emissions reductions from other sectors. The EU has also developed other actions on climate-friendly forest management in the EU.

**Renewables and energy savings.** To help ensure it achieves its emissions reduction goals, the EU has adopted a binding target of 20 % of final energy consumption to come from renewable sources by 2020, and a non-binding goal to save 20 % of energy compared with forecast energy consumption in 2020. By 2015, the renewable share had risen to 16.7 %, and the renewable goal is expected to be achieved. It is less clear however, whether the energy consumption goal will be reached, with the 2017 assessment of progress showing an increase in energy use that could jeopardise the target.

**Sectoral legislation.** The EU also adopts laws to reduce energy consumption, and therefore emissions, from certain sectors. For example, under the Ecodesign Directive (2009/125/EC), energy efficiency standards are adopted for a wide range of products, including domestic appliances, televisions, computers and industrial equipment. Under other EU legislation, limits apply, for example, to carbon dioxide emissions from vehicles and from buildings. These reductions are not absolute (in other words, individual appliances might become more efficient, but energy use and emissions might still rise if more appliances are sold). However, savings could be significant. Measures under the Ecodesign Directive, for example, are expected to deliver annual energy savings by 2020 that will exceed the primary energy consumption of Italy.

## European added value from climate policies

When the EU Member States agree to implement climate policies jointly, they benefit by sharing the burden. One example is emissions reductions from non-ETS sectors: the national targets have been set so that economic development in the poorest EU countries, including Bulgaria and Romania, is not undermined. Meanwhile, all countries will reap benefits in terms of jobs and economic growth as they decarbonise their economies. New jobs will be created in sectors including wind and solar energy, and in the retrofitting of buildings to make them more energy efficient. The European Commission has estimated that new EU jobs created in the power and energy efficiency sectors will number 823 000 between 2026 and 2030, on the basis of a 40 % emissions cut by 2030 accompanied by a move to a 30 % renewable energy share. Benefits will also be experienced in terms of jobs related to innovation and exports of low-emission technologies, for example in the transport sector.

A clear EU emissions reduction pathway gives companies across the EU predictability in terms of their investments in low-carbon technologies. The EU has already shown it can decouple greenhouse gas emissions from economic growth. Between 1990 and 2016, the GDP of the current EU Member States increased by 53 % while emissions dropped by 23 %.

# Perspectives: completing the climate architecture

The EU is on the way to completing its climate architecture for 2030, but more must be done: as the European Environment Agency explains, some targets are on track, while others need more work. In January 2018, the European Parliament voted for a binding target of 35 % of EU energy consumption to be met by renewables in 2030, and for a binding energy-saving target of 35 % compared to business-as-usual projections. The Council of the EU has opted for lower targets: 27 % for renewables and 30 % for energy savings. The Parliament and Council must reach agreement on the targets.

In addition, the EU has expressed concern about slow progress on finding an agreement on emissions cuts from international aviation and shipping. Airline flights within the European Economic Area (EEA) are included in the ETS, but flights to and from destinations outside the EU are not. The EU has pushed the International Civil Aviation Organization (ICAO) and the International Maritime Organization (IMO) to agree global rules. An ICAO scheme that will use carbon credits (purchases of emissions reductions, for example from afforestation projects, see also EPRS 'At a glance' note), to offset growth in aviation emissions will start in 2020. Members of the European Parliament have criticised the plans as insufficient. A 2017 European Parliament resolution, for example, said that the ICAO scheme 'falls far short' of EU expectations (paragraph 48). Meanwhile, on 13 April 2018, the IMO agreed to halve shipping emissions by 2050 compared with 2008, mainly through the introduction of low-carbon fuels. (See also EPRS 'At a glance' note.)

The EU is also starting work on a strategy that will guide emissions reductions up to 2050. The same 2017 Parliament resolution (paragraph 18) noted that the EU should prepare 'a mid-century zero emissions strategy'. In the conclusions of its March 2018 meeting, the European Council followed this up, requesting that the European Commission 'present by the first quarter of 2019 a proposal for a strategy for long-term EU greenhouse gas emissions reduction in accordance with the Paris Agreement'.

## ENDNOTES

[1] The ClimateCost Project, Final Report, p. 15. The project was funded under the EU's Seventh Framework Programme. Damages would include disaster costs (for example from flooding), health costs, agricultural losses and damage to ecosystems.

[2] See for example the European Parliament resolution of 5 February 2014, A 2030 framework for climate and energy policies.

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