



position // DECEMBER 2018


Re-aligning the European Union's climate policy to the Paris Agreement

Short-term implications
of the IPCC special report
“Global Warming of 1.5°C”

Imprint

Publisher:

German Environment Agency
Division I and V
PO Box 14 06
D-06813 Dessau-Roßlau
Tel: +49 340-2103-0
info@umweltbundesamt.de
www.umweltbundesamt.de

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Editors:

Division I (Environmental Planning and Sustainability Strategies) and V (Climate, Energy, German Emissions Trading Authority)

Design:

German Environment Agency

Publication as a pdf:

www.umweltbundesamt.de/en/publications

Photo credits:

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Dessau-Roßlau, December 2018

ISSN 2363-8273

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Key issues

1. Raising domestic ambition within EU rapidly

- ▶ The IPCC Special Report “Global Warming of 1.5°C” (SR1.5) clearly conveys that between 1.5°C and 2°C of global warming risks to nature and mankind increase more sharply than previously assumed and that warming above 1.5°C may push the achievement of the Sustainable Development Goals out of reach. Hence, **climate policy at all levels should be recalibrated towards limiting warming to 1.5°C, including in the European Union (EU).**
- ▶ According to SR1.5, limiting warming to 1.5°C requires drastic emission reductions globally by 2030 (40–60%, compared to 2010). This necessary increase in the level of ambition in the near-term would have major implications for European climate policy. Apart from committing to achieving greenhouse gas-neutrality by 2050, the EU would have to rapidly accelerate emission reductions by 2030. **By raising its Nationally Determined Contribution (NDC) for 2030 to well over 50% emission reductions** (compared to 1990) **the EU** could initiate a new momentum for strengthening NDCs globally. Simultaneously the EU **will have to create internal enabling conditions in order to facilitate a further increase of the 2030 NDC towards 60% reductions or more** (compared to 1990), hereby i. a. reducing the dilemma between global responsibility and economic feasibility.

2. Supporting global climate ambition

- ▶ Even very ambitious European emission reduction efforts in the next decade may still lead to cumulative emissions that are not in line with an adequate contribution to the 1.5°C target. Thus, **the EU needs to develop a strategy for supporting global climate ambition outside of the EU in order to safeguard a 1.5°C warming limit.**

- ▶ In addition to enhancing its own 2030 NDC, the EU should help strengthen international mitigation efforts and **engage more strongly in supporting increased ambition beyond its own territory as a strategic interest of its own policy-making.** Hence, it is essential to create a supportive environment for increased ambition abroad.
- ▶ Creating an environment and a dynamic for the necessary increases in ambition, **could be enabled by a broad range of measures, policies and instruments.** This includes global carbon pricing, organizing divestment and just transition, abolishing fossil fuels subsidies, maintaining and enhancing natural carbon sinks and greening of global financing flows.

3. Raising global climate ambition using cooperative approaches (article 6 PA)

- ▶ The cooperative approaches of Article 6 in the Paris Agreement (PA) are one of the options for the EU to contribute to increased international climate ambition.
- ▶ The **use of cooperative approaches must ensure environmental integrity, specifically avoiding double counting.** As for all policies, any lock-in effects could put the temperature goals out of reach and must therefore be avoided.
- ▶ The EU should use cooperative approaches after 2020 **not in order to ease the achievement of domestic EU targets, but in order to contribute to additional climate ambition abroad.**

Preface

When the Parties to the Paris Agreement communicate or submit their updated nationally determined contribution (NDC) to UNFCCC by 2020, they will have to address the findings of the recently published IPCC Special Report “Global Warming of 1.5°C” (SR1.5). Already before, it was clear that there is a huge gap between the nationally determined contributions and the mitigation efforts necessary to limit global warming to the temperature objectives of the Paris Agreement. All Parties to the Paris Agreement are therefore urged to reassess their individual NDC’s with the view to further strengthening and accelerating emission reductions.

On this occasion the German Environment Agency (UBA) has developed its position on the EU climate policy with some reflections on the short-term implications of SR1.5 to provide further information to help adequately re-aligning European climate policy to the objectives of the Paris Agreement. Taking into account the enormous efforts required to transform the European economies towards greenhouse gas neutrality in an economically, socially and environmentally compatible way, this position paper outlines our current understanding of how to increase and accelerate ambition within and outside the EU in the next decade.

1. Raising domestic ambition within the EU rapidly

The German Environment Agency (UBA) strongly advises climate policy at all levels to recalibrate climate mitigation efforts towards limiting warming to 1.5°C, including the European Union (EU). The IPCC Special Report “Global Warming of 1.5°C” (SR1.5) makes it clear that the risks to nature and mankind between 1.5°C and 2°C of global warming increase more sharply than previously assumed. New evidence shows that warming above 1.5°C may push the achievement of the Sustainable Development Goals out of reach. A limitation of global warming to 1.5°C is only possible with a radical reduction of global greenhouse gas (GHG) emissions in the short- to mid-term, and moreover with net zero CO₂ emissions by the middle of the century at the latest, including simultaneously stringent emissions reductions of other climate-impacting substances, in particular methane and nitrous(dioxide).

According to SR1.5, drastic emission reductions on the global level are already required by 2030 for limiting warming to 1.5°C. Rapid reductions are necessary because today the world is facing a very limited remaining CO₂ budget for limiting global warming to 1.5°C¹. Even if the relationship between the total amount of cumulative emissions and warming limits is subject to considerable uncertainties, the SR1.5 gives a strong indication of aggregated global carbon budgets and the likelihood that they correspond with a certain level of global warming. Depending on the method used for measuring temperature increase, the remaining budget starting from January 2018 to 2100 may be either 420 or 570 Gt CO₂ for a 66% probability of not exceeding 1.5°C warming². At current emission rates, the remaining global budget could be consumed in only 10 years or even earlier. However, these estimates contain substantial uncertainties (at least ± 650 Gt – larger than the estimated budget itself) and the remaining budget could therefore even be significantly lower.

As a result, it is evident that minimizing cumulative emissions in the very short term is essential to reduce the risk of overshooting the warming limit.

Therefore, climate policy should be guided by conservative estimates for the remaining budget.

By 2030, global GHG emissions must decline by approx. 40–60% compared to 2010 and reach an annual global level of **25–30 Gt CO_{2e}** (interquartile range; SR1.5, SPM-C1, D1.1). The contributions of all parties to the Paris Agreement announced so far would likely lead to an emission level of approx. 52–58 Gt CO_{2e} in 2030. Even if fully implemented, these contributions will therefore not be sufficient to limit the global temperature increase to 1.5°C, even if very ambitious GHG reductions would be achieved after 2030.

The recent SR1.5 has major implications for European climate policy. The current EU target for 2030 – reducing emissions by 2030 at least by 40% domestically compared to 1990 – would translate into cumulative GHG emissions of approx. 52 Gt CO_{2e} (all greenhouse gases) or roughly 42 Gt CO₂ (CO₂ only) in the period 2018–2030³. If current trajectories in ETS and Non-ETS-sectors are continued without change after 2030, this leads to approx. 80% emission reduction by 2050 compared to 1990 and cumulative emissions of roughly 78 Gt CO₂ by 2050 (assuming a fixed share of 19% for non-CO₂ emissions). Taking the above mentioned 420 Gt CO₂ as benchmark for a remaining global budget until the end of the century, this would mean that by 2030 the EU would already emit around 10% of the entire global budget remaining for the rest of this century and 19% by 2050⁴. This is far more than the current EU share of global population (which is less than 7%), and can by no means be regarded as a “fair share” of the global budget even if the “fair” distribution of a global budget among regions and states is a very difficult challenge and not least a politically sensitive issue.

1 at a probability of 66%

2 SR1.5 defines global warming as an increase in global mean surface temperature (GMST) above pre-industrial levels, which is connected with a global remaining budget of 570 Gt CO₂. Using global mean surface air temperature, as in AR5, would be connected with a global remaining budget of 420 Gt CO₂, see SPM, C1.3.

3 ETS Cap (stationary only, but incl. Norway, Liechtenstein, Iceland) plus Non-ETS (ESD/ESR) annual budgets: 2018–2020: 13.5 Gt; 2021–2030: 38.4 Gt. The share of CO₂ emissions in total GHG emissions in recent years was 81–82% (EEA 2018).

4 Taking a carbon budget of 570 Gt CO₂ as a benchmark for the remaining global budget, does not significantly change the picture: it would result into the EU absorbing 7% of the global budget by 2030 already (14% by 2050).

Greenhouse gas neutral societies are viable

The fast switch from fossil to renewable and sustainable energy is the key to minimizing cumulative emissions and avoiding lock-in effects. The transformation of the energy system including improvement of energy efficiency is of utmost importance to achieving the Paris Agreement objectives. A fully decarbonized energy system needs an energy supply based 100% on renewable energies. This requires a sustainable system without nuclear energy, carbon capture and storage or crop-based bioenergy. The decarbonisation of the entire energy system additionally requires an integrated, cross-sectoral approach to supply all sectors and fields of application with renewable energy, i. e. a coupling of sectors. To comply with this requirement, the electricity production needs to be fully based on renewables well before 2050 in order to contribute to the decarbonisation through sector coupling. Key are also ambitious reduction activities in other sectors.

In past decades substantial progress has been made with regard to innovation, cost degression and diffusion of new low carbon technologies (e. g. Wachsmuth et al., 2018). Substantial research, numerous examples and growing markets for low carbon technologies already show that greenhouse gas neutral societies are possible and viable.

By 2020 at the latest the EU should commit itself to achieving greenhouse gas-neutrality by 2050 and accelerate emission reductions rapidly by 2030⁵. The discussions on the Long-term Climate Strategy of the EU, which will take place in 2019, could provide an appropriate framework for adopting a more ambitious 2030 emission reduction target. A recent analysis of the EU Commission (EU-COM 2018a) shows that the legislative provisions adopted in Spring/Summer 2018 (“clean energy package”) could reduce GHG emissions within the EU by 45% compared with 1990 levels. The increased renewable energy and efficiency targets need to be followed by corresponding downward adjustments of legally binding emission budgets for the EU ETS and Effort-Sharing-Sectors. However, 45% emission reductions until 2030 are not sufficient for a

transformation pathway to net zero CO₂ emissions by 2050 without abrupt interruptions. Raising the European emission reduction target for 2030 to 45% can therefore only be the starting point for necessary deliberations on means to further increasing mitigation ambition within the EU.

As a first step and in order to initiate a new momentum for strengthening 2030 NDCs globally, the EU should immediately – that is in 2019 – raise its climate target for 2030 to well over 50%.

Because of the special role of the energy sector in terms of abatement potentials and its important role for decarbonisation in other key sectors, ETS sectors should reduce emissions even more rapidly compared to the Non-ETS sectors⁶. The EU-COM analysis shows that a GHG emission reduction of around 53% compared to 1990 could be achieved domestically if the targets for the expansion of renewable energy sources (45%) and energy efficiency (40%) were increased, even with slightly positive economic effects, e. g. on the total value added⁷. This would translate into emission reductions of 58% in the ETS sectors (compared to 2005), and 42% in the Non-ETS sectors (compared to 2005).

Simultaneously, the EU must create internal enabling conditions to facilitate a further increase of the 2030 NDC towards 60% reductions or more (compared to 1990), hereby i. a. reducing the dilemma between global responsibility and economic feasibility. More recent analysis with a global perspective encourages further efforts to deliberate even stronger 2030 mitigation contributions not only for the EU but also for other large GHG emitters, incl. US, China, Brazil, India, Japan, and Canada (Wachsmuth et al., 2019). As SR1.5 unmistakably reveals, this is of particular relevance with regard to still viable sustainable emission pathways that contain only very limited use of carbon dioxide removal technologies beyond 2050. Thus, the EU needs to simultaneously balance political versus economic concerns internally as well as to signal its adherence to the recent findings of the SR1.5 and its self-commitment to the ambitious temperature objectives of the Paris Agreement⁸.

5 See UBA 2018.

6 see UBA 2018.

7 with additional EU-wide investment requirements of around EUR 60 billion p.a. in the electricity sector and additional EUR 100 billion total energy system costs; that would approximate 0.4–0.6 percent in relation to EU GDP.

8 EU-Council, 2018.

2. Supporting global climate ambition

Limiting warming to 1.5°C requires reducing global CO₂ emissions by 40–60% by 2030 (compared to 2010) and achieving net zero CO₂ emissions by around 2050. This requires global system transformations unprecedented in scale (IPCC 2018, SPM C1, C2). Clearly the Nationally Determined Contributions (NDCs) are not on track for limiting warming to 1.5°C. It is therefore essential to enhance the NDCs as much as possible and where not possible to complement them with further global cooperation. In total the reductions will need to be nearly twice as much as what is already offered in the NDCs.

Even ambitious increases of European emission reduction efforts in the next decade may lead to cumulative emissions that are not in line with the 1.5°C target. The Commission's modelled emission reduction of 53% compared to 1990 until 2030 would still imply cumulative emissions of around 48 Gt CO_{2e} (39 Gt CO₂ only) between 2018 and 2030, i. e. the EU alone would devour 7–10% of the remaining global CO₂ budget by 2030 already. Even more drastic reductions in 2021–2030, such as 64–65% compared to 1990, would probably still translate into the European Union consuming a higher than an adequate share of the global CO₂ budget for 1.5°C⁹. Thus, **the EU needs to develop a smart strategy for supporting and communicating stronger global climate ambition beyond its own territory in order to safeguard the 1.5°C target.**

Since parties to the Paris Agreement already recognized in 2015 the urgent need to enhance the developed countries' provision of finance, technology and capacity-building support, the EU – in addition to enhancing its own 2030-NDC – should **help strengthen international mitigation efforts through cooperation**. Taking into account global and its own vulnerability to the impacts of global warming, the EU needs to engage more strongly in supporting increased ambition outside the EU as a strategic interest of its own policy-making. In this regard, it is essential to **create a supportive environment for increased ambition within EU and abroad**.

In our view, the EU can contribute to the achievement of such a supportive environment by:

- ▶ **strengthening EU Climate Diplomacy** through multilateral and bilateral arrangements and
- ▶ working with others to **advance effective policies and measures**.

These approaches should promote a shared understanding and cooperative implementation of increased global climate action. Existing instruments of international cooperation, which need to be strengthened, include Official Development Assistance (e. g. climate finance), technology transfer, and capacity building.

In our view, some of **the most promising policies and measures** where these instruments and strategic partnerships can enhance action include:

Carbon pricing and other climate policies

Pricing CO₂ emissions and other greenhouse gases helps low carbon technologies gain market shares and generate substantial public funds. Supporting carbon pricing on the international level can be done by taking different approaches such as emissions trading and CO₂-taxation and by establishing a minimum level of effective carbon pricing in all sectors and jurisdictions. International initiatives and global modelling exercises can indicate appropriate carbon pricing paths that should be aimed towards. As carbon pricing can certainly be a powerful tool, climate policy needs to take a broader approach and also implement sector specific regulations and a binding framework for decarbonisation. A stringent climate policy is becoming more and more a measure to reduce regulatory uncertainty.

⁹ Even an economy wide reduction in emissions of 64% by 2030, as shown by Meyer-Ohlendorf et al. 2018, would translate into cumulative emissions of 44 Gt CO_{2e} (35 Gt CO₂ only), consuming roughly 8% of the global remaining CO₂ budget already in the next decade.

Organising divestment and just transition

Phasing out coal and other fossil fuels, is a key challenge in increasing climate ambition as established emissions-intensive sectors need to change fundamentally. Instead of delaying structural change, the EU and other actors need to organize transition by sector specific policy approaches. This means following a proactive approach on divestment and on easing the effects on the workforce and society as a whole. One step can be to join and support the Powering Past Coal Alliance and to convince other countries world-wide by setting good examples for just transition in coal and other fossil industries.

Abolishing fossil fuel subsidies

The potential financial, social and ecological benefits of international reductions in fossil subsidies are huge (IISD 2018). Reforming these subsidies could provide incentives to reduce the wasteful consumption of fossil fuels and allow to reinvest subsidy savings into renewable energy technologies, energy efficiency or other development priorities like health, education, job creation and social protection. There are already a number of national and international initiatives to reduce subsidies harmful to the climate. However, there are globally hardly any signs of ambitious and consistent implementation.

Maintaining and enhancing natural carbon sinks

Upscaling investments in instruments such as Warsaw Framework on REDD+ and initiatives such as the Bonn Challenge or the 4 per 1000 Initiative (for soil carbon sequestration) are essential to turn global land use from a source of emissions into a net sink. This is especially important since sustainable approaches to remove CO₂ from the atmosphere are key for limiting warming to 1.5°C. Additionally such measures can help reduce climate vulnerability and provide synergies for nature conservation, food security and other aspects of sustainable development.

Greening of global financial flows

To raise ambition and adhere to the Paris Agreement (Article 2.1c) a fundamental redirection of global financial flows is inevitable. This implies on the one hand to phase out the financial means that still flow into brown assets and activities, which often have a life cycle of 40 to 50 years. On the other hand, it is necessary to substantially increase the financial flows towards climate protection and climate-resilient development. In this context, it is necessary to bring green finance out of the niche and into the mainstream within the next few years, to take into account the financial risks of brown assets and activities, to reset regulation and business practices of the financial system, to finance innovations for transition and to rethink development finance and to plan and finance infrastructure in line with a low carbon and climate-resilient future.

Conclusion: In order to create a supportive environment and a dynamic for the necessary increases in ambition, a broad range of measures, policies and instruments is required.

3. Raising global climate ambition using cooperative approaches (article 6 PA)

Market mechanisms played a major role in the Kyoto Protocol and helped developed countries in achieving their emission reduction obligations. Whereas the EU has excluded the use of market mechanisms for its current NDC, the question of using market mechanisms will probably occur again during the discussions on raising the European climate target for 2030. The EU therefore needs to discuss and decide how the cooperative approaches of Article 6 in the Paris Agreement (Article 6 PA) should be used for supporting increased climate ambition.

In order to implement NDCs in a cooperative manner and to enable higher ambition, Article 6 PA establishes cooperative approaches for the international transfer of mitigation outcomes (Art. 6.2) – including a mechanism for mitigation and sustainable development (Art 6.4), and non-market approaches (Art. 6.8). The general requirements of environmental integrity and raised ambition for these instruments, contained in Article 6.1 PA, implies that their use must lead to additional climate benefits, not only economic benefits.

Environmental integrity and enabling raised ambition imply, in the context of keeping the temperature goals within reach, that lock-in effects must be avoided. As for all policies this excludes any support of activities that are inconsistent with pathways towards greenhouse gas neutral economies or have significant negative environmental consequences. Together with the requirements to foster sustainable development, this also means that only activities that meet sustainability criteria and support national low-emission development strategies should be allowed or supported.

Such an approach would also avoid incentives to gain benefits from low-ambition NDCs. To achieve this, significant reforms compared to the practices developed for the flexible mechanisms under the Kyoto Protocol are necessary.

As the Paris Agreement aims at a progression in both scope and ambition of NDCs, the Article 6 cooperative approaches, including the mechanism defined under Article 6.4, also need to provide incentives to enlarge the scope of NDCs. These approaches should therefore only be applied within the scope of NDCs, which can be updated at any time.

On the basis of robust rules providing for these aspects, cooperative approaches would anticipate and prepare future ambition raising in NDCs through an enabling ruleset. However, if weakly designed, **Article 6 rules could also undermine existing ambition and prohibit future ambition raising. The implementing rules for Article 6 of the Paris Agreement need to provide robust solutions for these risks.** For example, in order to avoid an increase in global emissions compared to the NDCs and to facilitate an overall mitigation of global emissions, the baselines to be used for Article 6 cooperative approaches should also be compatible with decarbonisation and transformation and should be significantly lower than either historic emissions or business as usual. Another significant risk is the potential double counting and double claiming of emission reductions by several Parties or for several purposes. In particular, emission reductions that could be used for offsetting emissions from international aviation and shipping face significant risks of environmental integrity if Article 6 does not provide for robust rules to avoid double counting.

The EU should use cooperative approaches after 2020 only if they are robustly designed to ensure environmental integrity and to enable raised ambition. They should not be used in order to ease the achievement of domestic EU targets, but in order to contribute to additional climate ambition abroad.

Given the necessities of ambition raising within the EU outlined above, the use of cooperative approaches must not lead to any expansion of the emissions budget that is available within the EU. Therefore, the cooperative approaches of the Paris Agreement (Art. 6.2 and 6.4) should not be linked as market mechanisms with the European binding market-based emission reduction instruments ETS and ESR. Also, any linking of the EU ETS with another Paris compatible ETS in the future should meet the criteria of environmental integrity and raised ambition. It would theoretically be possible to avoid an increase of domestic emissions connected with the use of international certificates by adjusting the EU ETS cap downwards. However, in practice, such a downward adjustment may not be politically feasible.

We therefore recommend **using cooperative approaches for the implementation of NDCs and ambition raising in the context of climate financing, i. e. Results Based Financing.**

This could support transformational low-greenhouse gas approaches abroad and be financed via carbon taxation or using auctioning proceeds of the ETS. To ensure efficient use of funds, MRV systems developed for cooperative approaches could determine the achieved emission reductions. However, whereas the predictability and long-term character of financial contributions is a challenge, long-term earmarking of funds in order to facilitate sustainable effects could address these needs.

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