



WWF Assessment of Germany's Climate Action Plan 2050

Introduction and summary

As set forth in the agreement between Germany's coalition partners, the German federal government drafted a Climate Protection Plan 2050 which was adopted on 14 November 2016. With this plan, the federal government set the course for long-term climate protection and energy policy in Germany.

The lead ministry, the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB), conducted an **extensive dialog process** in advance of the plan. This is a welcome approach as it successfully integrated a large number of stakeholders. Despite the challenges that this kind of extensive development process entails, WWF views the involvement of stakeholders to be valuable because it strengthens the degree to which the outcome is accepted.

WWF also considers it positive that the Climate Action Plan 2050 uses the Paris Climate Change Agreement as the starting point for Germany's long-term climate protection and energy policy and has committed to the goal of **far-reaching greenhouse gas neutrality by the middle of the century**¹.

The Paris Agreement means more ambitious climate change targets, particularly for the EU. From the WWF's perspective, it is appropriate for the Climate Action Plan to call for a re-evaluation of the **EU climate targets** and to explicitly set the EU 2030 target as a minimum target.

Furthermore, WWF views the **sectoral targets** introduced for the first time for all sectors as important and indispensable steps.

However, German climate change targets fall short because they are still not legally binding. WWF Germany calls for the long-term target for 2050 and the sectoral targets for each decade to be transposed into law so as to lend them the necessary credibility from the point of view of the economic actors and to guarantee the respective planning and investment security for the long-term process of transformation. That the Climate Action Plan does not address the **need for a Climate Change Act** casts doubt on how serious the federal government is about the ambitious implementation of the Climate Action Plan².

¹ WWF and other environmental NGOs have advocated for a target of „at least minus 95 %“ reduction in greenhouse gas emissions by 2050 relative to 1990. This wording is not part of the Climate Action Plan. However, the wording of “greenhouse gas neutrality” or “far-reaching greenhouse gas neutrality” leads us towards reaching or exceeding the upper end of the goal range from the 2010 Energy Concept (minus 80-95 %). Thus, WWF will not focus on criticizing lack of ambition, but instead demand consequent and timely implementation.

² Germany is likely to miss its 2020 emissions reduction goal. This is the assessment of NGOs (http://www.wwf.de/fileadmin/fm-wwf/Publikationen-PDF/IZES-Klimaschutz_Zusammenfassung.pdf.pdf) as well as of

WWF welcomes the general messages of the Climate Action Plan: Guiding principles and transformative pathways, climate protection as a strategy to modernise our national economy. However, **a huge discrepancy exists between the general messages and the instruments level.** The current plan is to attach the Climate Action Plan 2050 to a programme of measures quantified in terms of their reduction impact which ensures that the 2030 target is attained. The programme will be adopted in 2018. Consequently, the resulting packages of measures would have to be consistently aligned with the general messages and close the gap with the target level. The contradictions present today would have to be eliminated and the existing measures supplemented.

Particularly incomprehensible are the significant shortcomings of the Climate Action Plan with respect to the measures related to the phase-out of coal-fired power generation by 2035³ and to the increase in the targets for the expansion of renewables.

The Commission on Growth, Structural Change and Regional Development can make a key contribution to identifying effective measures. The involvement of civil society organisations must be ensured from the outset to capture the concerns of the stakeholders affected, to incorporate comprehensive specialist expertise and, not least of all, for reasons of transparency and participation. The Commission should begin its work in this legislative period.

For the industrial sector, the Climate Action Plan sets the wrong course. **The proposal for the European Emission Trading Scheme (ETS) outlined in the Climate Action Plan is counterproductive.** It proposes that industrial installations should continue to be given free CO₂ allowances until at least 2030. The Climate Action Plan thus continues to adhere to old emissions-intensive industrial processes and is not suitable for bringing about the transition to low carbon processes. From WWF's standpoint, the Climate Action Plan lacks credibility in this section and runs contrary to the self-imposed goal of far-reaching greenhouse gas neutrality.

The Climate Action Plan does not contain a specific approach for actively integrating the **capital market and the actors of the financial market**, such as banks, insurance companies, company pension schemes, into the transformation. Financing and investment decisions, particularly in the private financial sector, however, are essential for ensuring that the shift to carbon-free processes and products is mainstreamed. The significance of this is addressed and explicitly accepted, but virtually no concrete proposal presented.

business-oriented evaluators such as McKinsey (<https://www.mckinsey.de/energiewendeindex>). However, there is no obligation to act. Even if the target is missed, there will be no consequences.

³ See here WWF position on the coal phase-out in Germany: http://www.wwf.de/fileadmin/fm-wwf/Publikationen-PDF/WWF_Report_Germanys_Electric_Future_-_Coal_Phase-Out_2035_-_Summary.pdf

Goals and binding nature of the targets

Targets consistent with the Paris Agreement: Germany must reduce greenhouse gas emissions by at least 95 percent by 2050. The targets laid down in the federal government's Energy Concept (2010) are to be viewed as minimum targets because the Paris Agreement requires an increased level of ambition. The wording "far-reaching greenhouse gas neutrality" leads towards at least meeting the upper range of the Energy Concept targets. The federal government should therefore review accordingly the decade targets for 2030 and 2040 in the Climate Action Plan. WWF is in favour of a greenhouse gas reduction target of minus 60 per cent for 2030 and minus 80 percent for 2040.

Consistent sectoral targets: To achieve the targets, all sectors of the economy must make sufficient contributions. Sufficient contributions are the result of budgetary logic: this means that separate budgets and reduction paths are derived for all relevant economic sectors from the total German emissions budget. This gives rise to binding sectoral targets per decade. WWF welcomes the fact that sectoral targets on federal level have been formulated in the Climate Action Plan for the first time.

Binding nature not established through transposition into law: It is the WWF's view that the key points mentioned above must be embedded in a Climate Change and Energy Transition Act.⁴ This is the only way to establish the binding nature of the targets so that they can fulfil their function as a robust framework for a transformative process over several decades. In addition, the development and subsequent adjustment of instruments contained in the Climate Action Plan form part of the statutory regulation designed to ensure that measures are deployed flexibly to attain goals and targets. A Climate Change Act must also include a transparent monitoring. To this end, the federal government must set up a comprehensive monitoring system broken down by sector and publish an annual progress report. An independent Climate Change Commission needs to track progress in target attainment and advise the federal government on climate policy and the further development of measures. The sectoral emission reduction targets are to be the responsibility of the respective federal ministries, meaning that the responsibility for target achievement would no longer lie solely with the Environmental Ministry. Instead the department responsible for the corresponding sector would be responsible for drafting packages of measures as well as ensuring the availability of the resources needed to achieve the targets.

EU targets are considered minimum targets: WWF welcomes the federal government's appeal to review EU climate targets "in light of the concrete global long-term goals formulated in the Paris Agreement". Also a welcome development is the explicit reference to the EU 2030 target as a minimum target that "gives room for an increase", and to the necessary review of the medium-term target "before 2020 on the basis of scientific analysis". WWF calls for an EU reduction target of at least minus 55 per cent for 2030.⁵ Unfortunately, in the area of EU energy policy Germany only commits to targets that have already been adopted within the 2030 EU Climate & Energy Package: a 27 percent target for renewable energy and a 30 percent target for energy efficiency. Renewable energy and energy efficiency are the backbone of a European energy transition. From WWF's point of view, these targets need to increase to 45 percent for renewables and to 40 percent for efficiency.

⁴ http://www.wwf.de/fileadmin/fm-wwf/Publikationen-PDF/Gutachten_Klimaschutz_und_Energiewendengesetz_KEnRaG.pdf

⁵ See also the WWF EU 2030 carbon calculator at: <http://www.2030carboncalculator.eu/>

Energy sector

The long-overdue commitment to phase-out coal-fired power generation by 2035 and accelerate the expansion of electricity generation from renewable energies is missing from the document. In the Climate Action Plan, there is no clear mentioning of a coal phase-out. With respect to the pace of expanding electricity generated from renewable energy sources, the last reform of the Renewable Energy Sources Act (EEG) is even referred to. This, however, slowed down expansion and therefore contradicts the overarching objectives and messages of the Climate Action Plan.

WWF expressly criticises the federal government for delaying action on this issue. The need to take action was recognised in the overarching messages and guiding principles. Yet the alarming level of backpedalling taking place at measure level calls the credibility of the Climate Action Plan into question. It is essential that the federal government still delivers in this area during the current legislative period (ending September 2017). The two key measures for bringing about a transformation to a greenhouse gas neutral economy and society must be clearly identified and structured in line with the following goals:

- **Phase-out of coal-fired power generation by 2035**
- **Accelerating the expansion pace of electricity generation from renewable energy.**

The primary measure to phase out coal must be to decommission, in particular the oldest, emissions-intensive, lignite-fired power plants no longer subject to debt servicing as quickly as possible. The end of coal-fired power generation in Germany by 2035 means a stop for any extensions or new exploration of open-pit lignite mines.

The measure "Development of renewable energies" found on page 33 should be changed to "Acceleration of the expansion of renewable energies". The expansion pace of renewables is currently much too slow. The expansion corridor is still based on the expansion targets defined in the 2010 Energy Concept. This expansion pathway is also inadequate given the old assumptions of stagnant or declining demand for power. The renewable targets must be significantly increased to meet the ambition level of the Paris Agreement. This is particularly true in the context of the need for cross-sectoral electrification. From WWF's perspective, an annual net additional quantity of 2,500 MW of onshore wind energy and photovoltaics in accordance with the Renewable Energy Act (EEG) 2014 represents a minimum target in terms of climate and energy policy.⁶

The **high importance of energy efficiency** is not sufficiently underpinned. A reference is only made to the Green Paper on Energy Efficiency and the National Action Plan for Energy Efficiency (NAPE). The measures contained in the NAPE will not, however, reduce energy consumption to the necessary extent and their implementation lags behind the original timeline.

⁶ http://www.wwf.de/fileadmin/fm-wwf/Publikationen-PDF/WWF-Stellungnahme_zum_EEG-Referentenentwurf_2016.pdf

European Emission Trading Scheme (ETS)

Contradictory to the general statement in the Climate Action Plan that the **EU ETS** must be strengthened, the list of concrete proposals actually further undermines the system. WWF therefore dismisses this part of the Climate Action Plan as counterproductive.

The ETS has been experiencing a structural crisis since 2009. The continuously growing surplus of allowances on the market prevents the system from fulfilling its function: internalising the carbon costs in companies' expenditures to create incentives to invest in cleaner technologies or promote climate-friendlier operation of the existing installations.

Despite the first measures to fix it (backloading and establishment of a Market Stability Reserve (MSR) starting in 2019), the system will suffer from a significant surplus for the next ten years at least.

In July 2014, the European Commission published its proposals for the fourth phase of the Emissions Trading Directive (2021-2030). An important part is the regulations on what is known as carbon leakage. The Commission has proposed a firewall between industry and the energy sector: 57 per cent of the available ETS allowances should go to the energy sector and 43 per cent to industry ("industry cap"). Germany, on the other hand, proposes increasing this industry cap from 43 to 47.6 per cent in order to grant more free allowances for industry. In addition, a correction factor is to be scrapped and instead the "industry cap adjusted". This proposal would in effect mean that the industrial sector would get more free allowances once it had exhausted its own share. The "cap" element in the "cap & trade" system would therefore be removed. This gives industrial actors the confidence that they do not have to take part in the necessary emissions reductions efforts.

The elements on the ETS in the Climate Action Plan are therefore totally unsuitable.

Instead the federal government should work to bring about meaningful reforms to the ETS⁷, in particular through:

- A stricter linear reduction factor by at least 2.8 percent starting in 2021 (instead of 2.2 percent proposed by the EU Council and Commission);
- Permanent cancellation of the surplus;
- Ending free allocation and introducing auctioning as the standard method for allocation to industry. The preferential treatment due to carbon leakage should be concentrated on the sectors with the highest risk;
- The use of all auctioning revenues to finance climate protection and adaptation programs inside and outside of Europe.

Furthermore, considering that the ETS will not incentivise emissions reductions in the next decade, Germany (and other Member States) should introduce additional instruments at national level.

⁷ <http://www.caneurope.org/docman/emissions-trading-scheme/3029-can-europe-ets-reform-position-21-12-2016/file>

Buildings

In the building sector, the Climate Action Plan reinforces the existing goal of achieving **an almost climate-neutral stock of buildings by 2050**, but contains no concrete, effective proposals for measures. There is an urgent need for action in the area of buildings in view of the long service life and high investment costs.

WWF asks for the standard for new building to be raised and to require climate neutrality for new buildings starting in 2020. The current stipulations in the Climate Action Plan postpone the timeline for climate neutrality for new buildings to 2030. This would mean that the new buildings built between now and 2030 would have to be refurbished again between 2030 and 2050. This is problematic for durable components (facade, roof). To protect citizens and companies from making bad investments in buildings with insufficient energy quality, the new building standards should require climate neutrality already in 2020.

WWF sees the need for effective measures, which could realistically increase the energy-efficient renovation rate to three percent annually by 2025. The Climate Action Plan postpones development of instruments until “2030 at the latest”. For many years already, there have been calls for a renovation rate of 2 percent for existing buildings. This stipulation was conservative, because it was based on the assumption that renovation ensures adherence of a currently renovated building to the targets for 2050 and the building would not have to be refurbished a second time before 2050 for energy efficiency and climate protection reasons. The renovation depths, however, generally did not fulfil this condition, and the renovation rate stagnated at just below 1 percent. As a result, there is already a massive backlog for renovating existing buildings. Delaying measures until 2030 will increase this backlog further. WWF, therefore, calls on the federal government to immediately develop and implement measures to increase the renovation rate, for example, to introduce the long overdue tax incentives to promote energy-efficient renovation.⁸

From the WWF's perspective, **energy efficiency** is of primary importance in the building sector. Capitalising on efficiency potential always **has to take precedence** over the electrification of heat generation. Otherwise the strain put on the overall system by the additional demand for renewable generation capacity and associated additional grid expansion could be too much. When heating with biomass, the limited potential for sustainably produced biomass must also be taken into consideration. In contrast, the Climate Action Plan puts energy efficiency and the use of renewable energy to achieve climate neutrality on equal footing. This stands in opposition to the lack of measures to increase the renewables target and to pick up the pace of grid expansion.

A generally welcome development is the approach pursued in the “**Sustainable Building**” measure. Although it is not clear because the measure is imprecise, WWF suspects that special consideration will most likely be given to wood as a renewable and potentially carbon-saving material in a sustainability assessment of materials for construction. In this context it is important that the impact on forests and biodiversity is also taken into account. Planting more conifers for economic use as a construction material would have a negative impact on the function of the forest as a carbon sink and on biodiversity. It is in the interest of sustainability to promote the natural cultivation and use of native hardwoods.

⁸ <http://www.finanzforum-energieeffizienz.de/praxishandbuecher-tools/ueberblick.html>

Mobility

Also in the case of the transport sector, the measure level does not adequately reflect the magnitude of the challenge: The transport sector is the only sector whose greenhouse gas emissions have hardly fallen since 1990. Now, according to the targets laid out in the Climate Action Plan, 98 million metric tonnes of CO₂ equivalents will be reduced over the next 13 years. This kind of “0 to 100” strategy requires resolute political action which is not evident at the instrument level in the Climate Action Plan. Of particular concern is the lack of concrete mobility measures in combination with the lack of an increased expansion target for electricity generation from renewable energy sources and a specific measure to accelerate grid expansion. As the transport sector can mainly be decarbonised through electrification, increased amounts of electricity from renewable energy sources is essential to meet the targets.

An example of a target-oriented stipulation would be a clear commitment to **emission limits for passenger cars and light commercial vehicles** of 65-68 g CO₂/km in 2025 and a maximum of 50 g CO₂/km in 2030. The federal government should promote rigorous updating of the emission limits for passenger cars and for ambitious efficiency targets for heavy commercial vehicles >3.5 t at EU level.

WWF supports the **promotion of electric mobility** and calls on the federal government to draft a strategy for road, sea and air transport that takes into account power-to-X fuels and limited potential of biofuels from waste and residual materials in the context of a cross-sectoral electrification strategy.

For other proposals, see the joint study “Klimafreundlicher Verkehr” (Climate-friendly transport).⁹

⁹ http://www.wwf.de/fileadmin/fm-wwf/Publikationen-PDF/Verbaendekonzept_Klimafreundlicher_Verkehr.pdf

Industry

In the industrial sector, it is important that the costs of greenhouse gas emissions and the costs of high energy consumption, particularly due to inflexible processes which cannot be adapted to the availability of renewable electricity, will be internalised in the expenditures of the companies responsible. This requires reforms to the European Emission Trading Scheme. To distribute the costs of the energy transition fairly, the exemptions for industrial companies must be reduced to a minimum.

WWF rejects the concrete proposals on the ETS outlined in the Climate Action Plan. From WWF's perspective, they are counterproductive and conflict with the goals of climate protection (see section "European Emission Trading Scheme" above).

The Climate Action Plan still lacks proposals to reduce exemptions in electricity price. According to WWF, the total costs - such as the sum of the stock market price and cost apportionment under the Renewable Energy Act (EEG) - must be taken into consideration to ensure that the cost optimisation measures are conducive to achieving goals. In particular, the federal government should:

- Define the sectors eligible for the "special exemption" in more detail
- Limit the exemption to power consumption-intensive companies
- Have power consumption-intensive companies participate in the EEG apportionment payment at least to the extent to which the expansion of renewable energy reduces the price of electricity (merit order effect)
- Intensify efforts to promote energy efficiency
- Not put renewable energy at a disadvantage vis-à-vis conventional consumption.

As a result of the counter-productive proposals on the EU ETS and the lack of measures to reduce the exemptions for the electricity price, **the wrong course is being set for the industrial sector**. It undermines the measures for research, development and market introduction of low-emission technologies stipulated in the Climate Action Plan because there are no political instruments that would improve the economic viability of new technologies over the old ones. The federal government is called on to create a **strategy to introduce low carbon processes to the raw materials industry** and identify promising measures in this strategy which will make it possible get closer to the introduction of new, low-carbon technologies.

WWF generally welcomes the "**Climate reporting for companies**" measure. For concrete proposals on the structure, please refer to the studies on climate strategy reporting in companies.¹⁰

WWF welcomes measures to extend the service life of products and strengthen closed-loop processes.

¹⁰ <http://klimareporting.de/>

Agriculture

WWF welcomes the guiding principles of reducing nitrogen surpluses, reducing emissions stemming from animal husbandry, expanding organic farming, restructuring agricultural subsidies and limiting food waste. From the WWF's perspective, one guiding principle that would contribute significantly to the reduction of agricultural emissions is missing, however: Changing consumer habits to consume less meat. Animal proteins have the biggest greenhouse gas footprint per kilogram when it comes to consumption. That is why **reducing the consumption of meat** is one of the most effective levers for lowering greenhouse gas emissions from agriculture.

At milestone and measure level, the agricultural chapter of the Climate Action Plan is insufficient or very vague. In WWF's view, it should be clarified as follows:

The **reduction of the nitrogen surpluses** in conventional crop production is one of the central levers for climate protection in the agricultural sector. WWF calls for nitrogen surpluses to be limited to below 50 kg N/ha by 2030. The target specified in the Climate Action Plan of 70 kg N/ha by 2032 is not enough and will, in WWF's view, not solve the problem of excess nitrogen.

The federal government should work to ensure that the resources for the development of rural areas are used more to **reorganise animal production**. It is also WWF's view that a maximum **number of animals** should be defined in areas with high livestock levels. Through targeted educational programmes and PR work, the federal government should work to change consumer habits, in particular, reducing meat consumption.

WWF welcomes the **expansion of organic farming** to 20 per cent of farmland. This must be achieved by 2030. The Climate Action Plan contains no information on a timeline.

The financing instruments of the Common Agricultural Policy (CAP) are key elements. In the Reform 2021, **agricultural payments** must be linked to soil protection, reorganisation of animal husbandry and other measures to reduce greenhouse gas emissions.

WWF welcomes the measure for the "**Prevention of food waste**" and supports the goal of halving food waste and loss by 2030. However, no specific policy instruments for implementation are identified.

The agricultural sector also urgently needs concrete and feasible options for action to be formulated with a quantifiable reduction impact in the package of measures announced for 2018 which will make it possible to realistically achieve the target for the sector.

Land use and forestry

WWF Germany welcomes the fact that the **sink functions of forests, grasslands and moors** are mentioned in the Climate Action Plan. However, a huge discrepancy also exists here between the overarching messages and the instrument level. Based on WWF's assessment, the measures described for forestry will not create significant additional carbon sinks (even when substitution effects are included).

To strengthen and protect forests and enhance their function as sinks, some previously managed forested areas must be left unmanaged (National Strategy on Biological Diversity, at least 5 per cent of forest land). **Protected forests with natural development** must be clearly identified as making a contribution to climate change and be given equal priority as sustainable use.

Outside of protected forest areas with natural development, **ecologically sustainable forest management** is needed that aims to develop naturally structured forest with rich reserves comprised of predominantly native tree species. The goal is not clearly laid out in the measures of the Climate Action Plan.

WWF supports the **cascaded use of native wood** in durable wood products first and in highly efficient combustion plants at the end of their lifecycles. Each time wood is extracted from forests, carbon is released. The footprint becomes much bigger when the product life span is shorter. The use of wood to produce energy and, among others, paper production from fresh fibres releases carbon as a result of the long-term reduction of the storage function of the forest, the carbon released through use of the forest, the energy consumed during processing and the rapid release of carbon by burning of wood or paper (only 73 per cent of paper was recycled in 2105). This use accounts for more than half of wood use in Germany. WWF agrees with the promotion of long-lasting wood products, other requirements for legal and sustainable forest management are not climate neutral. The Climate Action Plan should be modified accordingly in this area.

The preservation of carbon in organic soil, also of organic or peaty forest soil, can be addressed and implemented immediately on the basis of the existing practical knowledge relevant to climate. Additional research is to be welcomed. But the stipulation for more research should not overshadow the measures that are directly possible.

The measures in the Climate Action Plan should be supplemented and defined in more detail, in particular WWF calls for:

- Implementation of the target embedded in the National Biodiversity Strategy for natural forest development of 5 per cent of the forested areas
- Silvicultural restriction to the use of native tree species
- Development of ways to use long-lasting hardwood products
- Increase in the rotation intervals

Overarching goals and measures

The overarching goals and measures chapter focuses on financial/fiscal considerations and educational activities, which both would have effects across all sectors. WWF welcomes the statements on overarching goals and measures with the exception of the statements about the EU ETS (see above).

From WWF's point of view, however, concrete **proposals for the financial sector are lacking**. For example, transparency and information requirements for investment or financing portfolios are not specified concretely. They are the basic prerequisite for the management of capital flows in climate-friendly projects and companies. In this context, the risks of locked-in and ultimately stranded investments and asset values are mentioned, but no instrumentation is proposed. Risk-appropriate financing conditions will not be achieved like this, transformation risks in the sectors are still not a relevant criterion for the decision-making process. The federal government is therefore also giving up the opportunity to include and implement the results of international processes in Paris or at the level of the G20¹¹.

German investors and financial intermediaries such as insurance companies and pension funds have so far hardly taken account of the challenges of the transition and are not integrating appropriate risk positions in their portfolios. For many reasons, addressing the capital market would be important: to achieve the climate targets and prevent inappropriate risk positions in the system, e.g. company pensions.

The federal government would have the opportunity to contribute to the creation of innovative products and positive financial market dynamics, for example, if they create appropriate incentives for capital flows in pensions or address questions of the "green bond markets or green infrastructure financing" as a product class of the financial market and risk regulation. Ways must be sought for how to mobilise private capital to finance climate-friendly technologies. From WWF's perspective, it is a dangerous trend that the necessary financing relies almost entirely on government budgetary funds.

The measures outlined in the Climate Action Plan, on the other hand, are sending fatal signals to the financial market actors. The impression is given that climate policy management continues to be economically irrelevant, as, for example is the free allocation of carbon certificates to industry players. From WWF's point of view, there is an urgent need to resolve these inconsistencies and to appropriately and proactively use the central management function of the financial system in the Climate Action Plan. In almost all the relevant implementation fields of the Climate Action Plan, the financing component should also be considered. This includes, in particular, the management of pension benefits to federal employees in accordance with a way below 2-degree path under the rubric "Role model function of the federal government".

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¹¹ France, Energy Transition Law, §173, Specification for investors on the transparency of the climate impact of portfolios and the results of the task force on climate-related financial disclosure from December 2016 to the Financial Stability Board in the context of the G20