# Policy making by participation – the German Climate Action Plan 2050

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## Keywords

$CO_2$ reduction, climate action plan, climate policy, $CO_2$ reduction, long-term strategies, long-term policy, policy measures, participation, dialogue process

## Abstract

With regard to commitments under the Kyoto Protocol and the climate agreement reached at the climate conference in Paris, Germany has set a national goal for the reduction of greenhouse gas emissions of 80 to 95 percent by 2050 compared with 1990. In order to enforce the achievement of this long-term target, Germany adopted a first Climate Action Plan 2050 in December 2016. In order to increase acceptance for this long-term energy and climate strategy in society and business, the Federal Government launched – for the first time – a broad-based participatory process. In several rounds of dialogue between June 2015 and March 2016, Federal states, municipalities, associations and citizens could actively participate in the development of the Climate Action Plan 2050. In the course of the dialogue process, the participants worked out a large number of policy measures covering five action areas: 1) Energy Sector 2) Industry and Services 3) Buildings 4) Transport 5) Agriculture and Land use. The final outcome of the dialogue process was the so-called "Measure set 3.1", which contains a proposal of around 90 policy measures in the five action areas, which are described in detail. This measure set was the basis for the formulation of the Climate Action Plan 2050 by the Federal Ministry for the Environment (BMUB), which was mandated by the Federal Government to develop this plan and to coordinate and consult on it with other government departments. In our paper, we first of all analyse and evaluate the importance of the dialogue process as a new approach of long-term policy making. Secondly, we analyse the actual contribution of the preceding dialogue process to the following political process which was finally deciding on the Climate Action Plan 2050. One main conclusion is that the dialogue process itself was a success and the starting point for a new type of policy making, which takes more into account the views both of the relevant stakeholders and the citizens. This may also help to increase the public confidence in future climate policy, even if the actual contribution of the dialogue process on the contents of the final Climate Action Plan 2050 was smaller than intended in the beginning.

## Introduction

With its Energy Concept from September 2010 and the decisions from summer 2011, Germany initiated a far-reaching transformation of its energy system, the so-called "Energiewende" meaning "energy transition" (BMWi and BMU 2010). Alongside intensifying the use of renewable energies, reducing energy consumption by increasing energy efficiency is a key pillar of the Energiewende. The Energy Concept also includes ambitious energy efficiency and climate targets for Germany. The overall energy efficiency target demands a reduction of primary energy consumption of 20 % by 2020 and 50 % by 2050 (compared to the base year 2008). The German reduction target for greenhouse gas (GHG) emissions amounts to 40 % in 2020 and 80–95 % in 2050 (both compared to the base year of the Kyoto target, 1990). However, in 2014 a remaining shortfall to meeting the primary energy target in 2020 was identified to be around 10 to 13 % of the total goal based on current forecasts and an extrapolation of the statistical development of primary

energy consumption observed up to 2013 (Fraunhofer ISI et al. 2014). This is equivalent to an additional necessary decrease in primary energy consumption between 1,440 and 1,870 PJ. At the same time, the remaining gap to the GHG emissions reduction target for 2020 was estimated to be around 6–7 % (with an error margin of ±1 %; EWI et al. 2014).

In order to fill the short-term gap to the national energy and climate targets up to 2020, the German Federal Ministry for the Environment, Nature Conservation, Buildings and Nuclear Safety (BMUB) presented a "Climate Action Programme 2020" in early December 2014 (BMUB 2014). It includes a set of new policies for the energy sector, building and transport. At the same time, the German Federal Ministry for Economic Affairs and Energy (BMWi) presented the "National Action Plan on Energy Efficiency" (NAPE) (BMWi 2014), which is also part of the Climate Action Programme 2020. The NAPE includes new and further developed policy measures to increase energy efficiency in buildings, industry and the service sector.

Apart from the new policies in order to fill the gap to the 2020 targets, the Climate Action Programme 2020 (BMUB 2014) also announced the development of a long-term strategy for meeting the energy and climate targets for 2050. A national "Climate Action Plan 2050" was finally adopted by the German government in November 2016. The Climate Action Programme 2020 (BMUB 2014) already outlined the parameters and timetable for drawing up the Climate action Plan 2050:

- The plan should set out the interim targets already adopted for the post-2020 period, which are essential to meeting the long-term climate target and describe the next specific reduction steps in view of the European and international climate.
- The Plan should be updated at regular intervals based on a regular monitoring of the measures adopted.
- The German government planned to set up a broad dialogue and participation process with the Länder and local authorities, and with the private sector, stakeholder organisations (churches, associations and trade unions), but also to invite direct public participation for the first time. The results of this dialogue process should serve as the main basis for the development of the Climate Action Plan 2050.

Stakeholder participation like the mentioned dialogue process is an increasingly applied method for decision making processes in environmental political context. It is seen as a suitable way to deal with the typical complexity, uncertainty and multi-scale effects of issues which require the acceptance of multiple actors and agencies (e.g. Stringer et al., 2007; Stringer and Reed, 2007). Ideally, such methods allow the inclusion of ideas and perspectives in an early stage, which increases the likelihood that all interests and needs can be met (Dougill et al., 2006). The integration of multiple perspectives allows decisions which are perceived as more fair and holistic (Richards et al., 2004) and may also promote social learning (Blackstock et al., 2007). Although there is evidence that stakeholder participation can enhance the quality of decisions, the quality strongly depends on the process leading to them (Reed, 2008). Carnes et al. (1998), Reed (2008) and Schroeter (2016) point out the characteristics of best practice stakeholder participation, highlighting aspects such as inclusiveness, equal contribution within a philosophy of trust and equity, acceptance of the process as legitimate, clear objectives and a common understanding of the process and the integration of local and scientific knowledge. To be most effective, the participation should be integrated at an early stage and continuously into the decision-making process (Richter et al., 2016; Schroeter et al., 2016).

In our paper, we will first of all analyse and evaluate the broad dialogue process as a new approach of long-term policy making. However, the dialogue process on the Climate Action Plan 2050, which was initiated in Germany, does not mean that the participants in the process also decide on the plan. The plan is still the result of a political decision process following the public dialogue. Therefore, in a second step we analyse the actual contribution of the preceding dialogue process to the following political decision process on the Climate Action Plan 2050, which was finally adopted by the German Government on 14 November 2016 (BMUB 2016a, b).

The remainder of our paper is organised as follows. The following section describes the organization and the results of the public dialogue process. We then describe how the dialogue process and other scientific foundations were taken into account in the political decision process on the Climate Action Plan 2050. Afterwards, the key messages of plan itself are summarized. In the final section we discuss the successes and failures of the dialogue process and critically discuss if the Climate Action Plan 2050 is sufficient to reach the ambitious greenhouse gas reduction target or 80 % or even 95 % in Germany in 2050.

## Methodological Approach: The Dialogue Process

As already mentioned above, the main parameters and timetable for the dialogue process accompanying the development of the Climate Action Plan 2050 were outlined in the Climate Action Programme 2020. They were then specified in a policy paper of the Ministry in charge, the German Federal Ministry for the Environment, Nature Conservation, Buildings and Nuclear Safety (BMUB) (BMUB 2015).

In the following, the main stages of the dialogue process are presented, mainly based on information from the official website[1] and a report commissioned by Greenpeace which analyses and evaluates the dialogue process (Rucht 2016).

The whole dialogue process, which was relevant for the preparation of the Climate Action Plan 2050, took place between June 2015 and March 2016. A final conference, which took place on 16 February 2017, only had a formal character, since the plan was already adopted in November 2016. The dialogue process was divided into two sub-dialogues:

- A stakeholder dialogue, addressing representatives of three groups of stakeholders – federal states, municipalities and associations – in separate fora.
- A citizens dialogue, addressing all German citizens both in an online dialogue open for everyone and in an on-site dialogue in five German cities with around 500 citizens, which were recruited by an independent institute and which should be representative for the population in Germany (for more details see Bürgerreport 2016).

1. http://www.klimaschutzplan2050.de/en/

**Table 1. Stages of the public dialogue process in chronological order.**

| |
|---|
| **Policy paper by BMUB from 9 June 2015**<br>This impulse paper was published for the launch of the participation and dialogue process. It outlines the starting situation and the possible elements of the Climate Action Plan 2050 and the concept for public participation. |
| **Kick-off Conference on 25/26 June 2015**<br>The Kick-Off Conference, which was organized by BMUB, laid the foundation for participation in the fora for different target groups. It also included a discussion on the five key action areas. |
| **Dialogue phase from September to November 2015**<br>In this phase, the three groups of the stakeholder dialogue met in separate fora. In addition, the citizens' dialogue took place in five cities at the same day with around 500 citizens participating. The target of all meetings was to discuss the transformation pathways for the different action areas, and to collect policy measures to achieve the objectives set for the Climate Action Plan 2050. On the whole, around 400 policy measures were proposed in the stakeholder fora and additional 77 measures for climate protection came from the citizens' dialogue. All these measures were consolidated and bundled by the scientific accompanying research. In all fora and in the citizens' on-site meetings, the participants also chose delegates, which should represent the different groups in the Committee of Delegates. For the stakeholder dialogue, a second round of fora was organized. These events aimed to deepen the revised and consolidated set of strategic measures and to propose additional cross-cutting measures covering all action areas. |
| **Meetings of the Committee of Delegates**<br>Within the dialogue process, three meetings on the delegates, which were chosen during the dialogue phase (see above) took place in November 2015 and January and March 2016. The first meeting took place without the citizens' delegates. These meetings aimed at the consolidation of the proposed measures for the five action areas and the cross-cutting measures in a so-called "measure set". The consolidation was based on the criteria for a "strategic measure" which were formulated for the Climate Action Plan 2050 in the beginning of the dialogue process. A strategic measure clearly defines actors, time schedules and to-do's, delivers a significant contribution to the achievement of the climate targets, is mainly directed at the Federal level and also takes into account the EU and international level. At the last meeting of the delegates on 18/19 March 2016, a final "Measure Set 3.1" was finally discussed and officially handed over the Federal Minister for Environment, Nature Conservation, Building and Nuclear Safety, Barbara Hendricks. |

*Source: Own compilation based on http://www.klimaschutzplan2050.de/en/.*

Both processes were organised by independent institutes specialized on public dialogue processes and scientifically accompanied by two research projects on behalf of BMUB. The public discussion process and the scientific support was organised around the five key action areas, which were already identified in the Climate Action Plan 2020 as crucial in the process to achieve the domestic climate targets in line with the with the climate agreement reached at the climate conference in Paris at the end of 2015 (United Nations 2015). These areas of action are:

1. Energy
2. Buildings
3. Transport
4. Trade & Industry
5. Agriculture & Forestry

Table 1 shows the different stages of the whole dialogue process in chronological order. For all stages, a detailed documentation of the results are open to the public. In the course of the process, the two sub-dialogues and the three stakeholder groups more and more moved toward each other by the election of delegates, which came together in common meetings.

## Results and Evaluation

### OUTCOME OF THE DIALOGUE PROCESS

The key result of the dialogue process was the so-called "Measure Set 3.1" (Dialogprozess 2016) which was handed over the BMUB at the third meeting of the Committee of Delegates in March 2016. It includes a detailed description of 89 strategic measures in the five areas of action, i.e. Energy (21 measures), Trade & Industry (14 measures), Buildings (12 measures), Transport (17 measures) and Agriculture & Forestry (14 measures) as well as 11 cross-cutting measures covering all sectors. All measures are clearly described according to the pre-defined criteria for a strategic measure (see Table 1). The measure descriptions also include the feedback from the three groups of stakeholders and the citizens and a scientific evaluation made by the accompanying research. Therefore the report contains a wealth of information on a broad set of possible instruments to reduce energy consumption and GHG emissions. It also reflects the often different views of different groups of stakeholders and the citizens on different types of policy instrument.[2]

Another product of the dialogue process was a separate report on the citizens' dialogue, which was already published in January 2016 (Bürgerdialog 2016). It includes the key messages of the five citizens' fora which took place on 14 November 2015 in five German cities. It also contains a "Top 10" list of new climate policies for Germany from citizens' perspective (see Table 2). The choice shows high preferences for product and agriculture policies, decentralisation and regionalisation of the energy system and for incentives as an policy instrument.

### EVALUATION OF THE DIALOGUE PROCESS

According to the relevant literature (Schroeter et al. 2016, Carnes et al. 1998, see also, Reed 2008, Gauthier et al. 2011, MacArthur 2016, Schweizer et al. 2016), public participation

2. Unfortunately, the "Measure Set 3.1" is only available in German language.

**Table 2. "Top 10" list of new climate policies for Germany from citizens' perspective.**

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|---|
| 1. EU-wide Network for renewable energies |
| 2. Labelling of products according to their "ecological footprint" |
| 3. Decentralisation of energy generation and distribution |
| 4. Agricultural turnaround – regional and ecological agriculture as a key for successful climate protection |
| 5. Tax incentives for climate-friendly transport |
| 6. Taxation of all transport modes by their total energy balance |
| 7. Banning of long distance freight transport from roads |
| 8. Incentives for long-lasting products |
| 9. Support of ecological agriculture |
| 10. Decentralisation and regionalisation of the energy system |

*Source: Bürgerdialog 2016, p. 4 (translation by author).*

processes should be assessed according to the following success criteria (Table 3):

A first evaluation of the dialogue process for the Climate Action Plan 2050 (Rucht 2016), which was mainly based on 23 interviews with involved actors from all groups (several stakeholders, citizens, accompanying research institutes) brought the following results with regard to the first two success criteria mentioned in Table 3 (inclusiveness of the process and information exchange and learning):

- The whole process was evaluated very positive, even if some single problems were mentioned by the respondents.
- The tasks and timetable for the dialogue process, which was already outlined in the Climate Action Programme 2020, was fully met (though only in the dialogue process, but not in the following political decision process; see below).
- The broadness and openness of the process with regard to the number of stakeholder groups and citizens' involvement was assessed as very positive especially in the beginning. A narrowing in the course of the process by the selection of delegates was regarded as necessary in order to ensure the effectiveness of the process.
- With regard to the "democracy" of the process, i.e. if all stakeholders and citizens equally contributed, the picture is mixed. Problems especially occurred within the stakeholder group of associations, were the some large industrial associations tried to claim a broad representativeness at the expense of smaller groups. In the citizens' dialogue, educationally-deprived groups and young people were clearly underrepresented, even if some (unsuccessful) efforts were made to increase the share of young citizens.
- The dialogue process was fully transparent, since all steps were explained in advance and publicly documented on the website afterwards (see above).
- The external moderation of the process by experienced institutes was assessed as fair and good or very good by the majority of the respondents.

The success with regard to the third success criterion, the effect of the dialogue process on the development of the Climate Action Plan 2050, will be analysed in the following section.

## Application of results: The Climate Action Plan 2050

### AIMS AND FOUNDATIONS

The development of the Climate Action Plan 2050 itself started directly after the dialogue process was closed with the third meeting of the Committee of Delegates in March 2016. The ministry in charge was BMUB. However, an inter-ministerial coordination was necessary in the course of the process.

As stated in the initial policy paper (BMUB 2015), the Climate Action Plan 2050 should contain the following three elements:

1. It should develop concrete guiding principles for five areas of action for 2050.

**Table 3. Success criteria and indicators of dialogue processes.**

| Success criteria | Sub-criteria | Exemplary performance indicator |
|---|---|---|
| Inclusiveness of the process | All relevant stakeholder groups represented in the process and is there an equal contribution | All identifiable stakeholder groups have taken part<br>All participants have the chance to share their opinions |
| Information exchange and learning | Exchange of knowledge, common base of information and transparency | Process is legitimated by the stakeholders<br>Understanding of each others' concerns<br>Trust and confidence in the decision makers<br>Process and steps are explained in advance |
| Effects of public participation on the political decision-making process | Effectiveness/ efficiency and a common understanding of impact of results | Key decisions are improved by process<br>Results are accepted by participants |

*Source: Compilation by authors based on Schroeter et al. 2016, Carnes et al. 1998, Reed 2008, Gauthier et al. 2011, MacArthur 2016, Schweizer et al. 2016.*

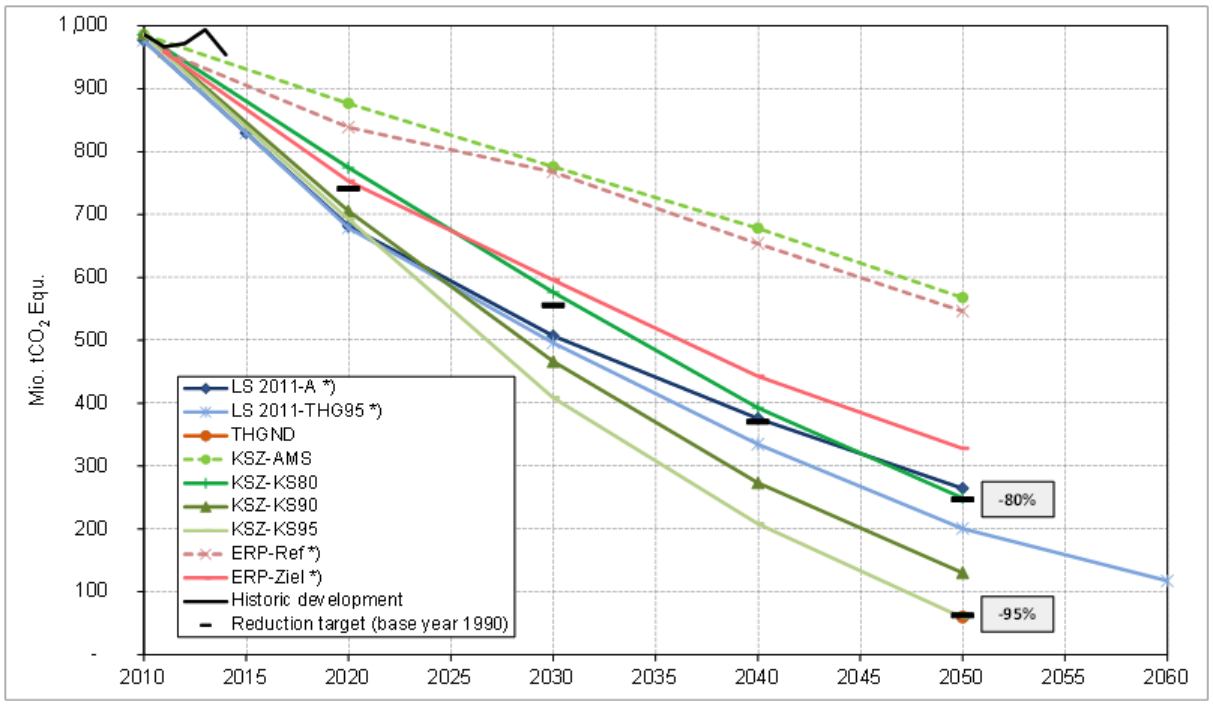


*Figure 1. Development of total greenhouse gas emissions. Source: Öko-Institut et al. 2015.*

2. It should outline transformative paths for all areas and sectors, look at critical path dependencies, and present interdependencies between different fields of action.
3. It should specify concrete reduction steps and measures for the 2030 interim target in particular.

The following two sources should serve as a foundation:

- Within a scientific accompanying project, transformative paths for all sectors until 2030 and 2050 were derived from a comparison of existing GHG emission scenarios for Germany (Öko-Institut et al. 2015).
- The "Measure Set 3.1" should serve as a basis for the design of policy measures for meeting the 2030 interim target in particular.

Figure 1 shows the development of GHG emissions in Germany until 2050 in different scenarios. One main conclusion from the scenario comparison was that especially for scenarios aiming at reaching the upper 95 % reduction target, the interim targets which were set for 2030 and 2040 in the energy concept, are too low (Öko-Institut et al. 2015). This means that more ambitious targets, also at the sectoral level, are needed for 2030.

## RESULTS

On 14 November 2016, the German cabinet finally adopted the Climate Action Plan 2050 (BMUB 2016 a,b).

Key elements of the plan are:

- Long-term target: based on the guiding principle of extensive greenhouse gas neutrality in Germany by the middle of the century.
- Guiding principles und transformative pathways as a basis for all areas of action by 2050.
- Milestones and targets as a framework for all sectors up to 2030.
- Strategic measures for every area of action.
- Establishment of a learning process which enables the progressive raising of ambition envisaged in the Paris Agreement.

A key element of the Climate Action Plan 2050 are the sectoral GHG emission reduction targets for 2030 shown in Table 4. These were controversially discussed within the inter-ministerial coordination process, both with regard to the need for these targets in principle and to the level of these targets. The result shown in Table 3 was a compromise, which was only found shortly before the adoption of the plan.

The Climate Action Plan 2050 also contains a set of strategic measures addressing all action areas, as e.g. (BMUB 2016 a,b)

- A roadmap towards an almost climate-neutral building stock has been drawn up for the buildings sector. This will be done through ambitious standards for new buildings, long-term renovation strategies and the gradual phase-out of heating systems based on fossil fuels.
- A climate strategy for transport including alternative drive technologies, public transport, rail transport, cycling, walking and a digitalisation strategy.
- For industry, the German government will launch a research, development and market introduction programme aimed at reducing climate-damaging emissions from industrial processes, which are currently considered unavoidable.
- In agriculture, nitrous oxide emissions from over-fertilisation are to be significantly reduced. Furthermore, in Brussels, Germany will advocate that EU agricultural subsidies take EU climate policy decisions into account. Mitigation potential is generally limited in the agricultural sector.

**Table 4. Sectoral GHG emission reduction targets for 2030 in the Climate Action Plan 2050.**

| Area of action | 1990 *(in million tonnes of $CO_2$ equivalent)* | 2014 *(in million tonnes of $CO_2$ equivalent)* | 2030 *(in million tonnes of $CO_2$ equivalent)* | 2030 (reduction in % compared to 1990) |
|---|---|---|---|---|
| | | | | |
| Energy sector | 466 | 358 | 175 – 183 | 62 – 61 % |
| Buildings | 209 | 119 | 70 – 72 | 67 – 66 % |
| Transport | 163 | 160 | 95 – 98 | 42 – 40 % |
| Industry | 283 | 181 | 140 – 143 | 51 – 49 % |
| Agriculture | 88 | 72 | 58 – 61 | 34 – 31 % |
| Subtotal | 1209 | 890 | 538 – 557 | 56 – 54 % |
| Other | 39 | 12 | 5 | 87% |
| **Total** | **1248** | **902** | **543 – 562** | **56 – 55 %** |

*Source: BMUB 2016b, p. 4.*

- For land use and forestry, which are not included in the assessment of climate target achievement, focus is on the preservation and improvement of carbon sequestration through carbon sinks in forests. Additional measures include sustainable forest management and use of wood, the preservation of permanent grassland, the protection of moorland and the use of the climate potential of natural forest development.

However, compared to the very detailed specification of the 89 measure proposals in the Measure Set 3.1 (see above), the formulation of the strategic measures for all action areas is much more general and weaker in the Climate Action Plan 2050. This was a result of the inter-ministerial coordination process following the public dialogue process. Whereas the first draft of the plan which was only developed by the leading ministry BMUB still contained many elements from the Measure Set 3.1, though the strategic measures were formulated in a more general way. The following drafts, which partly became public by "leaking", removed more and more from the strategic measures developed within the public dialogue process.

At the beginning of the dialogue process, there was also the promise of the BMUB to comment on how the proposed measures of the dialogue process were incorporated in the Climate Action Plan 2050 plan. However, at the final conference, which took place on 16 February 2017, this hope was removed. The reason was that between the Federal ministries, which were involved in the political decision process, no agreement could be established on this issue. The lack of transparency after the public dialogue, which was closed with the handing over of the "Measure Set 3.1", was especially criticized by the delegates of the citizens at the final conference. Whereas the dialogue process itself was looked upon as really transparent until the Measures Set 3.1 was handed over to BMUB, this transparency was lacking afterwards.

## Discussion and Conclusions

Looking at the whole process and its results, we first of all conclude that the dialogue process itself was a success and the start of a new type of policy making, taking more into account the views both of the relevant stakeholders and the citizens. Especially with regard to the criteria "inclusiveness" and "information exchange and learning", the public dialogue process accompanying the Climate Action Plan 2050 can be regarded as successful. It was probably helpful that some experience could be used from similar processes at the level of some Federal states (Schroeter et al. 2016). This may also help to increase the public confidence in future climate policy, even if the actual contribution of the dialogue process on the contents of the final Climate Action Plan 2050 was smaller than intended in the beginning. This was mainly due to different views in the involved ministries and lobbying activities especially by some industrial associations, who also doubted the need for such a broad dialogue process. As a result, both the ambitiousness of the sectoral targets for 2030 and the strategic measures for each of the action areas were weakened during the coordination process. It also led to a later adoption of the final plan than originally planned.

Nevertheless, the existence of sectoral targets for 2030 and of strategic measures for each sector, even if they are more general than many participants in the dialogue process may have expected, are a valuable basis and a first step for achieving the ambitious GHG emission target for 2050 in Germany. At the final conference, BMUB underlined its willingness to continue the public discussion of the Climate Action Plan 2050 in future, when the plan will be adapted.

Nevertheless, in order to achieve the 2050 GHG reduction target, further steps will have to follow. As recent studies with the time horizon 2050 show (Öko-Institut and Fraunhofer ISI 2015, Fraunhofer ISI et al. 2016), a 95% reduction of greenhouse gas emissions in Germany in 2050 requires the highest degree of decarbonisation in all sectors. This also means that all technical reduction potentials have to be almost fully ex-

ploited. This also includes some measures which are unpopular from today's view. Therefore, public acceptance of the necessary transformation process is crucial for achieving such a high level for decarbonisation. Such a broad dialogue process as it was organised in Germany for the Climate Action Plan 2050 can play an important role in increasing the acceptance of the necessary changes.

In addition, a 95 % reduction of greenhouse gas emissions in Germany can probably not be achieved without a common procedure in Europe and even worldwide. Without that, carbon leakage by shifting the production of electricity and energy-intensive products in other countries cannot be prevented.

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## Acknowledgements

This paper is partly based on a research project funded by the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMUB). We thank the panel leader and an anonymous reviewer for their helpful comments.