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**OSW REPORT**



# **THE LEADER IS GASPING FOR BREATH**

## GERMANY'S CLIMATE POLICY

Michał Kędzierski, Rafał Bajczuk

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## MAIN POINTS

- In the last decade, Germany's climate policy was ineffective and the activities carried out by successive governments were inconsistent with their initial declarations. The federal government lacked the determination to implement solutions aimed at accelerating the energy transition, which could potentially target the interests of influential industrial, business and social groups.
- Germany's domestic problems with achieving its planned emissions reduction by 2017 resulted in it adopting a highly cautious approach at the EU level. In the wake of a series of decisions by the new CDU/CSU-SPD government, intended at halting the EU's more ambitious climate policy, Germany was accused of blocking this policy and Angela Merkel's reputation as "the climate chancellor" was undermined. This was a meaningful change due to the fact that, instead of positioning itself as an active leader, Berlin took up the inconvenient role of an actor responding to external initiatives.
- Pressure from the public is the key factor boosting the leadership's determination to carry out activities in the field of climate policy. For several years, the German public has viewed environmental protection and global warming as issues of major significance. A considerable increase in the importance of climate change for German society, which was recorded in 2018–2019, has translated into increased levels of support for the Green Party – in 2019 it doubled to more than 20%.
- Germany's energy transition is facing a number of serious challenges. Attaining the mid-term target involves a 55% reduction in emissions by 2030 (in comparison to 1990 figures) and will mainly require activities in four key areas which are likely to ensure tangible results in the coming decade. These areas involve: a gradual phase-out of brown coal and hard coal from the energy sector; launching efforts to reduce emissions in the transport sector; increasing energy efficiency; accelerating the expansion of Renewable Energy Sources combined with their integration into the electricity grid. In 2019, the ruling CDU/CSU and SPD parties adopted the 2030 Climate Action Programme – a document containing a package of instruments developed for sectors such as transport, buildings, agriculture, energy and industry, with the aim of ensuring that Germany attains its planned 2030 emissions reduction targets.

- Regardless of the problems with its energy transition, Germany considers itself to be at the forefront of global climate protection actions and is making every effort to maintain this reputation. German political and business elites frequently express their conviction that their country is able to be the leader in climate policy and in the transition to green sources of energy. Both the ruling CDU/CSU-SPD coalition and the Green Party (which has aspirations of ruling the country) are proud of the fact that Germany is simultaneously phasing out nuclear and coal-based energy. They present this fact to their voters and to the global public as proof of Germany's ambition and its ability to set a good example.
- In its fight against global warming, Germany has found a new way of promoting and expanding the green technology sector. Berlin is promoting these technologies as a way of combating the increase in emissions both through its domestic energy transition and internationally. The popularisation of these technologies is viewed as a potential impetus to the modernisation of Germany's economy and to ensuring its competitiveness in the future. Germany is hoping that the recently increasingly popular climate policy (in particular the intention to decarbonise successive sectors of the economy) will facilitate other countries' turn to energy transition and their search for solutions to reduce emissions, and will boost their readiness to invest in this field. This, in turn, will likely create new expansion opportunities for German companies operating in the green technology sector.

## INTRODUCTION

For years, Germany has claimed to be the leader of the global climate policy and continued to raise the issue of global warming on the international forum. In addition, Germany is associated all over the world with the energy transition and turning to renewable energy sources. The German word for this process, *Energiewende*, has now become a permanent entry in the glossary of terms used by energy professionals. For several years, Germany has actively promoted its energy transition and presented it as an example worth emulating.

Since the last decade, Germany's ambitious goals and its 'green' image have increasingly clashed with numerous problems accompanying the transition and with an absence of progress in eliminating greenhouse gas emissions. Germany has become less credible in climate talks and its role as a leader in the fight against global warming has been undermined. Both the domestic and the European media have started to call Germany a 'brake' on an ambitious climate policy.

The first chapter of this report discusses the beginnings of Germany's involvement in international climate policy and its successful reduction of greenhouse gas emissions achieved back then. The second chapter discusses the negative impact of the energy transition (abandoning nuclear energy in particular) on Germany's climate policy, recorded in the last decade. The third chapter presents the key challenges faced by *Energiewende* in the context of eliminating greenhouse gas emissions and of the adopted 2030 reduction target. The fourth chapter focuses on the increasingly significant socio-political factor, i.e. a major increase in the importance of global warming for German voters, which has directly translated into a high level of support for the Green Party. Chapter five discusses the recently launched activities aimed at facilitating the energy transition, which is intended to help Germany to reduce its emissions levels. The final chapter is an attempt to present the conditions Germany needs to meet in the coming years to regain its role as a global climate policy leader.

## I. GERMANY'S CLIMATE AMBITIONS

Since the 1980s and the birth of international climate policy, Germany has declared ambitious goals regarding the reduction of greenhouse gas emissions. One element of this approach involved leading by example<sup>1</sup> to encourage other countries to reduce their negative impact on the environment. When back in 1997, following the adoption of the Kyoto Protocol, the European Commission took over a major portion of powers in the field of climate policy from the member states, Germany continued to plan to significantly reduce its domestic emissions. By doing so, it intended to stimulate the European Commission and other EU member states to set ambitious goals in this field. Alongside this, Berlin was involved in active diplomatic efforts: Germany hosted the UN Climate Change Conference four times, which was the highest number of times among all EU member states, and in 1996 a Secretariat of the United Nations Framework Convention on Climate Change (UNFCCC) was established in Bonn. Since 2010, meetings of the Petersberg Climate Dialogue have been held there ahead of the annual UN Climate Change Conference. Thereby Germany mainly intended to position itself as a major actor in climate policy, which is an important element of international politics.<sup>2</sup>

Back in the 1990s, Angela Merkel became involved in diplomatic activity in the field of climate, then as Minister for the Environment in Helmut Kohl's last government (1994–1998). In 1995, she chaired the UN Climate Change Conference in Berlin and in 1997 she represented Germany during talks on the Kyoto Protocol, which was the first binding international agreement to prevent global warming. Merkel won global acclaim in this field when, already as Germany's Chancellor, she made climate policy one of the most important items on the agenda of the G8 summit held in Germany in 2007 and persuaded other leaders to recognise the need to set new binding targets regarding the reduction of greenhouse gas emissions. Back then, her government also sought to reach an EU-wide agreement on ambitious goals in this field. By including these issues into the priorities of the German international political agenda, Merkel built up her reputation as “the climate chancellor”, which in turn significantly contributed to Germany being viewed as the leader of global climate policy.<sup>3</sup>

<sup>1</sup> M. Böcher, A. Töller, *Umweltpolitik in Deutschland: Eine politikfeldanalytische Einführung*, Wiesbaden 2012, p. 69.

<sup>2</sup> ‘Röttgen übt sich in Zweckoptimismus’, *Der Spiegel*, 18 October 2010, [www.spiegel.de](http://www.spiegel.de).

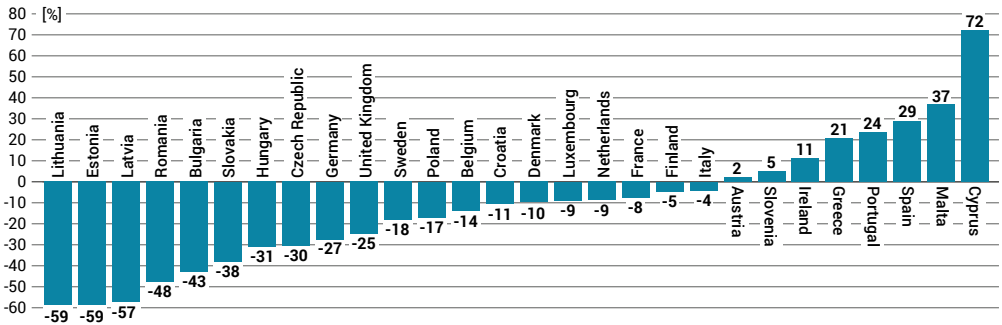
<sup>3</sup> E. Thalman, J. Wettengel, ‘The Story of “Climate Chancellor” Angela Merkel’, *Clean Energy Wire*, [www.cleanenergywire.org](http://www.cleanenergywire.org).



In the context of subsequent events, it is worth noting that at that time Germany’s ambitions and actions on the international stage translated into a genuine reduction of its greenhouse gas emissions. In 1990–2009, the carbon dioxide emissions gradually decreased from 1,251 million tonnes of CO<sub>2</sub> equivalent to 908 million tonnes, which accounted for a decrease of 27%. It should be noted that – in particular in the 1990s – this was mainly due to the industrial sector in the former East Germany being closed down or modernised. Within the European Union at that time, Germany recorded the highest ratio of emissions reduction among the EU-15 (see Chart 1). Over the same period, the United Kingdom reduced its emissions by 25%, France by 8% and Italy by 4%.

Germany’s strong position in mitigating the negative impact on the environment is confirmed by the fact that it was ranked fourth in the global ranking known as *The Climate Change Performance Index 2010*.<sup>4</sup> Based on optimistic statistics recorded thus far, in 2008 Angela Merkel’s government declared that by 2020 Germany’s domestic emissions would be reduced by 40% compared to 1990, i.e. to 751 million tonnes of CO<sub>2</sub> equivalent. In 2010, Germany adopted its Energy Concept, in which it declared that through decarbonisation, and the development of renewable energy sources (RES) and electromobility it will cut its emissions by 80–95% by 2050. At that time, Germany was involved in promoting renewable energy sources worldwide and the RES sector, in particular wind energy, was nearing its peak. In 1990–2009, its share in domestic energy production increased more than fourfold – from 3.6% to 16.1%. In 2009, onshore wind farms (whose significance back in 1990 had been marginal) generated 6.6% of electrical energy.

**Chart 1.** Change in greenhouse gas emissions in EU member states in 1990–2009



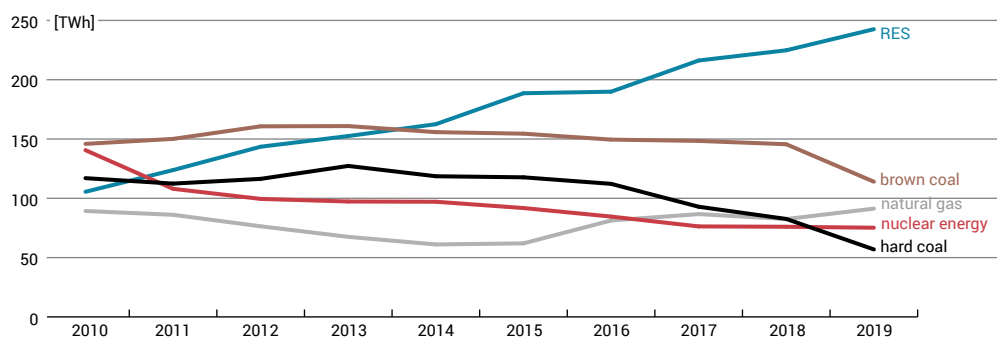
**Source:** *Greenhouse gas emissions by source sector*, Eurostat.

<sup>4</sup> *The Climate Change Performance Index 2010*, Climate Action Network Europe, Germanwatch, December 2009, [www.germanwatch.org](http://www.germanwatch.org).

## II. ENERGIEWENDE AND THE REVISED EMISSIONS REDUCTION PLANS

Since 2010, Germany has seen a decline in the trend regarding the reduction of its greenhouse gas emissions. In 2010, the level of these emissions increased by 3.7% compared to 2009, i.e. to 942 million tonnes of CO<sub>2</sub> equivalent. In 2011, in response to the disaster in Fukushima, Angela Merkel's government decided to shut down eight nuclear power plants and to accelerate the process of shutting down the remaining nine by the end of 2022. This decision is viewed as the symbolic launch of Energiewende.<sup>5</sup> Germany's rapid abandonment of nuclear energy proved to be of key importance for the increase in emissions levels at the beginning of the 2010s. Following a drop recorded in 2011, in 2013 the emissions increased again to the level recorded at the beginning of the decade. The trend's shift was initially caused by increased utilisation of coal-fired power plants, which partly replaced the nuclear facilities being gradually decommissioned. In 2010–2013, the use of brown coal, the fossil fuel that has the most damaging effect on the environment, increased from 145.9 TWh to 160.9 TWh. The use of hard coal over this period increased from 117 TWh to 127.3 TWh. The rapid increase in the utilisation of RES (in 2010–2013 it increased from 105.5 TWh to 152.5 TWh) was unable to compensate for insufficient supply of energy resulting from the nuclear units being decommissioned. The increase in greenhouse gas emissions and the simultaneous rapid development of RES was referred to as the "Energiewende paradox".<sup>6</sup>

**Chart 2.** The production of electrical energy in Germany according to the type of fuel used



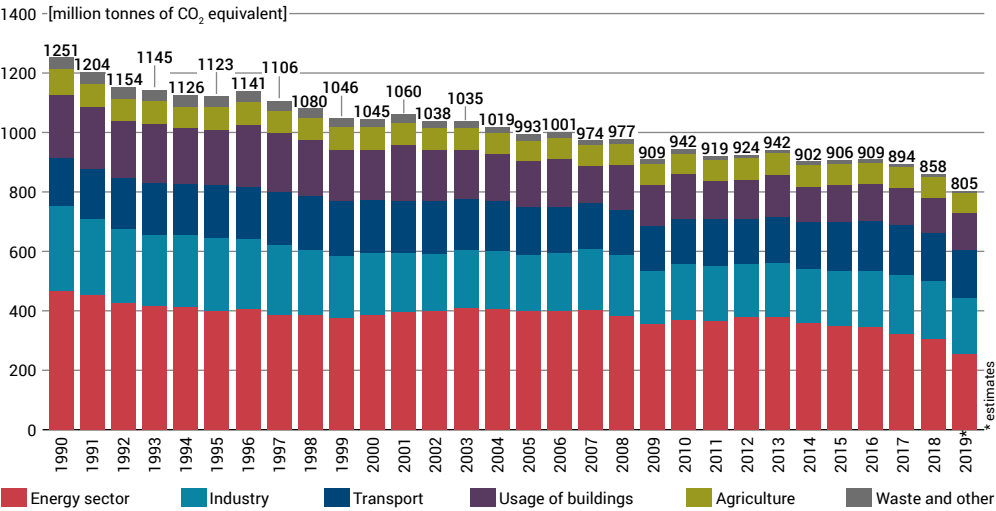
Source: AG Energiebilanzen e.V.

<sup>5</sup> A. Kwiatkowska-Drożdż (ed.), *Germany's energy transformation: difficult beginnings*, OSW, Warsaw 2013, [www.osw.waw.pl](http://www.osw.waw.pl).

<sup>6</sup> R. Bajczuk, 'Niemieckie problemy z redukcją emisji CO<sub>2</sub>', *Komentarze OSW*, no. 155, 15 December 2014, [www.osw.waw.pl](http://www.osw.waw.pl).

In 2014–2017, the level of emissions stabilised at around 900 million tonnes of CO<sub>2</sub> equivalent. The energy sector became increasingly ‘cleaner’ due to the fact that RES and natural gas began to supplant the decreasingly cost efficient hard coal. The level of utilisation of brown coal remained high. In 2017, the amount of brown coal used was almost equal to the amount used at the beginning of the decade. A gradual decrease in emissions in the energy sector balanced out the increase recorded in the remaining sectors, e.g. the manufacturing industry, transport, agriculture and the metallurgical industry. In 2016, Germany emitted 909 million tonnes of CO<sub>2</sub> equivalent, i.e. the same amount as in 2009.

**Chart 3.** Greenhouse gas emissions in Germany in 1990–2019



**Source:** Umweltbundesamt (German Environment Agency).

Despite the halt in the emissions reduction at the EU level, Berlin continued to announce its ambitious climate goals. At a European Council meeting in October 2014, Germany was among the states (alongside Denmark, France, Luxembourg, Portugal and the United Kingdom) which were in favour of the EU adopting the highest proposed emissions reduction target to be achieved by 2030, i.e. at least by 40%. This was an element of Germany building its strong negotiating position ahead of the UN Climate Change Conference in Lima in 2014. Following a change of the ruling coalition from CDU/CSU-FDP to CDU/CSU-SPD in 2013, Germany continued to declare that it would reach the 40% emissions reduction target by 2020, even though the trend recorded up to that point did not suggest this. Climate protection strategies adopted

in 2014 and 2016 by the new CDU/CSU-SPD coalition<sup>7</sup> were among the instruments devised to attain this goal. However, the strategies have not been fully implemented and the government turned out to be insufficiently determined to put the declared plans into practice. Coalition partners feared that implementation of a plan to close down coal mines and to strive to achieve ambitious emissions reduction targets in the transport sector might affect the interests of industrial lobby groups. The approaching Bundestag elections planned for 2017 were another factor hindering the process of making difficult decisions.<sup>8</sup>

In 2010–2017, it became evident that Germany’s climate policy was ineffective and that the actions carried out by successive governments had failed to correspond to what had initially been declared. The annual Climate Action Report<sup>9</sup> (German: *Klimaschutzbericht*) published in January 2019 by the Federal Ministry for the Environment contained the conclusion that Germany had not embarked on a path to eliminate emissions that would enable it to achieve the adopted targets. The authors of the report forecast that by 2020 Germany’s greenhouse gas emissions will be reduced by 32% compared to 1990 levels, instead of the planned 40%. At the end of 2017, Germany generated 894 million tonnes of CO<sub>2</sub> equivalent. To reach the domestic target envisaged for 2020, Germany would have to cut its emissions to a maximum of 751 million tonnes of CO<sub>2</sub> equivalent. Politicians of the opposition Green Party viewed the results presented in the report as proof of the government’s “complete failure” in pursuing its climate policy.<sup>10</sup>

The report did not take into account the statistics for 2018, when emissions decreased to 858 million tonnes of CO<sub>2</sub> equivalent. According to estimates for 2019, in that year Germany generated 805 million tonnes of CO<sub>2</sub> equivalent, which is tantamount to a 35% reduction compared to 1990. The major decline recorded in 2018–2019 resulted from changes in the energy sector which recorded a 29% decrease in the utilisation of coal to generate electricity. The forecast contained in the Climate Action Report published in 2019 (regarding the prospect of reaching a 32% reduction in 2020) indicates that the government had not expected such a rapid decrease in emissions from burning coal at the end of the decade.

<sup>7</sup> *Aktionsprogramm Klimaschutz 2020*, Federal Ministry for the Environment, 3 December 2014, [www.bmu.de](http://www.bmu.de); *Klimaschutzplan 2050*, Federal Ministry for the Environment, 14 November 2016, [www.bmu.de](http://www.bmu.de).

<sup>8</sup> For more, see: R. Bajczuk, *The unfinished reform. An assessment of the energy transformation in Germany in 2013–2017*, OSW, Warsaw 2017, [www.osw.waw.pl](http://www.osw.waw.pl).

<sup>9</sup> *Klimaschutzbericht 2018*, Federal Ministry for the Environment, 4 January 2019, [www.bmu.de](http://www.bmu.de).

<sup>10</sup> ‘*Klimaschutzbericht 2018: Arbeitsverweigerung in der Klimakrise*’, press release of the Green Party of 14 November 2018, [www.gruene-bundestag.de](http://www.gruene-bundestag.de).

### III. CHALLENGES FACED BY ENERGIEWENDE IN THE CONTEXT OF CLIMATE POLICY

In the present decade, Germany's energy transition is facing several serious challenges. Reaching the mid-term emissions reduction target of 55% by 2030 (compared to 1990) will mainly require action in four key areas in which tangible emissions reduction goals are attainable. These areas are: a gradual phase-out of brown coal and hard coal in the energy sector, launching efforts to reduce emissions in the automotive sector, increasing the energy efficiency of buildings, and accelerating the expansion of RES combined with their integration into the electricity grid.

The energy sector has the greatest potential for reducing emissions. In 2018, this sector accounted for 36% of generated greenhouse gases and 75% of this amount was generated as a result of burning brown coal and hard coal. In 2018, coal was the main source of electrical energy – it accounted for 36% of electricity production (RES accounted for 35%). In recent years, the share of coal in Germany's energy mix has decreased significantly. However, the main reason behind this was not the government's policy focused on phasing out coal, but a rapid increase in the price of CO<sub>2</sub> emissions allowances under the EU ETS recorded in 2018–2019,<sup>11</sup> the low price of natural gas, and favourable weather conditions for generating electricity from renewable sources. This combination of factors contributed to a significant decrease in competitiveness of the coal energy industry compared to the RES and natural gas industries. However, there is no guarantee that this situation will last in the coming years.

For years, Germany has postponed taking binding decisions regarding *Kohleausstieg* or the phasing out of coal.<sup>12</sup> Fears were voiced, for example, regarding: its negative impact on the stability of electricity supplies due to the simultaneous decommissioning of nuclear power plants; a potential increase in the price of electricity; and the fact that it might affect the interests of influential German companies operating in the energy sector. In the context of a coal phase-out, the biggest political challenge continues to be its social consequences for regions in which brown coal mining is ongoing. Three German

<sup>11</sup> The direct reason behind the increase in the price of CO<sub>2</sub> emissions allowances was the reform of the EU ETS carried out in 2018 which included doubling the so-called Market Stability Reserve (MSR) in order to absorb the remaining surplus in emissions rights. As a consequence, the price of emissions allowances increased from around 7 euros per one tonne of CO<sub>2</sub> in 2017 to around 25 euros in 2019.

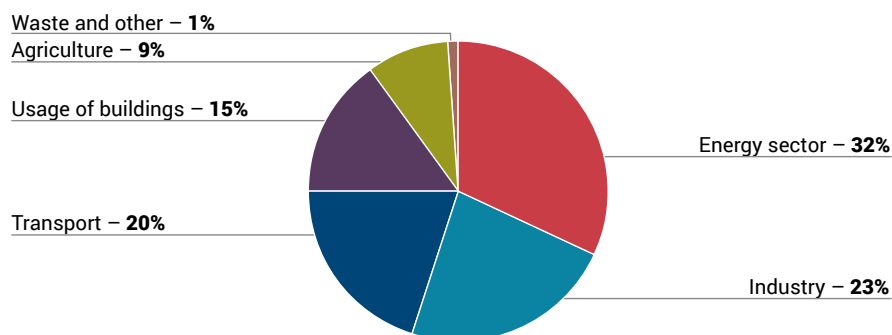
<sup>12</sup> R. Bajczuk, 'The uncertain future of the coal energy industry in Germany', *OSW Commentary*, no. 188, 20 October 2015, [www.osw.waw.pl](http://www.osw.waw.pl).

coal mining regions located in Rhineland, in central Germany and in Lusatia employ around 20,000 individuals in mining activities and in the nearby power plants. However, the sector as a whole is the source of livelihood for as many as 70,000 individuals nationwide. Restructuring of this sector will pose a major problem to the eastern federal states (Brandenburg, Saxony and Saxony-Anhalt) which, since Germany's reunification in 1990, have tackled problems such as depopulation, an ageing population (many young residents migrate to other regions) and deindustrialisation. For the Lusatian coal mining region located within the federal states of Saxony and Brandenburg, closing down open cast mines and coal-fired power plants will be tantamount not only to losing the region's biggest employer, but also the highest paying i.e. the company LEAG. It is no wonder that this region's residents are anxiously following the debate on the phasing out of coal and frequently shift their political support to that party which fully rejects it. In constituencies located in the Lusatian coal mining region, in the elections to the Landtags of Brandenburg and Saxony held in September 2019, the Alternative for Germany (AfD) garnered the highest number of votes; in some of them it was supported by as many as more than 30% of voters.

In order to reach the broadest possible compromise (and to split responsibility) on phasing out coal, in 2018 the government decided to establish a Commission on Growth, Structural Change and Employment (the so-called Coal Commission). It was composed of 28 members including representatives of political parties, coal mining federal states, economic and energy chambers, trade unions and environmental protection organisations. On 26 January 2019, this commission published its final report on Germany phasing out hard coal and brown coal in its energy sector, which was to serve the government as a basis for enacting relevant laws.<sup>13</sup> In line with the recommendations contained in the report, Germany should stop burning coal in 2038 at the latest, and the process of decommissioning power plants should be gradual in order to ensure that by the end of 2022 the national grid includes coal-fired units with a total capacity of 30 GW, and of up to 17 GW by 2030 (at the end of 2019 it was planned for 38.5 GW). Germany's coal phase-out should be accompanied by large scale investments worth 40 billion euros in total, focused on restructuring coal mining regions. The government has declared its readiness to incorporate the commission's recommendations into the content of relevant laws.

<sup>13</sup> *Abschlussbericht der Kommission „Wachstum, Strukturwandel und Beschäftigung“*, Federal Ministry for Economic Affairs and Energy, 26 January 2019, [www.bmwi.de](http://www.bmwi.de).

**Chart 4.** Greenhouse gas emissions in Germany in 2019 according to sectors of the economy



**Source:** Umweltbundesamt (German Environment Agency).

Transport continues to be the most troublesome sector. Germany has adopted an emissions reduction target of 42% by 2030 for this sector (from the present 160 million tonnes of CO<sub>2</sub> equivalent down to 95 million tonnes of CO<sub>2</sub> equivalent). This target is difficult to attain due to the fact that emissions in this sector have been on the rise both in Germany and in the European Union as a whole. In 1990–2017 they increased by 28% on average in the EU. The increase recorded in Germany was among the EU's lowest, at 11.8%.<sup>14</sup> Difficulties associated with the so-called transport transition (German: *Verkehrswende*) result from the fact that Germany is home to Europe's biggest and the world's fourth biggest automotive industry. It manufactures 5.1 million cars annually, which accounts for 30% of the output recorded in the EU as a whole. German car producers (Volkswagen, BMW, Daimler, Audi, MAN) as well as producers of car parts and subassemblies (e.g. Bosch and Continental) are well-known worldwide. The automotive industry accounts for around 16% of German exports. It directly employs 870,000 individuals – 11.8% of the workforce employed in the industrial sector. It should be noted that demand for transport – both passenger transport and cargo – continues to be on the rise. Since 1990, cargo transport in Germany has increased by 74%, from 400 to 696 billion tonne-kilometres, and passenger transport increased by 36%, from 875 to 1,195 billion passenger-kilometres.<sup>15</sup>

The only way to reduce emissions generated by the transport sector is to shift from emission-generating means of transport, such as planes and internal combustion engine cars, to zero-emission ones e.g. bicycles, electric cars and

<sup>14</sup> 'Greenhouse gas emissions from transport in Europe', European Environment Agency, 17 December 2019, [www.eea.europa.eu](http://www.eea.europa.eu).

<sup>15</sup> 'Fahrleistungen, Verkehrsaufwand und „Modal Split“', German Environment Agency, 14 February 2020, [www.umweltbundesamt.de](http://www.umweltbundesamt.de).



trains. However, the possibilities for reducing emissions through this so-called ‘modal shift’ are limited. Using a bicycle can only be an alternative to using a car in highly urbanised areas, while the railways are already overloaded and require major investments in the expansion of routes and in new rolling stock. The electrification of road transport, which accounts for 96% of the transport sector’s emissions, has the greatest potential for boosting environmental protection. In this context, the main obstacle involves the low supply of electric vehicles and the limited ability of the automotive industry to quickly adapt to the new technology. While a relatively rapid replacement of internal combustion vehicles with electric ones is likely, at present there are hardly any convincing alternatives to the road transport of goods and of agricultural and construction machines.

The usage of buildings is another sector that has major potential for reducing the amount of emissions it generates. Despite the fact that in 2018, its emissions were reduced by 44% versus 1990, the government expects this proportion to increase to 67% by 2030. In order to reach this ambitious target, the sector will need to carry out comprehensive investments in the energy efficiency of buildings and to phase out high-emission heating stoves by replacing them with heating units using RES, e.g. heat pumps, or with gas-fired heating stoves (to date gas has accounted for half of the heat generated in Germany).

Reaching these emissions reduction targets will not be feasible without a dynamic development of RES which, alongside natural gas, are expected to replace high emitting fuels such as coal and oil. In the 2018 coalition agreement, the government increased the previous planned target regarding the share of RES in electricity consumption by 2030 from 50% to 65% (in 2019 RES accounted for 42.6% of energy generated in Germany). Calculations published in November 2019 by the Munich-based Research Center for Energy Economics (FfE) indicate that, in order to reach the target set by the government, an increase in the installed capacity of RES will be required from 118 GW in 2018 to 217 GW in 2030. In order to achieve carbon neutrality by 2050, Germany will need to expand this capacity to 516 GW. The authors of the report have estimated the cost of investments related to this plan at 314 billion euros by 2050 (around 10 billion euros annually).<sup>16</sup>

Experts argue that the pace of expanding RES recorded thus far is insufficient for the target to be reached by 2030, all the more so because the forecasted

<sup>16</sup> *Dynamis – Hauptbericht. Dynamische und intersektorale Maßnahmenbewertung zur kosteneffizienten Dekarbonisierung des Energiesystems*, Research Institute for Energy, November 2019, [www.ffe.de](http://www.ffe.de).



increase in demand for electrical energy is connected with the ongoing electrification of all sectors of the economy (25% by 2030).<sup>17</sup> The prospect of reaching this target is mainly undermined by the crisis affecting the wind energy sector. According to its representatives, the annual increase in installed capacity of onshore wind power should be around 4.5 GW, whereas in 2018 wind power installations with a total capacity of nearly 2.5 GW were connected to the grid and in 2019 the increase in capacity was a mere 0.9 GW.<sup>18</sup> Another unresolved problem involves the prolonged construction of transmission networks from Germany's north to the south, which is hindering investments in new wind power capacity both in the northern federal states and offshore. At the end of 2019, a mere 1,150 kilometres (15%) out of nearly 7,700 kilometres of new transmission networks was completed. Another 1,000 kilometres is under construction. The procedure required for a building permit to be issued for the remaining sections is pending.<sup>19</sup> The excessively slow development of RES in the period in which the government planned to decommission the last remaining nuclear power plants (8 GW by the end of 2022) and the launch of efforts to gradually phase out coal-fired units (8.5 GW by the end of 2022, 21.5 GW by 2030) will result in increased consumption of natural gas and more frequent utilisation of coal.

Germany's failure to attain its greenhouse gas emissions targets will trigger financial consequences in the next decade. Under Effort Sharing, which involves emissions from sectors not included in the EU ETS, Berlin committed to reduce these emissions by 14% by 2020 and by 38% by 2030. Meanwhile, in 2018 emissions reduction in non-ETS sectors (transport, construction and agriculture) was a mere 9% compared with the base year 2005. Failure to meet this commitment will be tantamount to Germany having to buy up the shortfall of emissions allowances from other EU member states. In 2020–2022, the Federal Ministry of Finance plans to earmark 300 million euros<sup>20</sup> for this purpose. If the present pace of emissions reduction in non-ETS sectors is maintained, the accumulated cost of emissions allowances that Germany will need to buy in 2021–2030 may be up to 30–60 billion euros.<sup>21</sup>

<sup>17</sup> J. Flauger, B. Fröndhoff, K. Knitterscheidt, K. Witsch, 'Steigender Energiebedarf: Deutschland droht die Ökostrom-Lücke', Handelsblatt, 6 January 2020, [www.handelsblatt.com](http://www.handelsblatt.com).

<sup>18</sup> For more, see: M. Kędzierski, 'German wind power sector in crisis. Energiewende under further threat', OSW Commentary, no. 309, 25 September 2019, [www.osw.waw.pl](http://www.osw.waw.pl).

<sup>19</sup> *Die Energiewende im Stromsektor: Stand der Dinge 2019*, Agora Energiewende, January 2020, [www.agora-energie-wende.de](http://www.agora-energie-wende.de).

<sup>20</sup> J. Schlandt, 'Deutschland verfehlt Klimaziele – und muss Strafe zahlen', Der Tagesspiegel, 19 March 2019, [www.tagesspiegel.de](http://www.tagesspiegel.de).

<sup>21</sup> *Die Kosten von unterlassenem Klimaschutz für den Bundeshaushalt*, Agora Energiewende, September 2018, [www.agora-energie-wende.de](http://www.agora-energie-wende.de).

#### **IV. THE SOCIAL FACTOR – AN INCREASE IN THE IMPORTANCE OF CLIMATE ISSUES FOR GERMAN VOTERS**

For years, opinion polls have indicated that the issues of environmental protection and global warming are significant for the German public. This was reflected in the relatively high level of support for the Green Party (compared with other European countries), which in recent years was around 10%. However, depending on current events, climate change has been overshadowed by such issues as immigration, internal security, unemployment and social welfare (see Chart 5).

Climate issues began to gain ground in the second half of 2018, which was due to a hot summer with extreme temperatures and prolonged drought. The German Weather Service (DWD) announced that 2018 was the hottest and one of the sunniest and driest years dating back to 1881 when records began.<sup>22</sup> Global warming, now visible to the naked eye, triggered youth climate strikes. The protests under the slogan “Fridays for Future”, initiated in summer 2018 by Swedish activist Greta Thunberg, found numerous followers in Germany. The number of attendees continued to rise after December 2018 and in March 2019 220 registered demonstrations gathered a total of around 300,000 individuals.<sup>23</sup> An exceptionally high number of protestors was recorded on 20 September when, according to protest organisers, as many as 1.4 million individuals took to the streets across Germany.<sup>24</sup> The “Fridays for Future” movement was welcomed by a major portion of German society. In a Politbarometer poll conducted in mid-March 2019, school climate protests were supported by 67% of the respondents.<sup>25</sup>

In 2019, opinion polls showed that global warming was the most important issue indicated by the respondents. In a Trendbarometer survey conducted at the beginning of August, environmental and climate protection was considered Germany’s most important problem by 37% of the respondents.<sup>26</sup> The integration of refugees, which in previous polls had ranked first, was the second

<sup>22</sup> ‘Erste Bilanz des Deutschen Wetterdienstes zum Jahr 2018 in Deutschland’, Deutscher Wetterdienst, 20 December 2018, [www.dwd.de](http://www.dwd.de).

<sup>23</sup> ‘Klima-Demos – von Berlin bis Sydney’, Tagesschau, 15 March 2019, [www.tagesschau.de](http://www.tagesschau.de).

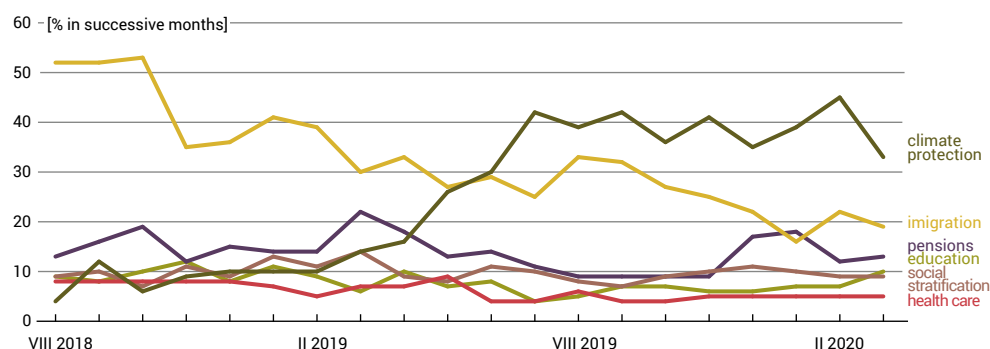
<sup>24</sup> ‘Millionen fürs Klima’, Tagesschau, 20 September 2019, [www.tagesschau.de](http://www.tagesschau.de).

<sup>25</sup> ‘ZDF-Politbarometer: Zwei Drittel begrüßen „Fridays for Future“’, ZDF, 15 March 2019, [www.zdf.de](http://www.zdf.de).

<sup>26</sup> ‘Klimawandel ist für die meisten Deutschen das größte Problem’, Zeit Online, 19 August 2019, [www.zeit.de](http://www.zeit.de).

most important issue (29%). In a DeutschlandTrend poll conducted in October, 81% of those surveyed admitted that politicians were determined or very determined to become involved in actions aimed at protecting the climate.<sup>27</sup>

**Chart 5.** Germany's most important problems as seen by the German public



**Source:** *Langzeitentwicklung – Themen im Überblick*, Forschungsgruppe Wahlen e.V., [www.forschungsgruppe.de](http://www.forschungsgruppe.de).

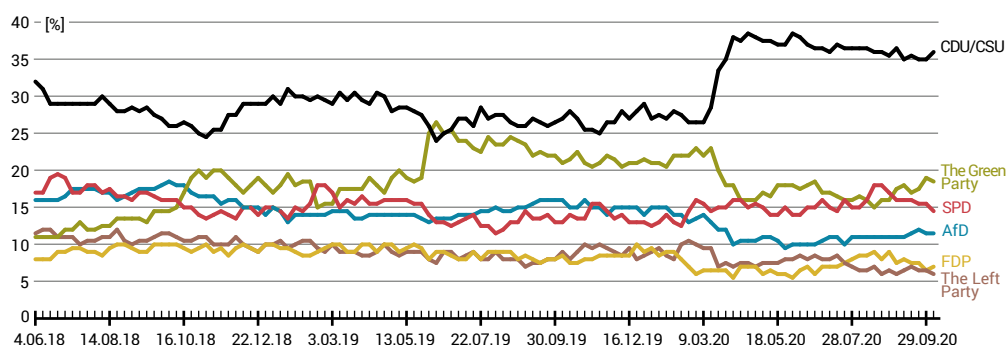
In Germany, the increase in the importance of global warming translated into increased levels of support for the Green Party which is viewed as a party that supports an ambitious climate policy. In the European Parliament election held on 26 May 2019, the Green Party came second, for the first time in history, having won 20.5% of the votes. Between summer 2018 and summer 2019, this party's approval rating doubled from 12% to 25% (see Chart 6). This high level of support triggered a debate on the prospect of a Green Party politician becoming Germany's chancellor following the elections to the Bundestag planned for 2021. Should the Greens maintain their approval rating at a level of around 20%, forming a government without their participation will be practically impossible.

The increase in the level of support for the Green Party has posed a major challenge for the parties making up the ruling coalition, i.e. the CDU/CSU and the SPD, because the vast majority of the Green Party's new voters are former supporters of the CDU/CSU and the SPD. Attempts to regain the lost electorate and the need to find solutions to accelerate an emissions reduction were the main reasons behind the government forming a so-called 'climate cabinet' (German: *Klimakabinett*) composed of the chancellor and the ministers of finance, economic affairs and energy, the environment, transport, agriculture, internal affairs and construction. Its main aim was to devise a government package of

<sup>27</sup> *ARD-DeutschlandTREND Oktober 2019*, Infratest dimap, October 2019, [www.infratest-dimap.de](http://www.infratest-dimap.de).

instruments to enable Germany to reach its climate protection target planned for 2030 (involving a reduction of greenhouse gas emissions by 55% compared to 1990). In response to society's increased interest in global warming, the ruling parties presented their own visions of climate policy in an attempt to seize the initiative to shape the domestic political debate. The fact that nearly all major parties included various forms of CO<sub>2</sub> emission fees in their political platforms is proof of a shift in thinking about this policy's instruments. Back in 2018, both the CDU/CSU and the FDP were vehemently opposed to this.

**Chart 6.** Support for political parties in Germany



**Source:** INSA / YouGov, [www.wahlrecht.de](http://www.wahlrecht.de).

Meanwhile, the right-wing AfD party has set itself up in opposition to the prevailing social mood and to demands voiced by the other major political parties. The AfD is the only party represented in the Bundestag which questions both the fact that global warming is man-made and the point of pursuing an ambitious climate policy and energy transition. In public debate, AfD politicians position themselves as the only political force defending common people against the “climate madness” allegedly promoted by the other parties.<sup>28</sup> The harsh criticism of the government given by the AfD is a major challenge for the coalition parties. In their attempts to select the most favourable climate policy instruments, they need to avoid imposing an excessive burden on average citizens and to prevent an increase in the AfD's approval rating among those voters who are disenchanted with Energiewende.

<sup>28</sup> ‘Hemmelgarn: „Bauscham“ als Ausdruck totalitären Klimawahns und Menschenfeindlichkeit’ – a comment on the website of the AfD parliamentary group in the Bundestag, 30 September 2019, [www.afdbundestag.de](http://www.afdbundestag.de).

## V. THE GOVERNMENT'S INCREASED FOCUS ON CLIMATE ISSUES

Following the elections to the Bundestag in September 2017, the government decided to admit that it would not be able to reach the 2020 emissions reduction target. The CDU/CSU-SPD coalition agreement signed in March 2018 contained numerous declarations confirming Germany's major ambitions in the field of climate policy. For example, it was announced that Germany "will continue to be the leader in climate protection" and will maintain its determination to reach European and international emissions reduction targets by 2020, 2030 and 2050 (i.e. the targets defined in the Paris Agreement and in EU documents). However, as regards the domestic plan to reduce emissions by 40% by 2020, the coalition members only mentioned that they would devise actions to bridge the emissions reduction gap. They confirmed their readiness to reach the 2030 target and announced that a law would be enacted to oblige specific ministries to reduce emissions in individual sectors.<sup>29</sup>

Germany's domestic problems regarding the effectiveness of its climate policy until 2017 resulted in it adopting a highly cautious attitude at the EU level. The new government began to be viewed as a brake on proposals involving actions which were meant to be more ambitious than the actions carried out under the EU's climate policy thus far. This was a major shift for Berlin, which chose to adopt the inconvenient attitude of an actor reacting to external initiatives and refrained from behaving like an active leader.

At a meeting of the Council of the EU held in June 2018, Germany objected to increasing the EU target regarding the share of RES in energy consumption from 30% to 35% in 2030. The new Minister for Economic Affairs and Energy, Peter Altmaier (CDU), explained that for Germany this would mean doubling its current expenditure of 25 billion euros annually on the development of renewable sources.<sup>30</sup> Ultimately, the target regarding the share of RES in the EU's energy mix in 2030 was set at 32%. In addition, Berlin put pressure on the European Commission not to propose to increase the emissions reduction target from 40% to 45% by 2030. This proposal was put forward in summer 2018 by the EU Commissioner for Climate Action and Energy Miguel Arias Cañete. Chancellor Merkel argued that increasing the target was pointless because

<sup>29</sup> The coalition agreement between the CDU, CSU and the SPD of 12 March 2018, [www.bundesregierung.de](http://www.bundesregierung.de).

<sup>30</sup> F. Simon, 'Deutschland torpediert ambitionierte EU-Energieziele', Euractiv, 12 June 2018, [www.euractiv.de](http://www.euractiv.de).

several member states were behind with implementing the guidelines adopted thus far.<sup>31</sup> Berlin feared that increasing this target would equate to automatically increasing the commitments defined for all EU member states.

In addition, Germany was opposed to increasing emissions reduction targets by 2030 for passenger cars from 30% to 40% of the 2021 levels. At a summit of the Council of the EU held in October 2018, Germany, together with Poland, Slovakia, Bulgaria and Hungary, pushed through a less ambitious solution. Representatives of the CDU/CSU in particular were against imposing tougher commitments because they feared that these might affect the German automotive industry.<sup>32</sup> A compromise solution agreed at the summit by EU member states envisaged raising the target to 35%.<sup>33</sup> Ultimately, as a result of negotiations with the European Parliament (which was in favour of adopting a 40% emissions reduction target), the agreed level of the reduction of emissions generated by passenger cars by 2030 was set at 37.5%.<sup>34</sup>

At a European Council meeting in March 2019, Germany opposed the inclusion into the summit conclusions of a goal involving the EU reaching carbon neutrality by 2050. It thereby backed Poland, the Czech Republic, Hungary and several other countries, and positioned itself against the proposal put forward by the European Commission which was supported by a group of Western European states led by France.<sup>35</sup> It was only at the summit held in June and following the launch of the climate cabinet's work that Germany supported this initiative under pressure from its public. In addition, it took Germany a long time to officially join the group of states which were in favour of the plan to increase the EU's emissions reduction target to 50–55% in 2030, which was suggested by the new European Commission President Ursula von der Leyen, a German national. Germany was not among the signatories of a letter written at the beginning of October 2019, in which eight member states (Denmark, France, Latvia, Luxembourg, the Netherlands, Portugal, Spain and Sweden) called on the European Commission to increase this target to 55%. It was not before the council meeting in December 2019 that Angela Merkel's government endorsed the proposal put forward by Ursula von der Leyen.

<sup>31</sup> V. Kern, 'Merkel gegen höhere EU-Klimaziele', Klimareporter, 27 August 2018, [www.klimareporter.de](http://www.klimareporter.de).

<sup>32</sup> T. Kirchner, 'Deutschland bremst in Europa', Süddeutsche Zeitung, 11 October 2018, [www.sueddeutsche.de](http://www.sueddeutsche.de).

<sup>33</sup> 'EU ministers agree 35% car emissions reduction by 2030', Financial Times, 10 October 2018, [www.ft.com](http://www.ft.com).

<sup>34</sup> 'CO<sub>2</sub>-Ausstoß von Autos soll bis 2030 stark sinken', Frankfurter Allgemeine, 17 December 2018, [www.faz.net](http://www.faz.net).

<sup>35</sup> F. Simon, 'Deutschland wird zum Klima-Bremser', Der Tagesspiegel, 22 March 2019, [www.tagesspiegel.de](http://www.tagesspiegel.de).

At the EU level, the German climate policy demonstrated that Germany had lost its status of a leader promoting ambitious solutions and had joined the average performing member states. Although Germany was not opposed to increasing the targets, it tended to slow down EU initiatives in instances when this seemed favourable to its domestic situation, in particular its economic interests and capabilities. As a result of a series of decisions halting the EU's more ambitious climate policy, Germany began to be referred to as a brake on progress in this field, and Angela Merkel's reputation as "the climate chancellor" was undermined.

The ineffectiveness of Germany's domestic climate policy to date, combined with mounting pressure from both the EU and the German public, forced Angela Merkel's government to act. The ruling coalition parties (the CDU/CSU and the SPD) made the fight against climate change the main topic of the political debate in Germany in 2019. On 20 September, the climate cabinet formed back in March announced its Climate Action Programme 2030 (German: *Klimaschutzprogramm 2030*).<sup>36</sup> The document contains a package of instruments developed for sectors such as transport, buildings, agriculture, energy and industry, which are expected to ensure that Germany reduces its greenhouse gas emissions by 55% by 2030. The most important point of the package is the introduction of a national trading system in CO<sub>2</sub> emissions allowances for the transport and construction sectors which are not covered by the ETS. The solutions agreed by the coalition partners included a plan to increase tax reliefs for the modernisation of buildings and to introduce financial support measures for owners of old heating stoves who wish to replace them with new ones, as well as a plan to expand the programmes to support the optimisation of industrial production processes. In addition, the coalition partners agreed on instruments to boost the share of RES in the production of electrical energy to 65% in 2030. For example, they decided to increase the target capacity of offshore wind farms to 20 GW by 2030 and to abolish the upper limit of financial support offered to photovoltaic installations.

A major portion of the proposed solution relates to the transport sector which is the most problematic area of the German climate policy. The main points in its decarbonisation involve offering support to the development of infrastructure for electric car charging (plans have been made to increase the number of charging stations from the current 20,000 to one million at the end

<sup>36</sup> M. Kędzierski, 'W walce o zielonego wyborcę. Rząd Merkel przyjmuje pakiet klimatyczny', OSW, 24 September 2019, [www.osw.waw.pl](http://www.osw.waw.pl).



of the decade) and increasing financial incentives regarding the purchase of new electric cars. In this way, the government intends to encourage citizens to refrain from buying internal combustion engine cars. According to government plans, by 2030 7–10 million electric cars will be in use in Germany (at the end of Q3 2019 there were 650,000). In addition, record high investments in railway infrastructure have been planned, including the expansion and modernisation of the railway network and of urban and suburban public rail transport systems. The plans also envisage reducing the VAT rate for railway tickets from 19% to 7% and increasing the VAT rate for plane tickets (by 41–74% depending on how long the flight is). The purpose of these actions is to improve the quality and competitiveness of rail transport versus road and air transport. Encouraging passengers to travel by rail instead of using high-emission cars and planes is expected to result in a reduction of the pollution generated by the transport sector. The total cost of implementation of this programme is estimated at more than 100 billion euros to the end of 2030.

The package also included a draft Climate Protection Law (German: *Klimaschutzgesetz*)<sup>37</sup> which had been announced in the coalition agreement. It set the maximum annual levels of greenhouse gas emissions for sectors such as energy, industry, transport, buildings, agriculture and waste management in 2020–2030 and made specific ministries responsible for enforcing the agreed limits. In addition, it contained a provision which declared that Germany would reach carbon neutrality in 2050 – the first such provision in German legislation.

**Table 1.** Annual sector-specific targets set in line with the Climate Protection Law (in millions of tonnes of CO<sub>2</sub> equivalent)

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Energy sector</b>	280		257								175
<b>Industry</b>	186	182	177	172	168	163	158	154	149	145	140
<b>Buildings</b>	118	113	108	103	99	94	89	84	80	75	70
<b>Transport</b>	150	145	139	134	128	123	117	112	106	101	95

<sup>37</sup> M. Kędzierski, ‘Niemiecka ustawa o ochronie klimatu: mechanizm pozbawiony sankcji’, OSW, 16 October 2019, [www.osw.waw.pl](http://www.osw.waw.pl).



	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Agriculture</b>	70	68	67	66	65	64	63	61	60	59	58
<b>Waste management and other sectors</b>	9	9	8	8	7	7	7	6	6	5	5

**Source:** Klimaschutzgesetz.

The solutions proposed by the government received widespread criticism – they were considered insufficient for the 2030 target to be achieved. According to critics, the above-mentioned climate package is a collection of mutually exclusive instruments. The most heavily criticised issue was the proposed formula of a levy for emitting CO<sub>2</sub> in the transport and buildings sectors. It was conceived as a system of emissions allowances with an initial price of a mere 10 euros for one tonne of CO<sub>2</sub> starting from 2021. The critics viewed the proposed levy as a bureaucratic burden without any genuine impact on the environment. They estimated that the government’s programme may contribute to a mere third of the necessary emissions reduction by 2030. In addition, the draft Climate Protection Law was criticised – although it makes specific ministries responsible for acting in favour of reducing emissions in the sectors they supervise, it does not introduce any sanctions for the failure to meet the annual targets.

In response to this criticism, representatives of the government argued that the instruments included in the climate package guarantee that Germany will reach the emissions reduction targets by 2030. The coalition partners explained the government’s failure to consider the more comprehensive measures proposed by numerous experts (including to considerably increase the price of CO<sub>2</sub> emissions) by referring to the need to take into account the interests and capabilities of less affluent citizens. Fears were frequently voiced in public debate that, in response to unpopular decisions or burdens that would be too hard to bear for average citizens, a social discontent movement may emerge in Germany resembling the yellow vest movement in France. Another frequently raised argument involved the intention to take care of the competitiveness of German companies, should these be burdened with additional costs that their competitors from other countries would be free from.

Ultimately, due to widespread criticism and the need to achieve a majority in the Bundesrat to enact one of the climate package laws, in December 2019 the CDU/CSU-SPD coalition reached a compromise with the Green Party regarding

corrections to the programme. The main point of this compromise involved increasing the price of one tonne of CO<sub>2</sub> in the transport and buildings sectors. This price has been set at 25 euros in 2021 (the initial price was 10 euros) and will gradually increase to 55 euros (instead of the planned 35 euros) in 2025.<sup>38</sup> In the first year of this law being in force, this will translate into an increase in the price of petrol of around 7–8 euro cents. The additional income to the federal budget generated by this price increase is expected to be spent on the reduction of the RES fee, which is a component of the electricity price in Germany.

In 2020, Germany launched its process of phasing out coal. On 3 July, the Bundestag and the Bundesrat passed the Law on Phasing Out Coal (German: *Kohleausstiegsgesetz*)<sup>39</sup> which was based on recommendations formulated by the Coal Commission. Although the last coal-fired power plants and combined heat and power plants are to be decommissioned in 2038 at the latest, plans have been made to accelerate this process to finish it in 2035. The schedule of decommissioning brown coal-fired power plants was drawn up in negotiation with their operators. The companies RWE and LEAG will receive a total of 4.35 billion euros in exchange for decommissioning some of their units by the end of 2029. Power plants decommissioned in 2030 and later will not receive any compensation. The schedule envisages that by the end of 2038 one third (6 GW) of the present capacity of brown coal-fired power plants will remain on the grid. Due to the shape of the regulatory provisions contained in the law, the last remaining hard coal-fired power plants will probably have to be decommissioned as early as 2033.<sup>40</sup> Until 2027, their phase-out will be carried out by way of organising auctions during which power plant operators will apply for compensation. From 2028, the facilities will be shut down pursuant to decisions of the Federal Network Agency, and no compensation will be paid. A separate law on granting structural support to coal mining regions (German: *Strukturstärkungsgesetz Kohleregionen*) provides for a total of 40 billion euros to be earmarked for restructuring coal mining regions by 2038. Out of this sum, 14 billion euros is to be distributed to Saxony, Brandenburg, Saxony-Anhalt

<sup>38</sup> For the first five years, the prices for emitting one tonne of CO<sub>2</sub> determined in advance will apply: in 2021 – 25 euros, in 2022 – 30, in 2023 – 35, in 2024 – 45, and in 2025 – 55. Starting from 2026, the price will be determined on the basis of the situation on the market, but it should not exceed the price range set by the government annually. In 2026, the price for emitting one tonne of CO<sub>2</sub> will be 55–65 euros.

<sup>39</sup> M. Kędzierski, 'Niemcy: kontrowersyjne rozstanie z energetyką węglową', OSW, 6 July 2020, [www.osw.waw.pl](http://www.osw.waw.pl).

<sup>40</sup> M. Kędzierski, 'Niemiecka ustawa o wyjściu z węgla: koniec spalania węgla do 2038 roku', OSW, 31 January 2020, [www.osw.waw.pl](http://www.osw.waw.pl).

and North Rhine-Westphalia. The government is going to invest the remaining 26 billion euros in the development of transport infrastructure, universities, research institutes and the local branches of federal offices in coal mining regions. An additional 1 billion euros was earmarked for restructuring land which was previously used as hard coal mining sites.

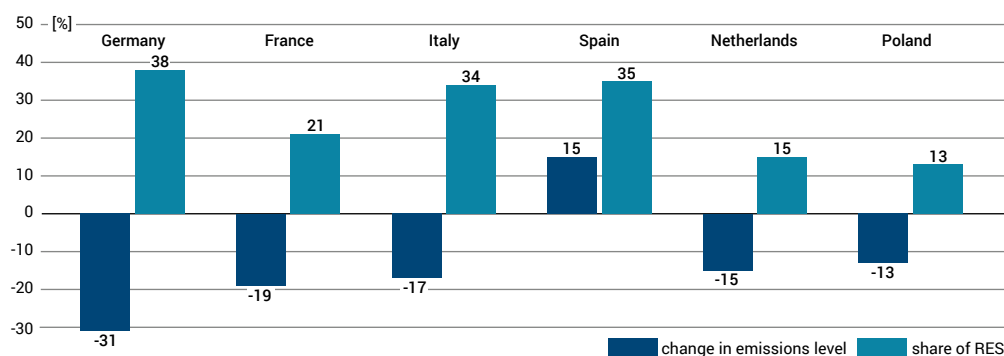
The Law on Phasing Out Coal received widespread criticism from the opposition, institutions dealing with climate policy and several members of the Coal Commission. In some important issues, the wording of the adopted provisions differs considerably from the commission's recommendations, as a result of which the law in its present shape will have a limited impact on emissions reduction. The schedule of decommissioning brown coal-fired power plants was devised in such a way as to maintain half of the currently installed capacity to 2034 and one third of this capacity to 2038. The process of phasing out coal will not be gradual – it will be cumulative immediately ahead of the threshold years, which will likely result in additional emissions. In addition, contrary to the commission's recommendations, a newly-built coal-fired power plant in Datteln has been connected to the grid. Due to its high efficiency, this power plant is more frequently used than the older units which are planned to be decommissioned. The compensation offered to RWE and LEAG is the most controversial element of the law. An analysis compiled by the Öko-Institut suggests that the sums paid as compensation were inflated by 100% and that, in the process of determining these sums, the ongoing decrease in the competitiveness of electricity generation from coal and certain unfavourable market outlooks (e.g. increased electricity generation from RES, rising prices of emissions allowances under the ETS, the low price of natural gas) were not taken into account. According to critics, the adopted regulations will not only fail to ensure the necessary emissions reduction, but will also probably enable operators of brown coal-fired power plants to artificially maintain their units on the grid regardless of the deteriorating market conditions.

## VI. WILL GERMANY REGAIN ITS ROLE AS LEADER?

Despite the problems with Energiewende, Germany views itself as a forerunner of global actions to protect the climate and is making every effort to maintain its green image on the international stage. German political and economic elites frequently argue that their country is able to be the leader in climate policy and in the energy transition to green sources of energy. Both the ruling CDU/CSU-SPD coalition and the Green Party (which aspires to power) emphasise the fact that Germany is simultaneously phasing out coal and nuclear energy. They present this fact to voters and the international public as proof of Germany's ambition and ability to set a good example.

Germany is backing up its leadership ambitions, for example with domestic cutting-edge technologies in the field of RES, and with its know-how regarding energy transition. It views Energiewende as a model which will be copied by other countries in the future. To confirm the effectiveness of its actions, it frequently cites e.g. the statistics regarding the reduction of greenhouse gas emissions in the EU and the share of RES in the consumption of electrical energy. In these categories, Germany ranks high among the EU's largest economies. Following the United Kingdom's exit from the EU, Germany has moved to the top of both of these rankings.

**Chart 7.** The change in emissions level and in the share of RES in electricity consumption in the EU's six largest economies in 2018



**Source:** Eurostat.

Berlin aims to maintain its role as the leader in climate policy, which is among the elements of international politics which have been gaining ground. For Germany, this policy is not only a matter of image and prestige but also an element of political and economic interests. Its growing importance translates into

opportunities to impact on the direction of the worldwide agenda to combat global warming and into a privileged relationship with developing countries, which are the main recipients of funds earmarked for investments in carbon neutral technologies.<sup>41</sup> Germany is among the states which are the most involved in the so-called Official Development Assistance (ODA) offered to those countries. In 2020, Berlin is planning to spend a total of 4 billion euros on the fight against global warming at the international level. Alongside the pursuit of the domestic goals of its development policy (such as environmental and climate protection), the government offers support to German companies which are ready to invest in green technologies in countries which are the recipients of development assistance. This model of cooperation is favourable both to the recipients of this assistance and to the companies offering it because they gain new opportunities to expand their investment potential.

By combating global warming, Germany has found a way to promote and expand its green technology sector. Berlin is promoting green technologies as a means of combating the increase in CO<sub>2</sub> emissions both through its domestic energy transition and on the international stage. The popularisation of these technologies is viewed as a potential impetus to the modernisation of the German economy and ensuring its competitiveness in the future. Germany is hoping that climate policy, which has recently been gaining ground (in particular the intended decarbonisation of successive sectors of the economy), will facilitate the process of other countries embarking on a path to energy transition and searching for solutions to curb emissions. In addition, it is expected to boost their readiness to carry out investments in this field. This, in turn, may create new expansion opportunities for German companies operating in the green technology sector. For years, Germany has been among the world's most advanced countries in this field. In 2017, Germany's export of green technology products was worth 58 billion euros, which ranked Germany second – after China – on the global green technology market, with a 13.6% share. In addition, the green technology sector accounted for 13.5% of technology patents registered in Germany.<sup>42</sup>

To maintain its leading role in international climate policy, Germany will need to regain credibility as the leader of actions focused on combating global warming. In recent years, due to the internal situation, announcements and

<sup>41</sup> R. Bajczuk, 'Ochrona klimatu – specjalność niemieckiego eksportu i dyplomacji', *Komentarze OSW*, no. 104, 3 April 2013, [www.osw.waw.pl](http://www.osw.waw.pl).

<sup>42</sup> *Die Umweltwirtschaft in Deutschland. Entwicklung, Struktur und internationale Wettbewerbsfähigkeit*, German Environment Agency, January 2020, [www.umweltbundesamt.de](http://www.umweltbundesamt.de).

declarations frequently failed to translate into genuine actions both in domestic politics and at the EU level. If Germany is to regain this credibility it will mainly depend on it solving its domestic problems associated with Energiewende and embarking on a path to emissions reduction in line with the adopted targets and commitments. Not only would this improve Germany's image, but it would above all result in it abandoning its reactive role within the European Union and regaining its position at the forefront of change. In addition, an effective decarbonisation policy is a prerequisite for Energiewende to be recognised as a model to follow. However, other countries will only be willing to copy the solutions adopted in Germany if this is beneficial for them, i.e. it will help them to maintain the economic prosperity of their citizens and will not have any negative impact on the competitiveness of their industrial sector.

Several factors will have a decisive impact on the shape of the German climate policy in the coming years.

Firstly, it will depend on the effectiveness of the instruments adopted in autumn 2019 under the climate package, which is expected to ensure emissions reduction in line with specific paths in all sectors of the economy. The results of the coal phase-out strategy and of the solutions adopted in the construction and transport sectors (which have major potential for reducing emissions), will be of key importance. The absence of sufficient progress will increase pressure to introduce additional mechanisms.

Secondly, pursuing an ambitious climate policy in such an industrialised and export-oriented country as Germany requires balancing the decarbonisation of the economy by taking the interests of those sectors which will be most affected by it into account. An excessively restrictive approach may compromise the competitiveness of products made in Germany and, as a result, contribute to jobs being lost and public support for measures to stop global warming being undermined. Therefore, a stepping up of the climate policy targets will on the one hand need to be combined with a boost in budgetary spending on instruments devised to stimulate investments in modern carbon neutral technologies and offering financial support to them (e.g. in the field of hydrogen generation and use). On the other hand, it will need to be combined with preventing or offsetting negative consequences for companies which are subject to additional burdens related to decarbonisation (e.g. the Carbon Border Adjustment Mechanism and Carbon Contracts for Difference).

Thirdly, the dynamic of the domestic debate on climate policy will be impacted by the result of negotiations over the proposal put forward by the European Commission to increase the EU's 2030 emissions reduction target from 40% to 50–55%. The federal government officially supports the European Commission, but the new reduction target and specific member states' contribution regarding non-ETS sectors will only be determined during talks between EU member states. According to the currently valid mechanism, setting the new EU reduction target at 50% would be tantamount to increasing Germany's 2030 commitment from the present 55% to 64%. If the EU decides to set its target at 55%, Germany would have to increase its target to 68%.<sup>43</sup> It should be expected that Berlin will strive to replace the current algorithm used to determine the contribution of individual member states with one that would limit the possibility of increasing their commitments. Increased targets, for their part, will result in the government having to launch new measures to curb the emissions generated by the economy. This will be necessary due to the fact that all of the instruments introduced so far (which at present are considered insufficient) had been agreed with the currently valid commitment in mind (i.e. reducing the emissions by 55% by 2030).

Fourthly, another important factor impacting on the decision-making process in the climate policy will involve long-term interest (or the absence thereof) on the part of the public in issues related to global warming. The fact that in recent years these issues have been ever-present in the public debate (which in turn has resulted in increased public awareness of climate problems) prompts the conclusion that the social factor will continue to be a component of lasting pressure put on the government. From voters' perspective, the increase in the importance of climate issues was among the key reasons why climate policy reform was considered a political priority by nearly all the German political parties. Society maintaining its pressure on the government would result in the government's increased determination to launch more ambitious, albeit more costly, actions should the progress in reducing emissions be insufficient.

Fifthly, the climate policy dynamic will depend on the line-up of the future coalition formed following the elections to the Bundestag planned for autumn 2021. It is likely that the next government will be formed by one of the currently ruling forces (the CDU/CSU or the SPD) and the Green Party, for which climate policy is one of its central areas of competence. For the remaining parties,

<sup>43</sup> K. Stratmann, '„Klima- und industriefeindliche Politik“ – Union und SPD streiten wieder über Klimaziele', Handelsblatt, 4 May 2020, [www.handelsblatt.com](http://www.handelsblatt.com).

the possible involvement of the Green Party in ruling the country would be an excellent opportunity to verify the credibility of the Greens. This, in turn, would be another factor additionally boosting the Green Party's determination to prove its effectiveness in preventing global warming. Therefore, it should be expected that the possible involvement of the Green Party in the future ruling coalition will translate into Germany adopting a tougher stance on climate issues than that adopted by the CDU/CSU-SPD coalition, both domestically and at the EU level. Although in their rhetoric these parties presented themselves as supporters of an active policy, when defining this policy's goals and selecting its instruments they appeared to be much more cautious and emphasised the need to take various economic and social interests into account.

Finally, the consequences of the economic crisis triggered by the COVID-19 pandemic will be another important factor impacting on the shape of German climate policy and how it is pursued. This policy is likely to result in Germany reaching its 2020 emissions reduction target, contrary to what was initially forecast.<sup>44</sup> However, the decrease in CO<sub>2</sub> emissions related to the pandemic does not result from a technological and structural change but is a temporary consequence of the economic decline. Therefore, overcoming the crisis will inevitably result in the level of emissions increasing again. The economic crisis has exposed numerous sectors of the economy which are important from the point of view of the climate policy (the automotive industry in particular) to major problems. The government's present intention to impose additional burdens, due to the need to reduce emissions, may severely hamper the process of overcoming the economic decline for some sectors. The politicians of the CDU/CSU and the FDP, and a portion of economic and industrial interest groups (e.g. DIHK and BDI), are convinced that it will be necessary to adjust the instruments and ambitions within the climate policy in the coming years in such a way as to make sure that the economic recovery process is not hampered. On the other hand, the post-crisis recovery period is viewed as a unique opportunity to accelerate the green transition and to promote innovative technologies, which will be facilitated by additional state funds being made available by the government. This approach is being promoted in particular by the Green Party, the federal states, the energy industry and the green technology sector. The economic support package agreed on 3 June 2020 by the CDU/CSU and the SPD was largely devised to meet the needs of "sustainable development and the green modernisation of the economy". In 2020–2021, the government

<sup>44</sup> M. Kędzierski, 'COVID-19 i Energiewende: wpływ pandemii na niemiecką transformację energetyczną', *Komentarze OSW*, no. 340, 17 June 2020, [www.osw.waw.pl](http://www.osw.waw.pl).



plans to earmark 50 billion euros for the so-called ‘future package’ which includes additional investments in electromobility, railways, digitisation, the thermal modernisation of buildings, and hydrogen technologies (which are expected to be used in order to eliminate the greenhouse gas emissions produced by economic activity). These actions are intended to boost the decarbonisation process in sectors such as transport, buildings and industry, in which emissions reduction in recent years was insufficient. Earmarking significant funds for activities meeting the needs of the green transition (which is a component of the “green recovery”) may bring Germany considerably closer to attaining its 2030 climate policy targets and facilitate the process of the German economy reducing its emissions in line with the prospect of achieving carbon neutrality by 2050.

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