

Guiding principles

on the decision of the First Senate of 24 March 2021

- 1 BvR 2656/18 -

- 1 BvR 78/20 -

- 1 BvR 96/20 -

- 1 BvR 288/20 -

(Climate protection)

1. The protection of life and physical integrity under Article 2 (2) sentence 1 of the Basic Law includes protection against impairments of fundamental rights due to environmental pollution, regardless of by whom and through what circumstances they threaten. The state's duty to protect under Article 2 (2) sentence 1 of the Basic Law also includes the obligation to protect life and health from the dangers of climate change. It can also establish an obligation to protect under objective law with regard to future generations.

2. Article 20a of the Basic Law obliges the state to protect the climate. This also aims at achieving climate neutrality.

- a. Article 20a of the Basic Law does not enjoy unconditional priority over other concerns, but must be balanced with other constitutional rights and principles in cases of conflict. In this context, the relative weight of the climate protection requirement in the balancing process increases as climate change progresses.**
- b. If there is scientific uncertainty about environmentally relevant causal relationships, the special duty of care imposed on the legislature by Article 20a of the Basic Law, also for the benefit of future generations, includes taking into account already reliable indications of the possibility of serious or irreversible impairments.**

- c. As a climate protection requirement, Article 20a of the Basic Law has an international dimension. The national climate protection obligation is not precluded by the fact that the global character of climate and global warming precludes a solution to the problems of climate change by one state alone. The climate protection imperative requires the state to act internationally to protect the climate globally and to work towards climate protection within the framework of international coordination. The state cannot evade its responsibility by referring to greenhouse gas emissions in other states.**
- d. In exercising its mandate to concretise and its prerogative to concretise, the legislature has currently determined the climate protection goal of Article 20a of the Basic Law in a constitutionally permissible manner to the effect that the increase in the global average temperature is to be limited to well below 2 °C and, if possible, to 1.5 °C compared to the pre-industrial level.**
- e. Article 20a of the Basic Law is a justiciable legal norm intended to bind the political process in favour of ecological concerns, also with a view to future generations.**

3. Compatibility with Article 20a of the Basic Law is a prerequisite for the constitutional justification of state interventions in fundamental rights.

4. Under certain conditions, the Basic Law obliges the safeguarding of freedom protected by fundamental rights over time and the proportionate distribution of opportunities for freedom over the generations. In terms of subjective law, fundamental rights, as an intertemporal safeguard of freedom, protect against a unilateral shift of the greenhouse gas reduction burden imposed by Article 20a GG into the future. The objective-law protection mandate of Article 20a of the Basic Law also includes the necessity to treat the natural foundations of life with such care and to leave them to posterity in such a condition that subsequent generations cannot continue to preserve them only at the price of radical abstinence of their own.

The protection of future freedom also requires that the transition to climate neutrality be initiated in good time. In concrete terms, this requires the early formulation of transparent guidelines for the further development of greenhouse gas reduction, which provide orientation for the necessary development and implementation processes and give them a sufficient degree of development pressure and planning certainty.

5. The legislature itself must make the necessary regulations on the size of the total permissible emission quantities for certain periods. Simple parliamentary participation through approval by the Bundestag of ordinances of the Federal Government cannot replace a legislative procedure in the regulation of permissible emission quantities, because here it is precisely the special public function of the legislative procedure that is the reason for the necessity of statutory regulation. It is true that in areas of law that are constantly subject to new developments and knowledge, a legal fixation can also be detrimental to the protection of fundamental rights. However, the idea of dynamic protection of fundamental rights (fundamentally BVerfGE 49, 89 <137>), which is the basis there, cannot be held against the requirement of legislation here. The challenge is not to keep pace with development and knowledge in order to protect fundamental rights, but rather to make further developments for the protection of fundamental rights possible in the first place.

FEDERAL CONSTITUTIONAL COURT

- 1 BvR 2656/18 -

- 1 BvR 78/20 -

- 1 BvR 96/20 -

- 1 BvR 288/20 -



ON BEHALF OF THE PEOPLE

In the proceedings concerning the constitutional complaints

- I. 1. of Mr G...,
2. of Mr K...,
3. of the minor K...,
legally represented by K... and K...,
4. of Prof. Dr. Q...,
5. of Mr B...,
6. of Mr J...,
7. of Mr. v. F...,
8. of Mr J...,
9. of Mr S...,
10. of Mr R...,
11. of Prof. Dr. K...,
12. of the S... e.V.,
13. of the B... e.V.,

- Authorised representatives:1. ... -

2. ... -

1. the failure of the Federal Republic of Germany to adopt appropriate legislation and measures to combat climate change,

2. Section 3(1), Section 4(1) in conjunction with Annex 2, Section 4(6) of the Federal Climate Protection Act (KSG) of 12 December 2019 (Federal Law Gazette I page 2513).

- 1 BvR 2656/18 -,

- II. 1. Mrs P...,
- 2. of Mrs M...,
- 3. of Mrs B...,
- 4. of Mrs B...,
- 5. of Mrs B. R...,
- 6. of Mr S...,
- 7. of Mr F...,
- 8. of Mr A...,
- 9. of Mrs R...,
- 10. of Mr M...,
- 11. of Mr M...,
- 12. of Mr M...,
- 13. of Mr P...,
- 14. of Mr T...,
- 15. of Mr T...,

- Authorised representative:... -

against 1 .§ 3 paragraph 1; § 4 paragraph 1 in conjunction with Annex 1 and Annex 2, § 4 (3), (5) and (6), § 8 and § 9 of the Federal Climate Protection Act (KSG) of 12 December 2019 (Federal Law Gazette I page 2513),

2.the persistent failure of the federal legislature and the federal government to take appropriate and prognostically sufficient measures to comply with the remaining national and population-based CO2 budget (3.465 gigatonnes of CO2 from 2020)

- 1 BvR 78/20 -,

- III. 1. of the minor S...,
legally represented by B... and S...,
- 2. of Mr S...,
- 3. of the minor U...,
legally represented by U... and U...,
- 4. of the minor S...,
legally represented by S... and S...,
- 5. of the minor H...,
legally represented by H... and H...,
- 6. of the minor L...,
legally represented by L... and L...,
- 7. of the minor J...,
legally represented by J... and J...,
- 8. of the minor E...,
legally represented by E... and E...,
- 9. of the minor F...,
legally represented by F... and F...,
- 10. of the minor S...,
legally represented by S... and S...,

- Authorised representative:... -

against 1 .§ 3 paragraph 1; § 4 paragraph 1 in conjunction with Annex 1 and Annex 2, § 4 (3), (5) and (6), § 8 and § 9 of the Federal Climate Protection Act (KSG) of 12 December 2019 (Federal Law Gazette I page 2513),

2.the persistent failure of the federal legislature and the federal government to take appropriate and prognostically sufficient measures to comply with the remaining national and population-based CO2 budget (3.465 gigatonnes of CO2 from 2020)

- 1 BvR 96/20 -,

- IV. 1. Mrs N...,
2. of Mrs B...,
3. of Mr B...,
4. of the minor B...,
legally represented by B... and B...,
5. of the minor B...,
legally represented by B... and B...,
6. of Mr S...,
7. of Mrs B...,
8. of Mr B...,
9. of Mr R...,

- Authorised representative:... -

infringement of section 3(1), section 4(1) in conjunction with Schedules 1 and 2 and section 4(3) of the Federal Climate Protection Act (Bundes-Klimaschutzgesetz - KSG) of 12 December 2019 (Federal Law Gazette I page 2513) in conjunction with Article 5 of Regulation (EU) 2018/842 of 30 May 2018.

- 1 BvR 288/20 -

the Federal Constitutional Court - First Senate - with
the participation of the judges

President Harbarth,
Paul,
Baer,
Britz,
Ott,
Christ,
Radtke,
Härtel

decided on 24 March 2021:

1. The constitutional complaint of the complainants re 12) and 13) in the proceedings 1 BvR 2656/18 is dismissed.
2. The second sentence of section 3(1) and the third sentence of section 4(1) of the Federal Climate Protection Act of 12 December 2019 (Federal Law Gazette I, page 2513), in conjunction with Annex 2, are incompatible with fundamental rights insofar as there is no provision on the updating of the reduction targets for periods from 2031 onwards that satisfies the constitutional requirements in accordance with the grounds.
3. For the rest, the constitutional complaints are dismissed.
4. The legislature is obliged to regulate the updating of the reduction targets for periods from 2031 onwards by 31 December 2022 at the latest in accordance with the grounds. The second sentence of section 3(1) and the third sentence of section 4(1) of the Federal Climate Protection Act of 12 December 2019 (Federal Law Gazette I page 2513) in conjunction with Annex 2 shall remain applicable.
5. The Federal Republic of Germany shall reimburse the complainants in the proceedings 1 BvR 96/20 and 1 BvR 288/20 and the complainants re 1) to 11) in the proceedings 1 BvR 2656/18 half of their necessary expenses. In the proceedings 1 BvR 78/20, the Federal Republic of Germany shall reimburse the complainants one quarter of their necessary expenses.

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Gründe:

A.

The four constitutional complaints are directed against individual provisions of the 1 Federal Climate Protection Act (hereinafter: Climate Protection Act <KSG>) of 12 December 2019 (Federal Law Gazette I p. 2513) and against the failure to take further measures to reduce greenhouse gas emissions. In their constitutional complaints, the complainants primarily claim that the state has not taken sufficient measures to reduce greenhouse gases, especially carbon dioxide (CO₂), as soon as possible, which are necessary to keep global warming at 1.5 °C or at least well below 2 °C. They object to specific provisions of the Climate Protection Act. They oppose specific provisions of the Climate Protection Act. With the reduction of CO₂ emissions

regulated in the Climate Protection Act, the temperature threshold can be reached.

of 1.5 °C cannot be complied with. The complainants base their constitutional complaints primarily on fundamental rights obligations to protect from Article 2 (2) sentence 1 and from Article 14 (1) of the Basic Law, on a fundamental right to a humane future and a fundamental right to the ecological minimum subsistence level, which they derive from Article 2 (1) in conjunction with Article 20a and from Article 2 (1) in conjunction with Article 1 (1) sentence 1 of the Basic Law, as well as, with regard to future emission reduction obligations for periods after 2030, generally on the rights of freedom.

I.

1. the Climate Protection Act of 12 December 2019 responds to the legislative 2
The need for increased climate protection efforts, as seen by the Federal Parliament (BTDrucks 19/14337, p. 17).

a) The purpose of the law is to protect against the effects of global 3
climate change, the fulfilment of national climate protection targets and compliance with European targets (Article 1 sentence 1 KSG). According to section 1 sentence 3 KSG, the basis for this is, on the one hand, the obligation under the Paris Agreement (see Act on the Paris Agreement of 12 December 2015, of 28. September 2016, BGBl II p. 1082, UNTS No. 54113, hereinafter: Paris Agreement <PA>), according to which the increase in the global average temperature must be limited to well below 2 °C and if possible to 1.5 °C above the pre-industrial level in order to keep the effects of global climate change as low as possible, as well as the commitment of the Federal Republic of Germany to pursue greenhouse gas neutrality by 2050 as a long-term goal.

The specific climate protection goals of the Act are formulated in the challenged § 3 4
Para. 1 KSG: According to this, greenhouse gas emissions are to be reduced step by step; by the target year 2030, they are to be reduced by at least 55% compared to the year 1990. This reduction rate applies to all greenhouse gas emissions (cf. Bundestag printed paper 19/14337, p. 19); section 3(1) KSG does not distinguish between emissions in sectors covered by emissions trading and in the so-called burden-sharing sector, which is covered by Regulation (EU) 2018/842 of the European Parliament and of the Council of 30 May 2018 establishing binding national emission ceilings. May 2018 setting binding national annual targets for the reduction of greenhouse gas emissions for the period from 2021 to 2030 as a contribution to climate action to meet the commitments under the Paris Agreement and amending Regulation (EU) No 525/2013 (see OJ L 156/26, hereinafter: Climate Change Regulation). Section 4 (1) sentence 3 of the Climate Protection Act in conjunction with Annex 2, which is also challenged, regulates the permissible annual emission quantities in the various sectors corresponding to the reduction quota for the target year 2030. This results in a concrete emission reduction path until 2030. This does not include greenhouse gas emissions from land-use change and forestry and emissions from international aviation and maritime transport attributable to Germany (cf. BTDrucks

19/14337, p. 26 f.).

With Section 3 (1) KSG, the federal legislature has taken into account the provisions already contained in plans and pro-

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The climate protection targets set for the period from 2020 onwards are standardised by law in the German Climate Change Programme. For the period until 2020, Germany had set itself the goal of reducing its greenhouse gas emissions by 40 % compared to 1990. According to the Federal Government, this was aligned with the long-term goal of preventing global warming of more than 2 °C (cf. Federal Ministry for the Environment, Nature Conservation and Nuclear Safety <BMU>, Aktionsprogramm Klimaschutz 2020, Kabinettsbeschluss vom 3. Dezember 2014, p. 7 ff.). The basis for the climate protection targets for the period from 2020 was already the Climate Protection Plan 2050 (BMU, Klimaschutzplan 2050, Klimaschutzpolitische Grundsätze und Ziele der Bundesregierung, 2016) and the Climate Protection Programme 2030 (Klimaschutzprogramm 2030 der Bundesregierung zur Umsetzung des Klimaschutzplans 2050, 8 October 2019) before the Climate Protection Act was enacted. The Climate Protection Plan 2050 contains the long-term climate policy goal of reducing emissions by 80 to 95% by 2050 compared to 1990. At the same time, it contains an emissions reduction path to achieve this goal. For example, it provides for a greenhouse gas reduction of at least 55% by 2030 compared to 1990, as is now also regulated in Article 3 para. 1 sentence 2 KSG. In 2040, greenhouse gas emissions are to be reduced by at least 70 % compared to 1990 - there is no corresponding regulation for the target year 2040 in the Climate Protection Act. To implement the Climate Protection Plan 2050, the German government adopted the Climate Protection Programme 2030 in 2019. In contrast to the Climate Protection Plan 2050, the Climate Protection Programme 2030 no longer describes the long-term target for the year 2050 as a "greenhouse gas reduction of 80 to 95 % compared to 1990", but instead refers to the climate target of greenhouse gas neutrality in 2050.

b) The Climate Protection Act has the character of a framework law and is intended to trans-

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The draft government bill should make it clear which measures are to be taken to reduce greenhouse gases in the various sectors. The explanatory memorandum to the government draft states:

"The legally standardised climate protection targets and annually decreasing, still permissible annual emission quantities of the individual sectors make the necessary greenhouse gas reductions foreseeable. This clear legal regulation ensures planning certainty. At the same time, responsibility for compliance in the individual sectors is assigned on the basis of the sectoral targets of the Climate Protection Plan 2050. This ensures compliance with the 2030 climate protection targets and implements the European requirements.

In such a framework law, the goals and principles of climate

protection policy are anchored - similar to the Budget Principles Act for budgetary policy. This does not directly reduce CO2

but to put climate policy as a whole on a solid footing and make it binding. In order to actually achieve the climate protection targets, the climate protection measures must be taken in the sectors that were initially adopted by the federal government with the Climate Protection Programme 2030 following the Climate Protection Plan 2050. This will require the amendment of various sectoral laws" (BTDrucks 19/14337, p. 17).

2. Already before, on 4 November 2016, the Paris Agreement was in force 7 entered into force. Art. 2 para. 1 lit. a PA contains the agreement to keep the increase in average global temperature well below 2 °C above the pre-industrial level and to undertake efforts to limit the temperature increase to 1.5 °C above the pre-industrial level; the German legislator has referred to this in § 1 sentence 3 KSG.

Art. 2 PA reads in German

translation:8

(1) This Convention aims to strengthen the global response to the threat of climate change in the context of sustainable development and poverty eradication efforts by improving the implementation of the Framework Convention, including its objective to, inter alia

a) the increase in the Earth's average temperature is kept well below 2°C above pre-industrial levels and efforts are made to limit the temperature increase to 1.5°C above pre-industrial levels, as it has been recognised that this would significantly reduce the risks and impacts of climate change;

b) enhancing the capacity to adapt to the adverse effects of climate change and promoting resilience to climate change and low greenhouse gas emissions development in a way that does not threaten food production;

c) align financial flows with a pathway towards low greenhouse gas emissions and climate resilience.

(2) This Convention is implemented as an expression of justice and the principle of common but differentiated responsibilities and respective capabilities in the face of differing national circumstances.

The Paris Agreement does not specify greenhouse gas reduction quotas or 9

emission ceilings that would have to be complied with in order to achieve the target. Rather, it is left to the Parties to determine the measures to achieve the targets. According to Art. 4 para. 2 sentence 1 PA, the Parties have to define so-called "nationally determined contributions" that they intend to achieve. According to Art. 4 para. 2 sentence 2 PA, they must take national mitigation measures to achieve these contributions. New nationally determined contributions must be submitted every five years (Art. 4 para. 9 PA). According to Art. 3 PA, ambitious efforts to achieve the objective stated in Art. 2 PA are to be made by all Parties, increasing over time (Art. 3 sentence 2, Art. 4 para. 3 PA). In this respect, the European Union has committed to reduce its greenhouse gas emissions by at least 40% by 2030 compared to 1990 (Commission Implementing Decision <EU> 2020/2126 of 16 December 2020 determining the annual emission allocations to Member States for the period 2021 to 2030 pursuant to Regulation <EU> 2018/842 of the European Parliament and of the Council, OJ L 426/58).

The United Nations has reviewed the submissions to the Paris Agreement. 10 evaluated. In its report, the Secretariat of the United Nations Framework Convention on Climate Change came to the conclusion that the greenhouse gas emissions expected worldwide by 2030 are incompatible with reduction pathways leading to a limitation of global warming to 1.5 °C or even 2 °C (United Nations Framework Convention on Climate Change <UNFCCC>, Conference of the Parties, Aggregate effects of the intended nationally determined contributions: an update, Doc FCCC/CP/2016/2 of 2 May 2016, p. 9 et seq, Fig. 2 on p. 12). Rather, the expected emissions were consistent with pathways that projected a 3 °C temperature increase by 2100 (IPCC, Special Report, 1.5 °C Global Warming, Summary for Policymakers, 2018, p. 22, D1.1).

3. The climate protection target set by the European Commission for the period from 2021 to 2030 is 11

The European Union's target of reducing greenhouse gas emissions across Europe by 40% compared to 1990 is to be achieved by reducing greenhouse gases subject to emissions trading by 43% and greenhouse gases not subject to emissions trading by 30% compared to 2005 (see European Council, EUCO 169/14, European Council meeting <23/24 October 2014> - Conclusions, 2014, p. 1). The European Union's climate change target has recently been raised from 40% to 55% (see European Council, EUCO 22/20, European Council meeting <10/11 December 2020> - Conclusions, 2020, p. 5).

The emissions trading sector covers greenhouse gas emissions from large 12 plants, energy-intensive industries and, since 2012, aviation. The current Emissions Trading Directive (Directive <EU> 2018/410 of the European Parliament and of the Council of 14 March 2018 amending Directive 2003/87/ EC to support cost-effective emission reductions and to promote low-carbon investments and Decision <EU> 2015/1814,

OJ L 76/3) provides for emissions trading that the total quantity of allowances available will be reduced annually in a linear fashion from 2021 onwards in order to achieve the targeted emission reduction (cf. recital No. 2 of the Directive). <EU> 2018/410). Here, no specific reduction quota is imposed on the individual member state.

In contrast, the burden-sharing area covers a large part of the emissions, 13 which do not fall within the scope of emissions trading. In this area, each Member State is subject to a percentage reduction quota at the outset. The burden sharing for the period from 2013 to 2020 was regulated in the so-called burden sharing decision (Decision No. 406/2009/EC of the European Parliament and of the Council of 23 April 2009 on the effort of Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020, OJ L 140/136). For the period from 2021 to 2030, the emission reductions in the burden-sharing sector are regulated in the Climate Protection Ordinance. According to Article 4 (1) in conjunction with Annex I of the Climate Protection Ordinance, Germany is obliged to reduce its greenhouse gas emissions in the burden-sharing area by 38% by 2030 compared to 2005. The regulation does not limit itself to the target, but regulates a concrete overall reduction path. This lays down the minimum reduction obligation of the member state for each year in the form of a uniform emission cap for all emissions covered. Member States are free to pursue more ambitious targets. The regulation also provides for various flexibility mechanisms in Art. 5. According to Article 5 (1) to (3), Member States may compensate for over- and under-achievement in their own budgets. In addition, Art. 5 (4) and (5) regulate possibilities of compensation between the Member States.

4. Each challenged by at least one of the four constitutional complaints 14 are § 3 par. 1, § 4 par. 1 in conjunction with Annex 1 and 2, § 4 par. 3 sentence 2 KSG in conjunction with Art. 5 of the Climate Protection Ordinance, § 4 paras. 5 and 6, § 8 and § 9 KSG. The provisions have the following wording:

§ 3 National climate protection targets

(1) Greenhouse gas emissions will be gradually reduced compared to 1990. A reduction quota of at least 55 percent applies until the target year 2030.

[...]

4 Permissible annual emission quantities, authorisation to issue ordinances

(1) In order to achieve the national climate protection targets pursuant to section 3 subsection 1, annual reduction targets shall be set by specifying annual emission levels for the following sectors:

1. Energy industry,
2. Industry,
3. Traffic,
4. Building,
5. Agriculture,
6. Waste management and miscellaneous.

The emission sources of the individual sectors and their delimitation are shown in Annex 1. The annual emission quantities for the period up to 2030 are based on Annex 2. In the energy sector, greenhouse gas emissions decrease as steadily as possible between the specified annual emission quantities. For periods from 2031 onwards, the annual reduction targets shall be updated by statutory order pursuant to subsection 6. The annual emission levels shall be binding insofar as this Act refers to them. Subjective rights and legal positions which may be sued shall not be established by or on the basis of this Act.

[...]

(3) If the greenhouse gas emissions from 2021 onwards in a sector exceed or fall short of the respective permissible annual emission quantity, the difference shall be credited equally to the remaining annual emission quantities of the sector until the next target year specified in Article 3(1). The requirements of the European Climate Protection Regulation shall remain unaffected.

[...]

(5) The Federal Government shall be authorised to amend the annual emission levels of the sectors in Annex 2 by ordinance without the consent of the Bundesrat, with effect from the beginning of the next calendar year. These changes must be consistent with the achievement of the climate protection targets of this Act and with the requirements of Union law. The statutory order shall require the consent of the German Bundestag. If the German Bundestag has not dealt with the ordinance within three weeks of its receipt, it shall be deemed to have given its consent to the unamended ordinance.

(6) In 2025, the German government specifies annually decreasing emission levels for further periods after the year 2030 through

statutory instrument. These must be consistent with the achievement of the climate protection targets of this Act and with the requirements of Union law. If annually decreasing emission levels are specified for periods after 2030, the statutory instrument shall require the consent of the German Bundestag. If the German Bundestag has not dealt with the ordinance within six weeks of its receipt, it shall be deemed to have given its consent to the unamended ordinance.

Annex 1 (to §§ 4 and 5) Sectors

Sectors	Description of the source categories of the common men report format (Common Reporting Formats - CRF)	[...]
1. Energy industry	Combustion of fuels in the energy industry; Pipeline transport (other transport); Fugitive emissions from fuels	[...]
2.	Industrial Fuel combustion in manufacturing and construction; industrial processes and product use; CO ₂ transport and storage	[...]
3.	Buildings Combustion of fuels in: Trade and authorities; households. Other activities related to the combustion of fuels (especially in military facilities)	[...]
4.	Transport Transport (domestic civil air transport; road transport; rail transport; domestic shipping) without pipeline transport	[...]
5. Agriculture	Agriculture; Combustion of fuels in agriculture, forestry and fisheries	[...]
6. Waste management and other	Waste and waste water; other	[...]

Sectors	Description of the source categories of the common Report format (Common Reporting Formats - CRF)	[...]
7. Land use, and Land-use change and	Forest, arable land, grassland, wetlands, settlements; Wood products; changes between land-use and forestry categories	[...]

Appendix 2 (to § 4) Permissible annual emission quantities

Annual emission volume in million tonnes CO ₂ equivalent	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Energy industry	280		257								175
Industry	186	182	177	172	168	163	158	154	149	145	140
Building	118	113	108	103	99	94	89	84	80	75	70
Traffic	150	145	139	134	128	123	117	112	106	101	95
Agriculture	70	68	67	66	65	64	63	61	60	59	58
Waste management and other	9	9	8	8	7	7	7	6	6	5	5

8 Emergency programme in the event of annual emission limits being exceeded

(1) If the emission data pursuant to section 5 subsections (1) and (2) show an exceedance of the permissible annual emission quantity for a sector in a reporting year, the Federal Ministry responsible pursuant to section 4 subsection (4) shall submit to the Federal Government within three months of the submission of the assessment of the emission data by the Council of Experts on Climate Issues pursuant to section 11 subsection (1) an emergency programme for the respective sector which ensures compliance with the annual emission quantities of the sector for the following years.

(2) The Federal Government shall deliberate on the measures to be taken in the sector concerned or in other sectors or on cross-sectoral measures and shall adopt them as soon as possible. In doing so, it may take into account the existing scope of the European Climate Change Regulation and amend the annual emission levels of the sectors pursuant to section 4 subsection (5). Before the draft

resolution on the measures is prepared, the greenhouse gas reduction assumptions on which the measures are based shall be submitted to the Council of Climate Experts for review. The review

The results of the audit are attached to the draft resolution.

(3) The Federal Government shall inform the German Bundestag of the measures adopted.

(4) For the energy sector, paragraphs 1 to 3 shall be applied accordingly every three years starting with the reporting year 2023.

§ 9 Climate protection programmes

(1) The Federal Government shall adopt a climate protection programme at least after each update of the Climate Protection Plan; in addition, if targets are not met, the existing climate protection programme shall be updated to include measures pursuant to Article 8(2). In each climate protection programme, the Federal Government shall determine which measures it will take to achieve the national climate protection targets in the individual sectors, taking into account the latest climate protection projection report pursuant to section 10 subsection (2). The decisive factor for the measures pursuant to sentence 2 shall be compliance with the permissible annual emission levels specified pursuant to section 4 in conjunction with Annex 2. In addition, the Federal Government shall specify which measures it will take to maintain the net sink in land use, land use change and forestry.

(2) The climate protection programme shall be adopted no later than in the calendar year following the update of the Climate Protection Plan. Within six months of the update of the Climate Protection Plan, the federal ministries responsible for the sectors pursuant to Article 4(4) shall propose measures that are suitable for achieving the additional greenhouse gas reductions required in the respective sectors. In addition to scientific estimates of the likely greenhouse gas reduction effects, the proposed measures also contain scientific assessments of possible economic, social and other ecological consequences. These assessments also include, as far as possible, effects on the efficiency of the use of natural resources. The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, in consultation with the Federal Ministry for Economic Affairs and Energy, determines the anticipated overall greenhouse gas reduction effect of the proposed measures.

(3) For each climate protection programme, the Federal Government involves the Länder, municipalities, business associations and civil society associations as well as the

The Federal Government's scientific platform on climate protection and accompanying scientific committees.

Also challenged is section 4 (3) sentence 2 KSG in conjunction with Art. 5 of the Klima-15
The wording of Article 5 of Regulation (EU) 2018/842 is as follows:

Art. 5 Flexibility through anticipation, carry-over to subsequent years and transfer to other Member States

(1) For the years 2021 to 2025, a Member State may carry forward an amount of up to 10% of its annual emission allocation for the following year.

(2) For the years 2026 to 2029, a Member State may carry forward an amount of up to 5% of its annual emission allocation for the following year.

(3) A Member State whose greenhouse gas emissions in a given year are below its annual emission allocation for that year, after taking into account the use of the flexibilities provided for in this Article and in Article 6, may

a) for the year 2021, carry forward the surplus part of its annual emissions allocation to subsequent years of the period until 2030; and

b) for the years 2022 to 2029, carry forward to subsequent years of the period up to 2030 the surplus of its annual emission allocation up to a volume of 30 % of its annual emission allocation up to the respective year.

(4) A Member State may transfer up to 5 % of its annual emission allocation for a given year to another Member State for the years 2021 to 2025 and up to 10 % for the years 2026 to 2030. The receiving Member State may use this amount for compliance purposes in accordance with Article 9 for that year or for later years of the period up to 2030.

(5) A Member State whose verified greenhouse gas emissions in a given year are below its annual emission allocation for that year, taking into account the use of the flexibilities provided for in paragraphs 1 to 4 of this Article and in Article 6, may transfer the excess part of its annual emission allocation to other Member States. The receiving Member State may use this quantity for compliance purposes in accordance with Article 9 for that year or for subsequent years of the period up to 2030.

(6) Member States may use the revenue generated by the transfer of annual emission allocations in accordance with paragraphs 4 and 5 to combat climate change in the Union or in third countries. Member States shall inform the Commission of measures taken pursuant to this paragraph.

(7) Any transfer of annual emission allocations under paragraphs 4 and 5 may be the result of a greenhouse gas emission reduction project or programme implemented in the selling Member State and reimbursed by the receiving Member State, provided that there is no double counting and traceability is ensured.

(8) Member States may make unlimited use of project credits issued under Article 24a(1) of Directive 2003/87/EC for the purposes of compliance with Article 9 of this Regulation, provided that there is no double counting.

II.

1. the actual background of anthropogenic climate change, its consequences 16 and the risks are described in the Assessment Reports and Special Reports of the Intergovernmental Panel on Climate Change (IPCC). These are regarded as reliable summaries of the current state of knowledge on climate change and are used as such by the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, the Federal Environment Agency (UBA) or the German Advisory Council on the Environment (hereinafter: German Advisory Council <SRU>) as well as by the European Union and at international level. The IPCC is an intergovernmental committee that was established by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) in 1988 (Memorandum of Understanding between the UNEP and the WMO on the IPCC of 8. May 1989) and confirmed by the United Nations General Assembly (UN General Assembly Resolution 43/53 of 6 December 1988, Protection of global climate for present and future generations of mankind, E 5, in: General Assembly, 43rd session, Doc A 43/49).

The IPCC's task is to assess in a comprehensive and objective manner the state 17 of scientific research on climate change and thus provide a basis for science-based decision-making. To this end, it compiles the findings of the scientific, technical and socio-economic literature currently published worldwide. The IPCC does not conduct research itself, but summarises the statements of these publications in status reports and special reports and evaluates them from a scientific perspective. The authors must agree on the respective assessment of the state of affairs, indicating confidence levels, and clearly present conflicting views, knowledge gaps and uncertainties (see IPCC, Guidance Note for Lead Authors of the IPCC Fifth Assessment Report on Consistent Treatment of Uncertainties, 2010; see also IPCC, Special Report, 1.5 °C Global Warming, Summary for Policymakers, 2018, p. 8 fn. 3). The results are again

reviewed by independent experts; the Summary for Policymakers is then adopted by the member governments in a plenary session. Only information that is also contained in the overall report may be used. The panel of authors, composed according to scientific expertise, decides whether the reformulations proposed by the governments are correct (see IPCC, Procedures for the Preparation, Review, Acceptance, Adoption, Approval and Publication of IPCC reports, 2013; see also Bolle, Das Intergovernmental Panel on Climate Change <IPCC>, 2011, p. 108 ff. 108 et seq.; Stoll/Krüger, in: Proelß <ed.>, Internationales Umweltrecht, 2017, 283 <304> with further references; Rahms-torf/Schellnhuber, Der Klimawandel, 9th ed. 2019, p. 84 et seq.).

2. The currently observed, by climate-historical comparison strongly accelerated 18 According to almost unanimous scientific opinion, global warming is essentially due to the change in the material balance of the atmosphere caused by anthropogenic emissions; the increase in the CO₂ concentration is particularly emphasised (IPCC, 5th Assessment Report, Climate Change 2013, Scientific Basis, Summary for Political Decision-Makers, 2016, p. 11; UBA, Climate and Greenhouse Effect, 2020, p. 2 f.). Compared to pre-industrial times, the atmospheric CO₂ concentration has fallen by 40 %, primarily from fossil fuel emissions and secondarily from deforestation and other land use changes (IPCC, op. cit., p. 9).

The relevant interrelationships can be summarised in simplified terms as follows summarise: The human-induced increase in the concentration of greenhouse gases in the atmosphere changes the Earth's radiation balance and thus leads to global warming. The greenhouse gases in the Earth's atmosphere absorb the heat radiation emitted by the Earth and radiate parts of it back to the Earth's surface. The heat radiation emitted by the greenhouse gases thus arrives at the Earth's surface as additional heat radiation. To compensate for incoming and outgoing heat, the earth's surface radiates more heat. This makes the atmosphere near the ground warmer (IPCC, op. cit., p. 11 f.; Rahmstorf/Schellnhuber, Der Klimawandel, 9th ed. 2019, p. 12 f., 30 ff.; UBA, Klima und Treibhauseffekt, 2020, p. 2). Up to what level and at what rate the temperature continues to rise depends on the proportion of greenhouse gases in the atmosphere and thus to a large extent on the volume of anthropogenically emitted greenhouse gases, in particular CO₂ emissions (IPCC, op. cit., pp. 17 f., 26). This is because there is an almost linear relationship between the total amount of climate-impacting greenhouse gases emitted and the increase in mean surface temperature (SRU,

Demokratisch regieren in ökologischen Grenzen - Zur Legitimation von Umweltpolitik, Special Report, 2019, p. 36). Without additional measures to combat climate change, a global temperature increase of more than 3 °C by 2100 is currently considered likely (BMU, Klimaschutz in Zahlen, 2019 edition, p. 6 f.).

3. The greenhouse effect has a wide range of impacts on the environment and the earth's climatic 20

ma. The ice masses (cryosphere) are affected. The consequences of global warming are the decline of polar sea ice, the melting of continental ice sheets in Greenland and Antarctica, and the glacier shrinkage that is already visible worldwide. These changes in the ice masses contribute significantly to rising sea levels (IPCC, 5th Assessment Report, Climate Change 2013, Scientific Basis, Summary for Policymakers, 2016, pp. 7, 23 f.; Rahmstorf/Schellnhuber, Der Klimawandel, 9th ed.

2019, pp. 57, 59, 63 f.). By 2100, global mean sea level rise is projected to be 26 to 77 cm at 1.5 °C global warming. With 2 °C warming, this will be about 10 cm more (IPCC, Special Report, 1.5 °C Global Warming, Summary for Policymakers, 2018, p. 11). In addition, there is evidence that as a result of the melting of the Greenland Ice Sheet and other freshwater inputs into the North Atlantic, the thermo- haline circulation of the North Atlantic (Atlantic overturning circulation) is weakening in strength. A strong weakening would have a major impact on the weather systems in Europe and North America, among other things. The North Atlantic region would cool rapidly by several degrees. The southern hemisphere would warm up even more. Further impacts are expected to be an increase in winter storms, precipitation and flooding in northern Europe and a decrease in precipitation in southern Europe. For the Sahel, a decrease in precipitation and associated droughts would be expected (IPCC, Special Report on the Ocean and the Cryosphere in a Changing Climate, Main Statements, 2020, p. 5; Rahmstorf/ Schellnhuber, Der Klimawandel, 9. Aufl. 2019, p. 66 f.; SRU, Governing democratically within ecological limits - On the legitimacy of environmental policy, Special Report, 2019, p. 38; IPCC, Special Report, The Ocean and the Cryosphere in a Changing Climate, 2019, pp. 618, 621 f.). The climate change-induced rise in temperature also has an impact on the position and strength of the jet stream and thus on global wind systems, which can lead to exceptionally long-lasting major and extreme weather events such as heavy precipitation, floods, hurricanes, heat waves and droughts (Rahmstorf/Schellnhuber, op. cit., pp. 68 ff., 72; SRU, op. cit., p. 38 f.).

So-called tipping points are considered to be a particular threat to ecological stability. tipping point processes in the climate system, because they can have far-reaching environmental impacts. Tipping elements are parts of the Earth system that have a special significance for the global climate and which change abruptly and often irreversibly with increasing stress. Examples include the permafrost soils in Siberia and North America, the ice masses in the polar zones, the Amazon rainforest

and significant air and ocean current systems. Small changes in an environmental parameter relevant to them - such as exceeding a certain temperature threshold - can transform these tipping elements into a qualitatively different state if the value of the parameter is already close to a critical point, the tipping point. There can also be interactions between the tipping elements. For example, a melting of the Greenland ice could change the Atlantic circulation, which in turn could lead to the destabilisation of ice in the Antarctic. A cascade-like change of the Earth system through a series of such interactions is not ruled out, but is currently still considered little researched (on

tipping points: SRU, loc. cit., p. 39 f. with further references).

4. With a global temperature increase of more than 3 °C by the year 2100, the 22 without additional measures to combat climate change is considered likely, drastic consequences of global warming and climate change are expected (BMU, Klimaschutz in Zahlen, Ausgabe 2019, p. 6 f.); however, even with a smaller rise in temperature, climate change already has significant negative consequences for people and societies (a). In Germany, too, climate change is already having numerous direct impacts, which could worsen drastically as global warming continues (b). In addition, Germany could also be indirectly affected by the consequences of climate change in other parts of the world through the increase in climate-related flight and migration to Europe (c).

a) The consequences of recent climate-related extreme events such as heat waves, droughts, 23

Heavy rainfall events, floods, hurricanes, forest fires and wildfires demonstrate, according to scientific assessment, a significant vulnerability of humans to climate change. Consequences of such climate-related extreme events include disruption of food production and water supply, damage to infrastructure and settlements, illnesses and deaths, and consequences for people's mental health and well-being (IPCC, 5th Assessment Report, Climate Change 2014, Consequences, Adaptation and Vulnerability, Summary for Policymakers, 2016, WGII-6). The main threat posed by climate change is to human health. Weather and climate changes can lead to an increase in infectious diseases and non-communicable diseases such as allergies, or to an increase in the symptoms of existing cardiovascular and respiratory diseases. Extreme events such as storms, floods, avalanches or landslides directly endanger life and limb; they can also lead to social and psychological burdens and disorders such as stress, anxiety and depression (UBA, Monitoring Report 2019 on the German Strategy for Adaptation to Climate Change, 2019, p. 31).

b) Climate change is already having multiple impacts in Germany as well. 24 Compared to pre-industrial times, the annual mean temperature has increased by 1.5 °C by 2018 (UBA, op. cit., p. 7). There is an increased likelihood of the occurrence of extreme heat days. The climate change is already threatening change due to heat events also affects human health in Germany (Bundesregierung, Zweiter Fortschrittsbericht zur Deutschen Anpassungsstrategie an den Klimawandel, 2020, p. 11; see also UBA, Vulnerabilität Deutschlands gegenüber dem Klimawandel, 2015, p. 603). The duration of summer heat waves over Western Europe has roughly tripled since 1880. If greenhouse gas emissions continue unabated, climate projections indicate that these developments will worsen significantly. The number of heat waves could increase by the end of the 21st century by up to five events per year in northern Germany and by up to 30 events per year in southern Germany. The probability of temperature records is also likely to increase drastically. Especially during the summer months, a tenfold increase in such events is considered realistic (Deutschländer/Mächel, in: Brasseur/Jacob/Schuck-Zöllner

<ed.>, Klimawandel in Deutschland, 2017, p. 55).

The global rise in sea level will also have an impact in Germany. 25
In the last 100 years, sea level has risen by about 20 cm in the German Bight and by about 14 cm on the German Baltic Sea coast (Deutscher Wetterdienst, Nationaler Klimareport, 2017, p. 5). In the case of unmitigated emissions, a rise in sea level of well over one metre is assumed by the end of the 21st century. This does not include the possibility of the ice sheets collapsing (Deutscher Wetterdienst, op. cit., p. 29). Long-term changes in mean sea level can significantly increase the likelihood of particularly high storm surge levels on the North Sea and Baltic Sea (Weiße/Meinke, in: Brasseur/Jacob/Schuck-Zöllner <editorial>, Klimawandel in Deutschland, 2017, p. 78). This means that the German coastal regions are also exposed to an increased risk from flooding. In Germany, areas on the North Sea coast that are up to five metres above sea level and areas on the Baltic Sea coast that are up to three metres above sea level are considered at risk. This affects an area of about 13,900 square kilometres with 3.2 million people living there. Cities near the coast, such as Hamburg, Bremen, Kiel, Lübeck, Rostock and Greifswald, are particularly at risk from storm surges (UBA, Monitoringbericht 2019 zur Deutschen Anpassungsstrategie an den Klimawandel, 2019, p. 72).

The effects of climate change are already becoming apparent in Germany in the 26 groundwater recharge (UBA, op. cit., p. 48 f.). Rising temperatures trigger an overall increase in evaporation, with the result that less water can seep away and reach the groundwater. Months with below-average groundwater levels are becoming significantly more frequent compared to the long-term average. A particularly pronounced trend towards increased low groundwater levels is observed in the low-precipitation areas of north-eastern Germany. This applies above all to Brandenburg, Saxony-Anhalt and Mecklenburg-Western Pomerania. But low groundwater levels are also clearly visible in the regions with particularly high precipitation, i.e. in the low mountain ranges and in the area of the Alps (UBA, loc. cit., p. 48 f.). In addition, climate change is also changing the

del affects the water regime in Germany in various areas. For example, water availability decreases significantly in the summer half-year, the water temperature in Se- en increases, and the water temperature in the North Sea and Baltic Sea also increases (UBA, loc. cit., pp. 51 f., 56 f., 60 f., 82).

A particular challenge is considered to be the increase observed in Germany 27 of dryness and drought. The resulting drying out of the soil is particularly important for agriculture. Soil moisture is crucial for the degree of water supply to the plants. If the soil moisture drops below 30 % to 40 % of the so-called usable field capacity (nFK), the photosynthetic performance and thus the growth of the plants decrease considerably. In Germany, the average number of days with soil moisture values below 30 % nFK has increased significantly since 1961, both for light sandy soil and for heavy soil, which stores water better. The eastern part of Germany and the Rhine-Main area are particularly affected by the increasing soil dryness (UBA, op. cit., p. 26).

c) Climate change is also a significant cause of flight and migration. Hum- 28 people are also leaving their homes as a result of natural disasters and long-term environmental changes such as increased droughts and rising sea levels. In addition to health, the changes affect food production and supply in particular. The risk of famine is increasing. At the same time, climate change exacerbates social inequalities and poses the risk of violent conflicts as competition for water, food and grazing land intensifies. Increased warming exposes low-lying coastal areas, deltas and small islands to particular risks associated with sea-level rise, including increased saltwater intrusion, flooding and damage to infrastructure. As sea levels rise, islands and coastal zones are abandoned by their populations due to periodic or permanent flooding. Increasing climate change thus intensifies flight movements worldwide and could intensify international flight and migration towards Europe (cf. Wissenschaftlicher Beirat der Bundesregierung Globale Umweltveränderungen, Sondergutachten Klimaschutz als Weltbürgerbewegung, 2014, pp. 30, 64; United Nations High Commissioner for Refugees <UNHCR>, Climate change and population movements due to natural disasters, 2017, p. 1 et seq.; IP- CC, Special Report, 1.5 °C Global Warming, Summary for Policymakers, 2018, p. 12; BMU, Climate Protection in Figures, 2019 edition, p. 19; Rahms- torf/Schellnhuber, Der Klimawandel, 9th ed. 2019, pp. 71, 75; UNHCR, Global Report 2019, p. 29 f.).

5. Historically, more than half of all anthropogenic greenhouse gas 29 emissions since the beginning of industrialisation by today's industrialised countries. In recent years, emissions from newly industrialising countries in particular have risen sharply. Currently, the United States of America, the European Union, China, Russia and India are considered the largest emitters of greenhouse gases.

house gas emissions. Historically, Germany is responsible for 4.6% of greenhouse gas emissions. At 9.2 tonnes of CO₂, per capita CO₂ emissions in Germany in 2018 were almost twice as high as the global average of 4.97 tonnes per capita (BMU, Klimaschutz in Zahlen, Ausgabe 2020, p. 12).

Currently, with a world population share of about 1.1%, Germany is responsible for 30 The greenhouse gas emissions in Germany are responsible for almost 2% of greenhouse gas emissions per year. Greenhouse gas emissions in Germany have fallen since 1990: whereas 1.251 gigatonnes of greenhouse gas were emitted in 1990, the figure for 2019 was around 0.805 gigatonnes of greenhouse gas (BMU, loc. cit., pp. 12 f., 26 f.; all figures for 2019 in the report are estimates). The energy sector accounted for the largest share of greenhouse gas emissions in 2019. These come primarily from the combustion of fossil fuels in power plants. Compared to 1990, however, greenhouse gas emissions there had fallen by 45% by 2019 (BMU, loc. cit., p. 29 ff.). The industrial sector was the second largest emitter of greenhouse gas emissions in Germany in 2019. Greenhouse gases are primarily produced in the energy-intensive sectors of steel, chemicals, non-ferrous metals, cement, lime, glass and paper, as well as in industrial electricity supply. Compared to 1990, they will have

decreased by 34% by 2019 (BMU, op. cit., p. 33 ff.). In 2019, the transport sector was the third largest source of greenhouse gas emissions, with motorised road transport responsible for 94% of emissions. Compared to 1990, greenhouse gases from the transport sector decreased by 0.1 % in 2019 (BMU, op. cit., p. 36 ff.). This does not take into account international air and shipping traffic, whose emissions increased compared to 1990 (see UBA, Reporting under the United Nations Framework Convention on Climate Change and the Kyoto Protocol 2020, National Inventory Report on the German Greenhouse Gas Inventory 1990 - 2018, 2020, p. 162). This is followed by the building sector. It includes emissions from private households and emissions from trade, commerce and services. Here, emissions are mainly caused by the combustion of fossil fuels for the provision of space heating and hot water and decreased by 42 % by 2019 compared to 1990 (BMU, Klimaschutz in Zahlen, edition 2020, p. 40 f.). In the agricultural sector, land use and animal husbandry account for the largest shares of greenhouse gas emissions. The greenhouse gases methane and nitrous oxide are particularly relevant here. Compared to 1990, greenhouse gas emissions in the sector fell by 24% by 2019 (BMU, op. cit., p. 42 f.). Greenhouse gas emissions in the waste management sector fell by 76% by 2019 compared to 1990 (BMU, loc. cit., p. 44 f.).

III.

As things stand at present, human-induced climate change can be 31
can only be significantly halted by reducing CO2 emissions.

1. Human-induced climate change can be stopped by reducing the 32
increase in the concentration of anthropogenic greenhouse gas in the Earth's atmosphere is limited (for the following, see SRU, Für eine entschlossene Umweltpolitik in Deutschland und Europa, Umweltgutachten 2020, p. 39 ff. marginal no. 9 f. with further references). Due to the quantitative significance and particular longevity of CO₂, its concentration is of particular interest here. It is assumed that there is an approximately linear relationship between the total amount of anthropogenic CO₂ emissions accumulated over all times and the global temperature increase. Only small parts of anthropogenic emissions are absorbed by the oceans and the terrestrial biosphere; the legislator has assumed that for Germany 5% of the annual emissions of 1990
"net greenhouse neutral" (cf. the legal definition in Section 2 No. 9 KSG; see also IPCC, Special Report, 1.5 °C Global Warming, Summary for Policymakers, 2018, p. 28) and would be offset in particular by long-term sequestration in natural carbon sinks (e.g. soil, forests and water) (BTDrucks 19/14337, p. 24). The large remainder of anthropogenic CO₂ emissions, however, remains in the atmosphere in the long term, accumulates, contributes to an increase in the CO₂ concentration there and thus has an effect on the temperature of the earth. In contrast to other greenhouse gases, CO₂ does not leave the earth's atmosphere naturally within a period of time that is relevant for mankind. Every additional quantity of CO₂ that enters the Earth's atmosphere and is not artificially removed from it (see marginal 33 below) therefore permanently

increases the CO₂ concentration and leads to a further rise in temperature. This temperature rise remains even if the greenhouse gas concentration does not increase any further. Limiting global warming therefore requires limiting total anthropogenic CO₂ emissions (IPCC, op. cit., p. 16, C.1.3).

2. The further increase in CO₂ concentration in the Earth's atmosphere can be 33 mosphere primarily by reducing further CO₂ emissions in the sense that the generation of such greenhouse gas emissions is already avoided, for example by refraining from burning fossil fuels. In addition, measures can be considered that do not prevent CO₂ emissions from being produced, but which prevent them from being released into the atmosphere, or which remove CO₂ emissions from the atmosphere ("negative emissions"; also "carbon dioxide removal" - CDR and "carbon capture and storage" - CCS). The IPCC considers the future use of such technologies to be particularly necessary in order to achieve the goal of limiting global warming to 1.5 °C or returning it to this level. At the same time, the use of negative emission technologies is currently considered difficult to realise, at least on a larger scale; it is subject to considerable limitations and concerns regarding economic viability, technical feasibility, international coordinatability, as well as social consequences and, above all, new ecological risks (IPCC, Special Report, 1.5 °C Global Warming, Summary for Policymakers).

decision-makers, 2018, p. 21 C.3; UBA, Brief Position on Carbon Dioxide Removal from the Atmosphere (so-called "negative emissions"), 2019; SRU, Environmental Report 2020, p. 62 ff.; cf. also Markus/Schaller/ Gawel/Korte, NuR 2021, p. 90 ff. with further references).

No strategy to limit climate change, but to mitigate the 34 negative consequences, especially for people, are the so-called adaptation measures (cf. already Federal Government, German Strategy for Adaptation to Climate Change, 17 December 2008). In this respect, for example, the strengthening and raising of dikes, an adaptation of the crops grown in agriculture, forest conversion through the establishment of site-appropriate tree species, the adaptation of urban planning through fresh air corridors and green spaces to avoid urban heat islands, as well as the unsealing and reforestation of suitable areas can be considered (UBA, Monitoring Report 2019 on the German Adaptation Strategy to Climate Change, 2019, pp. 72 f., 102 ff., 128 ff., 160 f., 162 ff.; Federal Government, Second Progress Report on the German Strategy for Adaptation to Climate Change, 2020, p. 52 ff.).

3. Whether and to what level the CO₂ concentration in the Earth's atmosphere and the 35 The question of how to limit the rise in temperature is a question of climate policy. It cannot be answered by the natural sciences. However, their findings provide indications of the reductions that are necessary to achieve a specific climate protection goal. In this respect, climate science and climate policy use different target and measurement parameters that refer to temperature, CO₂ concentration in the atmosphere or CO₂ emissions. The climate targets of Paris (above para. 7 f.) were formulated as maximum warming or temperature targets. The methodological

advantage of such a temperature target is that it is directly related to the consequences of global warming, because the mean temperature of the Earth is a key indicator of the state of the Earth system as a whole.

In order to turn a global temperature target into targets for the reduction of CO₂ emis- 36
However, in order to be able to derive the necessary climate change scenarios, climate-physical conversions of warming into emitted CO₂ quantities are necessary. In view of the correlation between CO₂ concentration and global warming, this is possible in principle, even though the conversion is associated with uncertainties due to the complexity of the climate system (SRU, loc. cit., p. 39 ff., marginal no. 8 f.; for more details, see below marginal no. 216 ff.). Because of the approximately linear relationship, it is possible to state approximately how high the CO₂ concentration in the atmosphere may be at most if a certain earth temperature is not to be exceeded. It is also known approximately how high the CO₂ concentration already is today. Therefore, it is possible to determine approximately how much more CO₂ may be permanently released into the Earth's atmosphere so that this targeted Earth temperature is not exceeded. If one also takes into account the amount of so-called negative CO₂ emissions (which are, however, small according to the current state of affairs), which do not enter the atmosphere in the first place, then it is possible to determine the maximum amount of CO₂ that can be emitted.

or are taken from it again, the result is the total (global) quantities of CO₂ that can still be emitted if the resulting warming of the Earth is not to exceed the temperature threshold. This amount is referred to as the "CO₂ budget" in the climate policy and climate science debate (IPCC, Special Report, 1.5 °C Global Warming, Summary for Policymakers, 2018, p. 16 f., 28; SRU, loc. cit., p. 38 marginal no. 3). The IPCC has given different global residual budgets for different temperature targets with different probabilities (IPCC, Special Report, Global Warming of 1.5 °C, 2018, Chapter 2, p. 108, Tab. 2.2). On this basis, the German Council of Economic Experts has calculated a residual budget for Germany for limiting global warming to 1.75 °C. It has followed this up with the IPCC's residual budget for Germany. It based this on the values given by the IPCC for a target achievement probability of 67% (SRU, loc. cit., p. 52; for more details on these assumptions and their resilience, see recital 219 ff. below).

4. In order to ensure, as stated in § 1 sentence 3 KSG as the basis of the Climate Protection Act, that the 37

In order to achieve greenhouse gas neutrality by 2050, far-reaching transformations are necessary. With today's lifestyles, almost all behaviour is still directly or indirectly linked to CO₂ emissions. Not only the operation of large industrial plants, but also everyday behaviour often contributes directly or indirectly to the generation of CO₂ emissions. The CO₂ impact of the direct use of fuels or electricity for heating, cooking, lighting etc. is readily apparent. The CO₂ relevance of other processes, on the other hand, may only become apparent at second glance; greenhouse gas emissions are produced not only during the use of goods and services, but along the entire value chain: first during production and then during storage and transport, and later also during disposal. Even the extraction of mineral oil, the transport of fossil fuels, but also

the construction of a wind turbine require energy and thus cause greenhouse gases. Certain production processes in the metal and chemical industries, for example, as well as in the manufacture of mineral products, are particularly energy-intensive and thus greenhouse gas-intensive. The cement industry, for example, contributes 6 to 7% of anthropogenic CO₂ emissions worldwide (cf. UBA, Prozesskettenorientierte Ermittlung der Material- und Energieeffizienzpotentiale in der Zementindustrie, 2020, p. 11 ff.). Indirectly, the use of energy-intensive foam and insulation materials, fire extinguishers, air-conditioning systems, aluminium products, soundproof windows, paints or adhesives in the construction of buildings also contributes to greenhouse gas emissions without this being directly visible. The example of the textile industry shows the possibly high indirect greenhouse gas relevance of the use of consumer products. In 2015, the greenhouse gas emissions of global textile production were estimated at around 1.2 gigatonnes, which is almost twice as much as the total emissions of international shipping and air traffic combined (UBA, Big Points des ressourcenschonenden Konsums als Thema für die Verbraucherberatung - mehr als Energieeffizienz und Klimaschutz, 2019, p. 78 m.w.N.; on the environmental costs of selected products and services, p. 78).

UBA, Umweltkosten von Konsumgütern als Ansatzpunkt zur Verbesserung marktlicher und nicht-marktlicher Verbraucherinformationen "Zweites Preisschild", 2020, p. 56 ff). Clothing and footwear account for approximately 8% of global greenhouse gas emissions over their life cycle (production, use, disposal) (European Topic Centre on Waste and Materials in a Green Economy, Textiles and the environment in a circular economy, 2019, p. 2). If current lifestyles, including such widespread or even everyday practices as the construction and use of new buildings and the wearing of clothes, are to be climate neutral, fundamental restrictions and changes in production processes, uses and everyday behaviour are required.

IV.

With their constitutional complaints, the complainants firstly objected to the - 38
The main reason for this is that the state has not created sufficient regulations for the reduction of greenhouse gases, especially CO₂. With the reduction of CO₂ emissions regulated in the Climate Protection Act, the CO₂ residual budget corresponding to a temperature threshold of 1.5 °C could not be met. At the centre of the constitutional complaints are fundamental rights duties to protect under Article 2(2), first sentence, and Article 14(1) of the Basic Law, a fundamental right to a decent future and a fundamental right to an ecological minimum subsistence level, which the complainants derive from Article 2(1) in conjunction with Article 20a of the Basic Law and from Article 2(1) in conjunction with Article 1(1), first sentence, of the Basic Law, the principle of the reservation of the right to legislate, as well as duties of the legislature to investigate and explain, which the complainants refer to as "duties of rationality".

1. The constitutional complaint in the proceedings 1 BvR 2656/18 was filed in 2018 39 thus before the Climate Protection Act came into force. The Bundestag commented

on this in a written submission dated 6 December 2019. The BÜNDNIS 90/DIE GRÜNEN parliamentary group submitted its own statement in a written submission dated 17 December 2019. The Federal Government submitted its comments in a written submission dated 14 February 2020. In a letter dated 15 June 2020, the constitutional complaint was supplemented and the Climate Protection Act, which had entered into force in the meantime, was included.

a) The complainants are challenging the legislature's failure to 40
bers. The complainants re 1) to 11) claim that due to the inadequate state climate protection, the state violates its duty to protect under Article 2.2 sentence 1 of the Basic Law, and in part under Article 14.1 of the Basic Law. In addition, they complain of a violation of Article 2(1) in conjunction with Article 1(1), first sentence, of the Basic Law ("ecological subsistence level") and a violation of the rights of freedom in conjunction with Article 20(3) of the Basic Law due to disregard of the principle of materiality. The Climate Protection Act did not change their request, as it was not ambitious enough. They object to the national climate protection targets set out in section 3(1) of the Climate Protection Act, which

the annual emission quantities permissible under § 4 para. 1 KSG and Annex 2 and the regulation on their updating in § 4 para. 6 KSG. The complainants 12) and 13) are environmental associations which, as "advocates of nature", complain of a violation of Article 2(1) and Article 19(3) in conjunction with Article 20a of the Basic Law in conjunction with Article 47 of the Charter of Fundamental Rights and also assert a violation of the rights of freedom in conjunction with Article 20(3) of the Basic Law due to disregard of the principle of materiality.

aa) (1) The impugned legislative omission is a suitable grievance.
object of the complaint, because the complainants could refer to an explicit mandate of the Basic Law. In this case, this was Article 20a of the Basic Law. On the other hand, these are duties to protect arising from fundamental rights. The reduction targets for greenhouse gas emissions under international and supranational law were considered binding by the legislature and thus defined the minimum that had to be done to meet the protection requirements of Article 20a of the Basic Law. The level of protection of Article 20a of the Basic Law was at the same time the minimum level of what had to be achieved to protect the complainants' fundamental rights.

(2) They complain that Germany is not fulfilling its national and EU-legislative obligations. 42
climate targets set for the year 2020. The measures taken in the Climate Protection Act for the period after 2020 are also inadequate. Even the legal objective of § 1 of the Climate Protection Act (limiting the temperature increase to well below 2 °C and, if possible, to 1.5 °C), which is borrowed from the Paris Agreement, does not meet the basic rights. Nevertheless, the measures stipulated in the Climate Protection Act are not even sufficient to achieve this goal. The total emissions permitted under the Climate Protection Act are almost twice as large as the CO₂ budget available to meet the Paris Agreement according to the Council of Experts. Finally, according to the German government's own expert opinion, the measures mentioned in the Climate

Protection Programme 2030 would not even be able to achieve the emission path regulated in the Climate Protection Act.

(3) The complained-of legislative omission was a reason for the complainant's 43
The complainants claim that their present and direct fundamental rights are affected with regard to their right to life and physical integrity, their right to property and their right to an ecological minimum subsistence level. With regard to Article 2.2 sentence 1 of the Basic Law, the complainants 1) to 7) and 11) allege concrete health impairments that already exist today, such as heart disease, circulatory problems and allergies, which would be exacerbated in connection with current and future climate changes. With regard to the alleged violation of Article 14 (1) of the Basic Law, they argue that complainants 1), 2), 4), 5), 7), 8), 10) and 11) have property positions which could be affected by the consequences of climate change, such as flooding. The complainant (9) also feels that his general freedom of action is being infringed. As a result of the failure to take legislative measures, the complainant is deprived of his climate and environmentally friendly way of life.

The complainants re 12) and 13) were recognised environmental associations at 44
The applicants are entitled to appeal on the basis of the required interpretation of their fundamental rights in conformity with EU law. Within the framework of their general freedom of action, they could claim that the legislature had not taken appropriate measures to limit climate change and had thus disregarded the binding requirements under Union law of the directly applicable burden-sharing decision on the protection of the natural basis of life.

bb) (1) The constitutional complaint was well-founded because the legislature had evidently 45
had taken insufficient measures to avoid the threatened violations of fundamental rights. The protection of fundamental rights, which is also oriented towards precautionary measures, requires that the most current and rather cautious scientific projections be taken as a basis, especially if the weight of the threatening damage is taken into account. This requires that the "1.5 °C limit" be taken as a minimum and, in this respect, that studies show a maximum global path of two decades until so-called zero emissions are achieved. It was not apparent that the legislature had based its policy on this. In addition, the federal legislature had incorrectly determined the factual basis of the previous climate policy, which forced it to rectify the situation. There were neither concrete forecasts nor figures on the effectiveness of the regulated mitigation measures. Rather, it must be assumed that these are assumptions made in the dark. In fact, it is not the goal of greenhouse gas neutrality in 2050 that is relevant, but how many greenhouse gases will still be emitted by then. There is no specification of the complete emissions path to achieve greenhouse gas neutrality and no interim target, for example for 2040. The extent of the reduction through the respective measures remains completely open and thus unverifiable.

(2) Despite the Climate Protection Act that has been passed in the meantime, the law 46
The law does not apply to the reduction targets. Both the reduction targets and the

distribution of the reduction obligations are subject to the reservation of the law. They determine the permissible total emissions, which ultimately affect all areas of life of the persons entitled to basic rights. This is exemplified by the purchase of a car, the choice of a heating system for a building or the purchase of an agricultural product, in which the greenhouse gas reduction obligations always play a role and thus affect the holders of fundamental rights. For the period after 2030, the legislature had not made these decisions itself in the Climate Protection Act, but had left it to the federal government (section 4(6) of the Climate Protection Act). The reservation of the law could also not be overcome by the requirement of the Bundestag's consent.

b) aa) The German Bundestag considers the constitutional complaint inadmissible and 47 unfounded.

(1) The appellants' submissions as a whole did not satisfy the grounds for 48 requirements. They did not explain which regulations the legislator had enacted in order to implement the Action Plan 2020 and the Climate Protection Plan 2050. The right to appeal was also not sufficiently established. Article 2.2 sentence 1 of the Basic Law establishes the state's duty to protect the people in Germany from the dangers of climate change. It was sufficiently reliable to predict that the number of storms, heat waves and floods would increase significantly as a result of the global rise in temperature caused by greenhouse gas emissions. Thus, a current impairment of fundamental rights due to climate change can be assumed. In part, the complainants' individual concern was also to be affirmed. However, it was not substantiated that the legislature had exceeded its leeway to fulfil its duty to protect. The legislature had at its disposal both measures to reduce greenhouse gas emissions and measures to adapt to the consequences of climate change. The selection and relative weighting of these instruments did not result from Article 2.2 sentence 1 of the Basic Law. The fact that Germany did not fulfil its obligations under Union law could not be challenged in the context of a constitutional complaint. Internationally agreed climate protection targets to limit global warming to 1.5°C or 2°C do not represent the minimum level of protection that the legislature is obliged to grant on the basis of the duty to protect under fundamental rights. The German state alone was theoretically not in a position to limit the global temperature increase to 1.5 °C or 2 °C. The German state was not in a position to do so. It is true that the legislature and the federal government have a fundamental legal obligation to work nationally and internationally to mitigate climate change. However, they do not owe it to comply with a specific upper temperature limit. Even if one were to assume that every state is obliged to contribute to limiting the temperature increase for the protection of its citizens, the extent to which the Federal Republic of Germany is obliged to reduce the temperature cannot be derived from this without further ado. Furthermore, it was not substantiated that the measures taken by the legislature were obviously completely unsuitable or completely inadequate to achieve the protection objective. In particular, such a demonstration could not be replaced by a reference to the failure to achieve the reduction targets set by the Federal Government itself or by international and European Union law for the purpose of climate protection. This is because the obligations to act under fundamental law

are aimed at protecting health and life.

A possible violation of Article 14 (1) of the Basic Law was also not substantiated. The Commission considers that the Commission's decision is vitiated by the fact that the complainants have not addressed the issue of adaptation measures for property protection and have not explained why these measures, in combination with mitigation measures, do not provide an adequate level of protection.

A right to protection enshrined in Article 2 (1) in conjunction with Article 1 (1) of the Basic Law, 50

which focuses on safeguarding the ecological preconditions of humane

In view of the dangers of climate change, the duty to protect resulting from Article 2 (2) sentence 1 of the Basic Law does not go any further than this.

No claim to protection could be derived from Article 20a of the Basic Law alone, because the provision 51

as a provision of state objectives does not in itself give rise to any subjective rights. The review also on the basis of objective constitutional law in the sense of the so-called Elfes construction could not be transferred to a constellation of duties to protect without further ado. In any event, the complainants had not shown a qualified violation of Article 20a of the Basic Law.

The complainants re 12) and 13), as environmental organisations, did not have the necessary 52

power of appeal. Against the background of the case-law of the European Court of Justice, there would only be a need to be able to assert the infringement of secondary Union law by means of a constitutional complaint if legal protection by a specialised court was not available. However, this was not the case, because under an interpretation of § 42 and § 43 VwGO in conformity with European law, an action directed at a declaration of a violation of Union environmental law by omission of the legislator was possible.

(2) The constitutional complaint was also unfounded. The decisive question was whether the Germany's national and EU protective measures provide sufficient protection against the dangers resulting from climate change. Considerable reductions have already been achieved in the European Union. Worldwide, emissions had risen by 50% in the period from 1990 to 2015. In view of this development in emissions, adaptation measures were necessary in addition to mitigation measures in order to protect health, life and property from the consequences of climate change. In 2008, the German government adopted the German Strategy for Adaptation to Climate Change, outlining the measures that are possible and necessary in the various sectors affected by the global rise in temperature.

bb) The parliamentary group of the party BÜNDNIS 90/DIE GRÜNEN in the German Bundestag 54

contradicts the opinion of the Bundestag. The fact that Germany alone cannot succeed in climate protection calls for particularly strong efforts in the implementation

of common international concerns. Because Article 1(3) of the Basic Law also binds the German state in cross-border situations, it is doubtful that the circle of fundamental rights holders whose protection is at stake in the climate crisis can be limited to certain persons and groups of persons in Germany. The drowning people on South Sea islands sinking as a result of the climate crisis are not indifferent to the Basic Law. Possibly, in order to cope with the climate crisis, comprehensive planning standards legislation would be constitutionally required. The minimum elements of such legislation would be the definition of concrete reduction targets for the entire period until climate neutrality is achieved in 2050, the planning designation of those concrete measures (including future laws) with which these targets can be achieved in the respective countries.

sectors are to be achieved, and the inclusion of external expertise in the application of the standards also to the extent that the experts are enabled to assess the effectiveness of the concrete measures. The Climate Protection Act does not meet these standards.

cc) The Federal Government considers the constitutional complaint inadmissible. It be- 55 does not relate to a suitable subject-matter of the complaint. According to the case-law of the Federal Constitutional Court, a constitutional complaint directed against a legislative omission requires an express mandate of the Basic Law, which is essentially delimited in terms of content and scope. Such a mandate could not be derived from Article 20a of the Basic Law because the provision contained a definition of a state objective, but not a subjective claim. To the extent that the complainants wanted to derive a mandate to act from duties to protect under fundamental rights, this was also not expedient. Fundamental rights obligations to protect leave the Federal Government a broad scope for action. This was of particular importance against the background of the international dimension of climate protection, as the Basic Law granted the Federal Government a broad scope in the area of foreign policy.

The requirements for the right of appeal were not fulfilled. Fundamental rights 56 It is true that the state's duty to protect could require it to enact legal provisions that already contain the danger of violations of fundamental rights. However, it had not been substantiated that the Federal Government had exceeded its broad scope for assessment, evaluation and design. The framework of international and European Union law does not determine the scope for action. Global climate protection targets, such as limiting global warming to 1.5 °C or 2 °C, also do not constitute minimum standards under constitutional law because the achievement of these targets is not solely dependent on the Federal Republic of Germany.

The climate change-related hazards do not constitute a current concern 57 in their own rights. By claiming that they were entitled to file a complaint without global climate change having had any concrete impact on them, the complainants attempted to transform the constitutional complaint into an inadmissible popular complaint. The

complainants re 12) and 13), both recognised environmental associations, also lacked the right of appeal. Constitutional procedural law does not recognise constitutional complaints with an altruistic objective. A fundamental right to make the interests of environmental, nature or climate protection one's own concern, enshrined in Article 2(1) in conjunction with Article 19(3) and Article 20a of the Basic Law, did not exist. The reference to Article 47 of the Charter of Fundamental Rights did not indicate otherwise.

To the extent that the constitutional complaint generally refers to the taking of appropriate climate 58 protection measures, the requirement of exhaustion of legal remedies had not been complied with. Legal recourse was neither excluded, nor were legal remedies available.

obviously inadmissible.

2. The constitutional complaint in the proceedings 1 BvR 288/20 is filed against the Climate 59 protection law.

a) The complainants are predominantly adolescents and young adults. 60 ne. They complain of the violation of a fundamental right to a decent future, which they derive from Article 1(1) in conjunction with Article 20a of the Basic Law, of a fundamental right from Article 2(2), first sentence, in conjunction with Article 20a of the Basic Law, of their freedom of occupation (Article 12(1) of the Basic Law) and of the guarantee of property (Article 14(1) of the Basic Law), in each case also in conjunction with Article 20(3) of the Basic Law with regard to related guarantees in Articles 2 and 8 of the ECHR. They consider the climate protection efforts of the German legislator to be insufficient. They object to the national climate protection target for the year 2030 (reduction of greenhouse gases by 55% compared to 1990) set out in § 3 para. 1 of the Climate Protection Act, which they claim is insufficient, and to the annually permissible emission quantities set out in § 4 para. 1 sentence 3 of the Climate Protection Act in conjunction with Annexes 1 and 2 until the year 2030, which they claim are set too high. In addition, they object to the provision of Article 4 para. 3 sentence 2 of the Climate Protection Act in conjunction with Article 5 of the Climate Protection Ordinance because it allows unused national emission rights to be sold to other European Member States, which levels the effect of increased national climate protection efforts. In this way, the legislator had not fulfilled its duty to protect.

aa) It follows from the principle of human dignity that state action or omission 61 The principle of human dignity, in conjunction with Article 20a of the Basic Law, already obliges us to ensure living conditions in which future generations can feel at home. In view of the damage that has already occurred and the threat associated with climate change, the principle of human dignity in conjunction with Article 20a of the Basic Law already obliges us to ensure living conditions in which "the subject quality of the complainants can also develop in the future". From this follows the necessity to

limit greenhouse gas emissions in such a way that the 1.5 °C target can still be met if all states act accordingly. An increase in global temperatures above 1.5 °C, on the other hand, actively accepts the risk of millions of human lives and the crossing of tipping points with unforeseeable consequences for the climate system. Thus, the legislator is already obliged to ensure that, as far as possible, no more greenhouse gas emissions are released in the future; emissions must be kept as low as possible, taking into account the principle of proportionality. The prohibition of disproportion in concretisation of the state's long-term responsibility flowing from Article 20a of the Basic Law requires a suitable and effective protection concept. Because constitutional maximum values were at issue, the legislature had the obligation to disclose in detail the methods and calculation steps used to determine the minimum subsistence level worthy of a human being.

The national climate protection target set out in Article 3 para. 1 KSG and the targets set out in Article 4 para. 1 62

KSG in conjunction with Annexes 1 and 2 fall short of the required level of protection. The complainants would have to put up with very drastic deterioration of their living environment during their lifetime, which would result from the fact that previous generations had profited considerably from the emission of greenhouse gases and had severely damaged the ecosystem. Continuing on the same path as in the past would tie up future possibilities for shaping the future and increasingly put democratic participation, rights of freedom and the quality of the subject at risk. The complainants would be robbed of their creative and future perspectives to an unprecedented extent. The approach of the Climate Protection Act is evidently unsuitable for limiting the temperature increase to 1.5 °C. The complainants claim that a reduction of emissions to 55 % is not sufficient. A reduction of emissions to 55% by the target year 2030 would not allow a limitation of the temperature increase to 1.5°C, as the greenhouse gas budget still available in the Federal Republic of Germany would already be used up in the next few years. The complainants derive the remaining budget for Germany from 2020 onwards from IPCC estimates of the size of the global residual budget with a 66% probability of meeting the 1.5 °C target. This would amount to 420 gigatonnes from 2018. According to the IPCC's calculations, there would still be a CO₂ budget of 336 gigatonnes from 1 January 2020. For Germany, 3.465 gigatonnes of CO₂ would remain from 1 January 2020, based on what the complainants consider to be a sensible consideration of equal per capita emission rights worldwide.

Furthermore, the legislator had not fulfilled its duty to explain. It 63 would have had to explain which mitigation measures it would take to reduce greenhouse gas emissions as far as possible in order to secure livelihoods in the future that are in line with human dignity.

The prohibition of undersizing is also violated by allowing the transfer of 64 emissions allocations. This sets the wrong incentives. If the reductions achieved domestically and exceeding the requirements were allowed to be included in the overall EU budget, their contribution to the protection of fundamental rights would be

inappropriate.

bb) The fundamental duty to protect under Article 2.2 sentence 1 of the Basic Law was also violated.

connection with Article 20a of the Basic Law. The complainants' right to life and physical integrity had already been negatively affected to a considerable extent by the continued failure of the legislature to take adequate climate protection measures and the associated increase in risk.

cc) The complainants 2) to 9) allege a violation of Article 12 para. 1 66 of the Basic Law. GG. The complainants 2) to 8) were already farmers or were in training to take over their parents' businesses in the future. The 9th complainant intended to take over his parents' hotel and restaurant business. The farms, some of which are located on islands, are considerably impaired in their management due to climate-related events. The complainants were in danger of losing their business because of the greenhouse gas emissions for which the state was partly responsible.

gas emissions on land and farms also violates their right to property (Article 14 (1) of the Basic Law).

b) aa) The German Bundestag considers the constitutional complaint inadmissible and 67 unfounded. In this case, the orientation towards the CO₂ residual budget is not compulsory, but the result of a valuation that must be discussed, negotiated and decided in democratic processes and that cannot be derived from fundamental rights. The distribution of the globally available CO₂ residual budget does not follow any scientific laws. As far as the area of foreign policy is concerned, the state organs have a particularly broad scope for evaluation and decision-making. The position taken in the Paris Agreement, according to which states with very high emissions must reduce their emissions earlier and more decisively, was a political decision and did not follow from Article 2.2 sentence 1 of the Basic Law.

The scope of protection of the freedom to choose an occupation is affected by a de facto encroachment 68

by private persons - in this case by greenhouse gas emitters - is only affected if it is of some weight, is closely related to the exercise of the profession and objectively shows a tendency to regulate the profession. Climate damage did not primarily affect activities that were typically carried out professionally. The greenhouse gas emissions were also not closely related to the complainants' exercise of their profession and did not have an objective tendency to regulate their profession. In addition, the legislature's scope of assessment and design for the protection of freedom of occupation was rather broader than in the case of the protected interests of life and limb. The claim to protection under Article 14.1 of the Basic Law at any rate did not go further than that under Article 2.2 sentence 1 of the Basic Law.

bb) The Federal Government has issued a uniform opinion on the proceedings 1 69 BvR 78/20, 1 BvR 96/20 and 1 BvR 288/20. It argues that the national CO₂ residual budget of 3.465 gigatonnes of CO₂ from 2020 calculated by the complainants is not

binding on the German state. Neither this national residual budget nor the global budget which serves as its starting point can be derived from a currently applicable national, European or international legal framework. In its reports, the IPCC had only calculated a global CO₂ residual budget without breaking this down to individual states. The IPCC's estimate of the residual budget was scientifically sound, but subject to considerable uncertainties, which the IPCC itself pointed out. Internationally, the agreement of national budgets is not consensual because of different preferences and because of questions of justice and distribution. Therefore, the German government does not determine a national budget. Multilateral cooperation requires clear greenhouse gas reduction targets. These are therefore rightly at the centre of global, European and German climate policy. The question of the distribution of the global CO₂ residual budget is also not the subject of descriptive natural science, but rather a normative and ethical discourse on questions of justice and equity, as well as on political verifications.

action processes. The budget approach is suitable as a certain plausibility check to verify whether the sum of the nationally determined contributions is globally sufficient to achieve the goals of the Paris Agreement. The nationally determined contributions would have to be measured against this yardstick in the global negotiation process. However, the German government does not expect national CO₂ budgets because of this international political framework.

The constitutional complaints were inadmissible. According to the decision taken by the 70 It does not appear possible, based on the facts of the case presented by the complainants, that their fundamental rights have been violated by the omission alleged by them. An obligation of the state, derived from the principle of human dignity in conjunction with Article 20a of the Basic Law, which already exists today, to guarantee the living conditions in which the complainants' subject quality could also develop in the future, is alien to German constitutional law. The submission that the complainants 2) to 9) in the proceedings 1 BvR 288/20 felt affected by climate-induced difficulties in their professional practice as (future) farmers and hotel operators, respectively, did not indicate that they were directly affected by the Climate Protection Act or an omission attributable to the German legislature. Moreover, Article 14(1) of the Basic Law does not have a prior effect in the form of an expectancy that can protect against the devaluation of the inheritance; they cannot invoke Article 14(1) of the Basic Law before the occurrence of the event of inheritance.

3. a) The complainants in the proceedings 1 BvR 96/20 are children and youth 71 They object to what they consider to be insufficient national climate protection efforts, which violate their fundamental rights under Article 2(2), first sentence, and Article 14(1) of the Basic Law. They object to § 3 para. 1, § 4 para. 1 sentence 3 in conjunction with Annexes 1 and 2, § 4 para. 3, para. 5, para. 6, § 8 and § 9 of the Climate Protection Act as well as to the legislature's persistent failure, in their view, to take appropriate and prognostically sufficient measures to comply with the remaining CO₂ budget. The complainants also consider the Climate Protection Act to be

incompatible with the requirement of minimum rationality of laws, which in their view is based on fundamental rights, because the legislature has not sufficiently taken into account the findings of the IPCC.

aa) Climate change threatens legal interests of the highest order. For their protection 72 a limitation of global warming to 1.5 °C is imperative because of the threat of reaching tipping points and the considerably higher health risks associated with a global warming of 2 °C. Emission reduction is the only effective protective measure. According to the IPCC's Special Report, 336 gigatonnes of emissions would still be available globally from 1 January 2020 in order to achieve the "1.5 °C target" with the greatest possible probability (66%). Without additional measures, the global CO2 budget will be exhausted between 2030 and 2052. The Federal Republic of Germany may only claim the CO2 budget of 3.465 gigatonnes of CO2 to which it is entitled according to its share of the population. The reduction targets laid down in the Climate Protection Act were

completely inadequate to ensure compliance with this budget. The reduction quota of at least 55 % compared to 1990, as stipulated in section 3 (1) of the Climate Protection Act, in conjunction with the annual emission ceilings pursuant to section 4 (1) sentence 3 of the Climate Protection Act in conjunction with Annex 2, allow the remaining national CO2 budget for achieving the 1.5 °C target of 3.465 gigatonnes to be exhausted as early as 2024, at the latest by 2025. In the alternative, the complainants explain to what extent the reduction targets of the Climate Protection Act could be used to meet residual budgets corresponding to the 1.75 °C target or the 2 °C target. In this case, extensive emission reductions would have to be made from 2030 onwards, which would be tantamount to a "full brake". The complainants also see a breach of the duty to protect in the fact that the actual savings measures, as they result in particular from the 2030 climate protection programme, are completely insufficient to comply with the national CO2 budget of 3.465 gigatonnes. Even the national climate protection targets would be missed.

bb) They also consider the Climate Protection Act to be incompatible with the requirement 73 nis of the minimum rationality of laws. The legislature must be guided by an appropriate and justifiable assessment of available material; it must exhaust the accessible sources of knowledge in order to be able to estimate the likely effects as reliably as possible. The climate goal underlying the Act pursuant to section 1 sentence 3 KSG, namely to limit the increase in the average global temperature to well below 2 °C and, if possible, to 1.5 °C above the pre-industrial level, disregards the findings of the IPCC as they result from the Special Report as the current state of research. They also objected to the fact that the Climate Protection Act was not based on a forecast of the extent of the emission reductions required globally for a certain limitation of global warming.

cc) Finally, the complainants are of the opinion that the Climate Change Act 74 law does not satisfy the requirements resulting from the reservation of the law. It is inadequate that the legislature in section 3(1) of the Climate Protection Act only

specified the reduction quota for the target year 2030 and transferred the determination of the reduction targets from 2030 onwards to the Federal Government pursuant to section 4(6) of the Climate Protection Act without making any further specifications in this regard. The fact that the determination of the climate protection targets by the Federal Government is subject to the approval of the Bundestag does not change this. The legislature had also not fulfilled its obligation to determine the sector-specific distribution of the reduction burden. It is incompatible with the proviso of the Act that the Federal Government is free, pursuant to section 4(5) and section 8(2) of the Climate Protection Act, to amend the sector-specific annual emission levels set out in Annex 2 and to shift the volume limits across the sectors.

b) aa) The German Bundestag considers the constitutional complaint inadmissible and 75 unfounded. The legislator is not obliged to further standardise climate protection.

protection objectives in a parliamentary act. The constitutional court's review of duties to protect is limited to the review of the prohibition of inadequate measures and does not include a general review of formal and substantive constitutional conformity. The Elfes construction had no equivalent in the area of the protective duty dimension. The legislature did not violate the reservation of the law if it did not decide conclusively on the distribution of the annual emissions among the sectors, but authorised the Federal Government in § 4 para. 5 of the Act to postpone and in § 8 para. 2 of the Act to compensate across sectors. The distribution of emissions between the sectors was in any case irrelevant for the protection under Article 2 para. 2 sentence 1 of the Basic Law, as only the total quantity of emissions was relevant. The complainant complained of failure of the Parliament to standardise climate protection targets for the time after 2030 (cf. § 4 para. 6 KSG), while affecting the state's protection of life and limb, was not essential to fundamental rights. In view of the small share of global CO₂ emissions, the reduction of CO₂ emissions in the Federal Republic of Germany could as such only make a minor contribution to averting the impairment of Article 2.2 sentence 1 of the Basic Law. The regulations were also part of the long-term overall strategy of the Federal Republic of Germany, which was set out in the Climate Protection Plan 2050. In view of the dynamic developments in climate research as well as in European and international climate protection measures, it was appropriate to initially define the national reduction targets until 2030 and then to update them. The legislator could take this decision again at any time.

The complainants' allegation that the Climate Change Act is contrary to 76 The argument that the Climate Protection Act is inappropriate because the purpose of the Act as stated in Section 1 KSG does not coincide with the objectives stated in Section 3 KSG is incorrect. Section 1 of the Climate Protection Act merely provides that the Climate Protection Act should contribute to limiting warming to below 2°C and, if possible, to 1.5°C. The Climate Protection Act also provides for the allocation of the available CO₂ budget in accordance with the objectives of the Climate Protection Act. On the other hand, the allocation of the available CO₂ budget according to the shares of the world population is not the only conceivable solution to limit the global

temperature increase. The purpose of the Climate Protection Act is therefore not to comply with this CO₂ residual budget. There is therefore no internal contradiction with the emission quantities regulated in the Climate Protection Act.

bb) The statements of the Federal Government in its uniform opinion 77 essentially correspond to those in the proceedings 1 BvR 288/20 (above marginal no. 69).

4. The complainants in the proceedings 1 BvR 78/20 live in Bangladesh and 78 in Nepal. They complain that the Federal Republic of Germany has violated its obligations to protect under Article 2(2), first sentence, and Article 14(1), first sentence, of the Basic Law due to insufficient climate protection efforts.

a) The complainants submit that Bangladesh and Nepal are in under- 79 The region is particularly susceptible to climatic changes in a variety of ways.

en are directly threatened by advancing climate change.

aa) Two thirds of the total area of Bangladesh would be less than five metres above 80 the sea level and are threatened by its rise. The country is criss-crossed by rivers fed by the Himalayan mountains. Glacial water is melting faster and faster, leading to land flooding. The south of Bangladesh is regularly hit by strong weather phenomena such as cyclones or annual monsoons. In southeastern Bangladesh, increased rainfall has led to devastating landslides. The coastal region is more frequently exposed to cyclones and flooding, so that more and more people are settling in the landslide-affected mountain regions, exacerbating the already precarious situation there. Together with the destruction of farmland and the contamination of groundwater, landslides also affected drinking water and food supplies.

The capital city of Dhaka, he said, was being affected by the high and growing population density, 81

The city is particularly affected by recurring floods and heat waves. The city's urban districts are situated very low and do not have sufficient drainage systems. The buildings there can do little to counteract the water masses. Without a significant reduction in global greenhouse gas emissions, part of Dhaka could be permanently flooded by 2040 due to overflowing rivers. The rise in temperature also has a particularly serious impact in Dhaka, as the asphalted soil absorbs the heat and it escapes poorly in the densely built-up areas. The population in the poor quarters is at increased risk of dying from heat waves. The dwellings are close together; they may only be covered by a tin roof, under which the heat accumulates. Access to water and cooling is difficult, there is often no air-conditioning and the inhabitants are weakened by disease. The incidence of diarrhoeal diseases - which are often fatal - rises by 40 % with a temperature increase of just 1 °C and a temperature of more than 29 °C. The rising heat evaporates the water and the air. The rising heat causes the drinking water to evaporate, which is also contaminated by flooding.

In Nepal, rising temperatures and droughts increasingly led to forest 82 fires. This would pollute the respiratory tract and threaten material assets; in the worst

case, the forest fires would lead to death. In addition, the torrential rains increase the danger of landslides. At the same time, the region is threatened by a shortage of drinking water and droughts and the resulting food shortages. In the south of Nepal, there have been repeated significant crop losses of up to 30% due to particularly dry conditions alternating with heavy rainfall and flooding. The increased incidence of pandemics and pathogens due to climate change could exacerbate the crop losses.

bb) The complainants explain how their own health and their 83 property are already affected by climate change and will continue to be affected.

would be. They say they are at risk from heavy rains, landslides, extreme heat, flooding, cyclones and forest fires. Some have lost their homes and farms and had to relocate. Due to the increasing salinisation of the groundwater, only few vegetables can be grown and the drinking water supply is deteriorating. Rice and cereal crops have suffered severe losses due to droughts, heavy hailstorms and torrential rains.

cc) The complainants are of the opinion that Article 1.3 of the Basic Law, which does not have 84

a territorial restriction establishes the comprehensive binding of public authority to fundamental rights, it follows that fundamental rights obligations to protect can also be asserted by complainants living abroad. There was a sufficiently close connection to Germany, because the greenhouse gas emissions originating in Germany were partly responsible for the adverse effects experienced by the complainants in their home countries. The extension of the duties to protect under fundamental rights to the complainants living abroad is also linked to responsibilities under international treaties. In addition, the German public authority violates customary international law and thus Article 25 of the Basic Law. Because of the legislature's inactivity in setting sufficient climate protection targets and taking implementation measures, the German public authorities are not fulfilling their obligations under customary international law to prevent damage. States must exhaust all available means to prevent activities under their jurisdiction that significantly damage the environment of other states. This is transferable to greenhouse gases.

b) aa) The German Bundestag considers the constitutional complaint inadmissible and 85 unfounded. Article 1 (3) of the Basic Law establishes a comprehensive obligation of German state authority to the fundamental rights of the Basic Law. Insofar as Article 2.2 sentence 1 of the Basic Law provides for a duty to protect also in favour of holders of fundamental rights abroad, the limited international possibilities of action and influence of the Federal Republic of Germany and the moreover broad scope of foreign policy of the competent state organs must be taken into account by limiting the content of the duty to protect to at most procedural requirements. In any event, the legislature had fulfilled these procedural obligations.

The content of fundamental rights obligations to protect cannot be applied to foreign matters without 86

to be transferred to other situations. The concrete protective effects resulting from the fundamental rights could differ according to the circumstances under which they were

applied. As far as the protection of people abroad was concerned, the fundamental rights did not provide for "effective and adequate" protection. The prohibition of inadequate protection did not apply. This already follows from the prohibition of intervention under international law and the de facto limits of the guarantee, which result from the limited resources of the state. In addition to the careful investigation and assessment of the facts, fundamental rights holders abroad could often

The Federal Republic of Germany can no longer merely demand that its claim to protection be adequately taken into account in foreign policy decisions and that the Federal Republic of Germany use its possibilities of exerting influence for the protection of legal interests after due political consideration. On the other hand, the latitude that exists in any case in the fulfilment of duties to protect extends even further in the weighting and weighing of the conflicting interests in foreign matters. This is because the shaping of foreign circumstances and events is not determined solely by the will of the Federal Republic, but is in many cases dependent on circumstances that are beyond its control.

The general rules of international law within the meaning of Article 25 of the Basic Law include
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also the prohibition of significant transboundary environmental damage. However, the dangers threatening the complainants were not attributable to the German state and therefore did not qualify as indirect factual encroachments on fundamental rights.

The fact that the complainants have their places of residence in Bangladesh and Nepal 88 and thus in countries that are likely to be affected more severely than other regions of the world by the consequences of climate change, and in particular by floods, landslides, heat waves and drought, did not, moreover, already distinguish them in the requisite manner from the large group of people worldwide who live on islands, near the coast, in areas with particular amounts of precipitation or in large cities that are particularly susceptible to heat waves, or who are dependent on agriculture. The complainants described burdens that threaten an incalculably large group of people worldwide in the same way.

bb) The Federal Government is of the opinion that the possibility of a fundamental rights 89 violation was already ruled out due to the special foreign situation of the facts of the case. It is true that Article 1.3 of the Basic Law establishes a comprehensive obligation of the German state to respect fundamental rights. However, the concrete protective effect resulting from the fundamental rights could differ according to the circumstances under which they were applied. In this case, there was no sufficiently close connection to Germany. This was shown above all by the lack of direct causality. Between the causes in one part of the world and the effects in another part of the world there is always the global phenomenon of climate change. A direct, demonstrable causality between cause and effect could not be established for any single source of greenhouse gases. Therefore, the complainants were not directly affected.

B.

Insofar as the complainants are natural persons, their constitutional 90 complaints are admissible. This applies, on the one hand, insofar as they complain about the violation of fundamental rights obligations to protect. The complainants can partly claim that their fundamental right to life and physical integrity (Art. 2 para. 2 sentence 1) has been violated.

GG) and that some of them have had their fundamental right to property (Article 14 (1) GG) violated (for more details, see II 1, C I below), because the state could only have taken insufficient measures to reduce greenhouse gas emissions and to limit global warming with the Climate Protection Act. In this respect, the complainants living in Bangladesh and Nepal are also entitled to complain, because it cannot be ruled out from the outset that the Basic Rights of the Basic Law also oblige the German state to protect them from the consequences of global climate change (for more details, see II 1, C II below). Secondly, the complainants, insofar as they live in Germany, could have their fundamental rights violated by the fact that, as a result of the quantities of greenhouse gas emissions permissible until 2030, which in their view are too generously measured in the Climate Protection Act, they will have to accept considerable reduction burdens and corresponding losses of freedom in the subsequent periods for reasons of the climate protection then required under constitutional law (for more details see II 4, C III below). The constitutional complaints are admissible insofar as they are directed against § 3.1 sentence 2 and against § 4.1 sentence 3 KSG in conjunction with Annex 2. Otherwise, the constitutional complaints are not admissible.

I.

The constitutional complaints have an admissible subject matter,
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to the extent that they are directed against regulations of the Climate Protection Act.

1. The appellants argue on the merits that the legislator 92.
violates their fundamental rights by not taking sufficient measures to reduce greenhouse gas emissions and to limit global warming. The constitutional complaint in the proceedings 1 BvR 2656/18 was filed before the Climate Protection Act was passed. The complainants initially only objected to the state's failure to act. After the adoption of the Climate Protection Act, they now claim, like the complainants in the other proceedings, that the Act does not meet the constitutional requirements.

a) Specifically, the constitutional complaints complain, on the one hand, that the provisions
in § 93
3 para. 1 sentence 2 of the Climate Protection Act for the target year 2030 and the limitation of the annual emission quantities until the year 2030 regulated in § 4 para. 1 of the Climate Protection Act in conjunction with Annex 2 are insufficient. Secondly, the complainants in the proceedings 1 BvR 288/20 complain that their fundamental rights are violated by the fact that section 4(3) sentence 2 of the Climate Protection

Act, in conjunction with Article 5 of the Climate Protection Regulation, allows the transfer of emission allocations to other Member States. Further provisions of the Climate Protection Act are challenged because they are incompatible with the principle of legislative preemption. This concerns the authorisation of the Federal Government in Article 4(5) of the Climate Protection Act to amend the annual emission levels of the sectors in Annex 2 by ordinance, and the authorisation in Article 4(6) of the Climate Protection Act to issue an ordinance on the updating of the annual emission levels required under Article 4(1) sentence 5 of the Climate Protection Act for periods after 2030, in the procedures for the adoption of the Climate Protection Act.

1 BvR 78/20 and 1 BvR 96/20, furthermore, the authorisation to issue ordinances for the sectorial allocation in section 8 (2) KSG and the updating of the climate protection programme under section 9 KSG.

b) The complaint alleges the violation of various fundamental rights. The complainants 94 to 12) and 13) in the proceedings 1 BvR 2656/18 allege a violation of Article 2.1, Article 19.3 in conjunction with Article 20a of the Basic Law in conjunction with Article 47 of the Charter of Fundamental Rights, as well as a violation of the rights of freedom in conjunction with Article 20.3 of the Basic Law due to a disregard of the principle of materiality. The other complainants allege the violation of fundamental rights obligations, partly from Article 2.2 sentence 1 of the Basic Law, partly from Article 14.1 of the Basic Law and, in the proceedings 1 BvR 288/20, also from Article 12.1 of the Basic Law. In addition, the complainants in the proceedings 1 BvR 2656/18 allege a violation of a fundamental right to the "ecological minimum subsistence level" and the complainant re 9) also alleges a violation of the general freedom of action. The complainants in the proceedings 1 BvR 288/20 complain, in addition to the violation of duties to protect fundamental rights, above all of the violation of a fundamental right to a humane future. The complainants in the proceedings 1 BvR 78/20 and 1 BvR 96/20 also allege a violation of the legislature's duties of investigation and presentation and a violation of the principle of the reservation of the right to legislate. Insofar as they complain about the violation of the principle of the reservation of the law, the complainants derive from this a violation of duties to protect fundamental rights. In the proceedings 1 BvR 2656/18, the complainants allege a violation of the rights of freedom in connection with Article 20 (3) of the Basic Law due to disregard of the principle of materiality, because section 4 (6) of the KSG does not provide a sufficient basis for authorisation to regulate the emission reduction obligations for the period after 2030.

2. The provisions of the Climate Protection Act are a permissible constitutional 95 subject matter of the complaint. However, the constitutional complaint 1 BvR 2656/18 is not admissible insofar as the complainants object to legislative omission as such, even after the Climate Protection Act has been passed. In principle, omission as such can only be challenged with the constitutional complaint in the case of complete inactivity of the legislature. If, on the other hand, the legislature has adopted a

provision, the constitutional complaint must, as a rule, be directed against this statutory provision. This also applies if the complainants believe that the legislature has not fulfilled its duty to protect by means of a statutory provision (cf. only Lenz/Hansel, BVerfGG,

3. Aufl. 2020, § 90 marginal no. 189 with further references). However, the constitutional complaint is only inadmissible to the extent that the allegation of legislative omission is within the scope that the law already passed is supposed to cover in substance. However, this is precisely the case here in the relationship between the Climate Protection Act and the alleged omission.

II.

The complainants, insofar as they are natural persons, have the right of appeal with regard to § 3 para. 1 sentence 2 and § 4 para. 1 sentence 3 KSG in conjunction with Annex 2. As a result, it appears possible that, due to the excessively generous emission quantities permitted by these provisions until 2030 in the opinion of the complainants, on the one hand, fundamental rights obligations to protect under Article 2 para. 2 sentence 1 and Article 14 para. 1 of the Basic Law are violated and, on the other hand, the complainants living in Germany are threatened with very high reduction burdens after 2030, which could constitute an unconstitutional endangerment of their freedom, which is comprehensively protected under fundamental rights. Moreover, the possibility of a violation of fundamental rights is ruled out or, at any rate, is not sufficiently demonstrated.

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1. insofar as the complainants are natural persons, they shall be liable with regard to The complainant is entitled to appeal under Article 3(1) sentence 2 and Article 4(1) sentence 3 of the KSG in conjunction with Annex 2 on the grounds of a possible violation of the state's duty to protect under Article 2(2) sentence 1 and Article 14(1) of the Basic Law. The further alleged violation of a duty to protect under Article 12.1 of the Basic Law in the proceedings 1 BvR 288/20, on the other hand, does not give rise to a right of appeal. The complainants re 12) and 13) in the proceedings 1 BvR 2656/18 do not assert a violation of the duty to protect.

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a) The provisions complained of by the complainants could violate duties of protection under Article 2.2 sentence 1 and Article 14.1 of the Basic Law, but not under Article 12.1 of the Basic Law. A violation of the duty to protect seems possible with regard to § 3.1 sentence 2 and § 4.1 sentence 3 KSG in conjunction with Annex 2. With regard to the other challenged provisions, the possibility of a violation of the duty to protect is not sufficiently demonstrated.

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aa) (1) The complainants' fundamental right to protection under Article 2.2 sentence 1 of the Basic Law could be violated. The protection of life and physical integrity under Article 2.2 sentence 1 of the Basic Law includes protection against impairment by environmental pollution (see BVerfGE 49, 89 <140 et seq.>; established case-law; also on Art. 2 ECHR, e.g. ECtHR, Öneriyildiz v. Turkey, judgment of 30 November 2004, no. 48939/99, para. 89 ff; ECtHR, Budayeva and Others v. Russia, judgment of 20 March 2008, no. 15339/02 et al, para. 128 et seq.; on Art. 8 ECHR, e.g. ECtHR, Cordella et Autres c. Italie, judgment of 24 January 2019, nos. 54414/13 and 54264/15, para. 157 et seq. with further references). This also applies to dangers that climate change causes to human life and health. The legislature may have violated its duty to protect by providing insufficient protection against health impairments and dangers to life caused by climate change. It is true that climate change has a genuinely global character and could obviously not be stopped by the German state alone. However, Germany's own contribution to climate protection is neither impossible nor superfluous (see below, para. 199 ff.).

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In so far as the complainants are the owners of the properties threatened by climate change, according to their submissions, there is also a violation of the

The complainants also claim that the legislature's duty to protect property under Article 14.1 of the Basic Law may be considered (cf. BVerfGE 114, 1 <56>). To the extent that the complainants in the proceedings 1 BvR 288/20 assert the violation of Article 12.1 of the Basic Law because the continuation of parental farming or hotels cannot be realised due to climate change, however, the possibility of a violation of a duty to protect that goes beyond the protection of property is not apparent.

(2) The complainants in the proceedings 1 BvR 78/20, who live in Bangladesh and Nepal, are also entitled to lodge an appeal. The Federal Constitutional Court has not yet clarified whether the fundamental rights of the Basic Law oblige the German state to contribute to the protection of people abroad against adverse effects caused by the consequences of global climate change and under which circumstances such an obligation to protect could be violated. An effect of the fundamental rights also vis-à-vis these complainants does not appear to be ruled out from the outset (for more details, see below para. 173 et seq.). 101

bb) (1) Sections 3 (1) sentence 2 and 4 (1) sentence 3 KSG in conjunction with Annex 2 could be incompatible with the duties to protect fundamental rights. With these provisions, the legislature could have permitted excessive amounts of CO2 emissions by 2030, which would contribute to further climate change and thus endanger the complainants' health, in some cases even their lives, and their property. 102

(2) With regard to the other provisions challenged by the constitutional complaints, the possibility of a violation of fundamental rights obligations to protect is neither shown nor evident. 103

This applies firstly insofar as the complainants in the proceedings 1 BvR 288/20 contested that § 4 para. 3 sentence 2 KSG in conjunction with Article 5 of the Climate Protection Ordinance permits the transfer of emission allocations to other Member States. It can remain open whether the admissibility of the constitutional complaint is already precluded in this respect by the fact that § 4.3 sentence 2 of the Climate Protection Act merely provides that Article 5 of the Climate Protection Ordinance remains unaffected, but the latter belongs to European Union law and could therefore in principle not be reviewed by the Federal Constitutional Court. In any event, the constitutional complaint is not sufficiently substantiated in this respect (§ 23.1 sentence 2, § 92 BVerfGG). The complainants do not address the various flexibility options contained in Article 5 of the Climate Protection Ordinance and do not explain to what extent their use - when viewed from a European or global perspective - could lead to an overall reduction in climate protection. In view of the genuinely global character of climate change, however, such an overall effect is important. The complainants have not substantiated that this effect has worsened due to the contested regulation. 104

With regard to the authorisation to issue regulations in section 4(5) of the KSG, which is challenged from the point of view of the reservation of the law, it is not explained in what way such an authorisation, which would 105

annual emission quantities in the sectors, could violate the asserted duties to protect fundamental rights. In particular, it is not readily apparent that this could increase the permitted quantity of greenhouse gases and thus increase the dangers of climate change for those affected.

Insofar as the constitutional complaints, invoking fundamental rights protection obligations, object to the fact that the authorisation to issue an ordinance in § 4 para. 6 KSG to update the annual emission quantities after 2030 is incompatible with the principle of statutory reservation, it is irrelevant whether it has been sufficiently demonstrated that such an ordinance could violate protection obligations; in this respect, there is at any rate a lack of present concern (para. 111 below). 106

The statements in the constitutional complaints 1 BvR 78/20 and 1 BvR 96/20 on the incompatibility of § 8 and § 9 of the KSG with the principle of the primacy of the law are too brief to indicate the possibility of a violation of the duty to protect. 107

b) aa) The complainants' own fundamental rights are currently affected by the provisions on permissible greenhouse gas emissions until 2030 in § 3.1 sentence 2 and § 4.1 sentence 2 KSG in conjunction with Annex 2. The global warming caused by anthropogenic greenhouse gas emissions is, according to the current state of affairs, to a large extent irreversible (para. 32 above), and it does not appear to be excluded from the outset that climate change will progress during the lifetime of the complainants in such a way that their fundamental rights as guaranteed by Art. 2.2 sentence 1 and Article 14.1 of the Basic Law (see Stürmlinger, EurUP 2020, 169 <179>; Kahl, JURA 2021, 117 <125>). The possibility of a constitutional violation cannot be countered here by pointing out that the risk of a future damage does not already constitute a damage at present and thus does not constitute a violation of a fundamental right. Even regulations which only lead to a not insignificant threat to fundamental rights in the course of their implementation can themselves conflict with the Basic Law (cf. BVerfGE 49, 89 <141>). This applies in any case if the course once set in motion can no longer be corrected (cf. also BVerfGE 140, 42 <58 marginal no. 59> with further references). 108

The complainants are not asserting the rights of people who have not yet been born or even of entire future generations. They are not entitled to any subjective fundamental rights (cf. Calliess, Rechtsstaat und Umwelt- staat, 2001, p. 119 f.; Gärditz, in: Landmann/Rohmer, Umweltrecht, 93rd EL August 2020, Art. 20a GG marginal no. 95; on objective protective effects see below marginal no. 146). Rather, the complainants invoke their own fundamental rights. 109

Nor are they inadmissible so-called popular constitutional complaints. The mere fact that a very large number of persons are affected does not prevent an individual fundamental right from being affected (cf. VG Berlin, judgment of 31 October 2019 - 10 K 412.18 -, marginal no. 73; see also BVerfG, decision 110

of the Third Chamber of the First Senate of 21 January 2009 - 1 BvR 2524/06 -, marginal no. 43). In constitutional complaint proceedings, a particular concern that goes beyond the mere fact that the complainants themselves are affected, which would distinguish them from the general public, is generally not required (unlike the case-law on Article 263 (4) TFEU, cf. May 2019, Carvalho, T-330/ 18, EU:T:2019:324, para. 33 et seq.; see also BVerfG, Order of the Second Chamber of the Second Senate of 15 March 2018 - 2 BvR 1371/13 -, para. 47; but cf. Groß, NVwZ 2020, 337 <340>; Meyer, NJW 2020, 894 <899>; Kahl, JURA 2021, 117 <125>).

bb) Section 4(6) of the KSG, which concerns the determination of annual emission levels for periods after 2030 and is objected to here on the grounds of incompatibility with the principle of the reservation of the right to legislate, does not, by contrast, establish either a present or a direct concern, because it merely contains a power to issue a decree. In this respect, there is also no threat of an irreversible violation of the constitution. If a future ordinance were to violate fundamental rights obligations due to an insufficient legal basis, protection against this would have to be obtained through a later constitutional complaint before the Constitutional Court.

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2. The right of appeal for a constitutional complaint cannot be directly based on Article 20a of the Basic Law. It is true that the protection mandate of Article 20a of the Basic Law includes the protection of the climate (below marginal no. 198). The norm is also justiciable (below marginal no. 205 ff.). However, Article 20a of the Basic Law does not contain any subjective rights (cf. BVerfG, Order of the First Chamber of the First Senate of 10 May 2001 - 1 BvR 481/01 and others -, marginal no. 18; Order of the First Chamber of the First Senate of 5 September 2001 - 1 BvR 481/01 and others -, marginal no. 24; Order of the Third Chamber of the First Senate of 10 November 2009 - 1 BvR 1178/07 -, marginal no. 32; see also from the literature. 32; see from the literature only Steinberg, NJW 1996, 1985 <1992>; Schulze-Fielitz, in: Dreier, GG, 3rd ed. 2015, Art. 20a Rn. 24, 82 with further references; Epiney, in: v.Mangoldt/Klein/Starck, GG, 7th ed. 2018, Art. 20a marginal no. 37 et seq.; Gärditz, in: Landmann/Rohmer, Umweltrecht, 93rd EL August 2020, Art. 20a GG marginal no. 24 with further references). Proposals for the inclusion of a subjective fundamental environmental right in the constitution have been discussed repeatedly (cf. BTDrucks 10/990; BTDrucks 11/ 663). With the constitutional reform of 1994, however, the constitution-amending legislature decided against this. Thus, Article 20a of the Basic Law is outside the basic rights section of the Constitution. Article 20a of the Basic Law is also not mentioned in Article 93 (1) no. 4a of the Basic Law, which lists the rights that can be challenged as violated by a constitutional complaint. Accordingly, the Federal Constitutional Court has repeatedly described the provision as a state objective (cf. BVerfGE 128, 1 <48>; 134, 242 <339 marginal no. 289>).

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3. The "fundamental right to an ecological minimum subsistence level" asserted by the complainants in the proceedings 1 BvR 2656/18 or a similar "right to a humane future" asserted in the proceedings 1 BvR 288/20 cannot justify the right of appeal here. The extent to which the Basic Law protects such rights does not require a final decision. In any case, the legislature would not have violated them.

A right to the ecological minimum subsistence level is derived, inter alia, from the human minimum subsistence level guaranteed by Article 1(1) in conjunction with Article 20(1) of the Basic Law (cf. BVerfGE 125, 175 <222 ff.>); the minimum subsistence level also presupposes minimum ecological standards (cf. Rupp, JZ 1971, 401 <402>; Waechter, NuR 1996, 321 <321 f.>; Calliess, Rechtsstaat und Umweltstaat, 2001, p. 300 with further references; Gärditz, in: Landmann/Rohmer, Umweltrecht, 93rd EL August 2020, Art. 20a GG Rn. 78; Buser, DVBI 2020, 1389 <1391 f.>; with another

Justification also Kloepfer, Umweltrecht, 4th ed. 2016, § 3 marginal no. 70 ff; Murswiek/Ri-

xen, in: Sachs, GG, 8th ed. 2018, Art. 2 marginal no. 227; Scholz, in: Maunz/Dürig, GG, 91st EL April 2020, Art. 20a marginal no. 10; rejecting Appel, in: Vesting/Korioth <ed.>, Der Eigenwert des Verfassungsrechts, 2011, 289 <293>; Voßkuhle, NVwZ 2013, 1 <6>; Epiney, in: v.Mangoldt/ Klein/Starck, GG, 7th ed. 2018, Art. 20a marginal no. 39; Kluth, in: Fri- auf/Höfling, Berliner Kommentar zum Grundgesetz, 51st EL 2016, Art. 20a marginal no. 106). Indeed, physical survival as well as the possibilities to maintain interpersonal relationships and to participate in social, cultural and political life (cf. BVerfGE 125, 175 <223>) could not be guaranteed by economic safeguards alone if only an environment radically changed by climate change and hostile to life by human standards were available for this purpose. However, other fundamental rights already oblige the protection of ecological minimum standards essential to fundamental rights and, in this respect, to protect against environmental damage "of catastrophic or even apocalyptic proportions" (BVerfG, Order of the Second Chamber of the Second Senate of 18 February 2010, p. 1).

- 2 BvR 2502/08 -, marginal no. 13). In addition to the duties of protection under Article 2.2 sentence 1 of the Basic Law for physical and psychological well-being and under Article 14.1 of the Basic Law, an ecological safeguarding of existence could, however, have an independent effect if, in an environment that has changed to the point of being hostile to life, adaptation measures (para. 34 above) could still safeguard life, physical integrity and property, but not the other prerequisites for social, cultural and political life. It is also conceivable that adaptation measures would have to be so extreme that they would no longer allow for social, cultural and political integration and participation in a meaningful way.

However, it cannot be established that the state has violated requirements that could be addressed to it in order to avoid existence-threatening conditions of catastrophic or even apocalyptic proportions. Germany has acceded to the Paris Agreement and the legislator has not remained inactive. In the Climate Protection Act, it has laid down concrete measures for the reduction of greenhouse gases (see § 3 para. 1 sentence 2, § 4 para. 1 sentence 3 KSG in conjunction with Annex 2). These reduction targets, which are regulated until the year 2030, do not lead to climate neutrality, but will be continued (cf. § 4 para. 1 sentence 5 KSG) with the long-term goal of achieving greenhouse gas neutrality by 2050 (§ 1 sentence 3 KSG). On this basis, it seems possible that - to the extent that Germany can contribute to solving the problem - catastrophic conditions can be prevented. A different question is whether the

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The Federal Constitutional Court of Germany has not yet ruled on whether the efforts made after 2030, which involve restrictions on freedom, can be constitutionally justified or whether the Climate Protection Act has inadmissibly shifted the burden of reduction to the future and to those who will then be responsible (see below, para. 116 et seq.).

With regard to their civil liberties, the complainants 1) to 11) in the proceedings 1 BvR 2656/18 and the complainants in the proceedings 1 BvR 96/20 and 1 BvR 288/20 are entitled to appeal insofar as they challenge § 3 para. 1 sentence 2 and § 4 para. 1 sentence 3 KSG in conjunction with Annex 2, because they may be faced with very large greenhouse gas reduction burdens from 2031 onwards. The extent of the associated restriction of fundamental rights is already determined by the aforementioned provisions. This advance effect on future freedom could violate the complainants' fundamental rights.

a) aa) (1) The complainants' rights of freedom could be violated because the Climate Protection Act postpones considerable parts of the greenhouse gas reduction burdens required by Article 20a of the Basic Law to periods after 2030. Further reduction burdens could then have to be met at such short notice that this would (also) demand enormous efforts from them and comprehensively threaten their freedom protected by fundamental rights. Virtually all freedoms are potentially affected, because today almost all areas of human life are linked to the emission of greenhouse gases (para. 37 above) and can thus be threatened by drastic restrictions after 2030. Freedom is fully protected by the Basic Law through special fundamental rights, but at least through the general freedom of action guaranteed in Article 2.1 of the Basic Law as the fundamental right of freedom (cf. BVerfGE 6, 32 <36 f.>; case law). This freedom could be unconstitutionally jeopardised by § 3.1 sentence 2 and § 4.1 sentence 3 of the KSG in conjunction with Annex 2 if CO₂ emissions were permitted too generously in the near future, thereby postponing necessary reduction burdens to the future at the expense of future freedom. Admittedly, the complainants must not be subjected to any constitutionally unreasonable reduction burdens in the future; they remain protected against unreasonable encroachments on their freedom by their fundamental rights. However, the degree of reasonableness is also determined by the constitutional requirement to protect the climate (Article 20a of the Basic Law). Reinforced by similar protection requirements from fundamental rights, this will require higher greenhouse gas reductions in the event of an actual increase in the threat posed by climate change and will justify correspondingly more extensive restrictions on freedom than today.

(2) The greenhouse gas emission quantities permitted until 2030 under Article 3 para. 1 sentence 2 and Article 4 para. 1 sentence 3 KSG in conjunction with Annex 2 already have consequences for the reduction burden that will be imposed thereafter. They thus already determine - not only factually, but also legally in advance - future restrictions on fundamental rights. This is due, on the one hand, to the largely irreversible actual effects of CO₂ emissions on the earth's temperature and, on the other hand, to the fact that the Basic Law does not allow the idle acceptance of an ad

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climate change by the state. The extent of the threatened loss of freedom depends decisively on how much time is left for the transition to a climate-neutral way of life and economy, which is constitutionally required at some point to protect the climate.

(a) The direct cause of anthropogenic climate change is the concentration of human-induced greenhouse gases in the Earth's atmosphere (on the state of scientific knowledge, see recital 18 ff. and recital 32 ff. above). CO₂ emissions are of particular importance in this context. Once they have entered the Earth's atmosphere, they can hardly be removed from it again according to the current state of knowledge. Accordingly, anthropogenic global warming and climate change cannot be reversed years later. At the same time, with every additional quantity of CO₂ emitted above a small global warming threshold, the earth's temperature continues to rise from the already irreversibly reached temperature level and climate change continues to progress just as irreversibly. If global warming is to be halted at a certain temperature threshold, only the amount of CO₂ corresponding to this threshold may be emitted; globally, a so-called CO₂ residual budget remains. If emissions exceed this residual budget, the temperature threshold is exceeded.

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(b) However, an unlimited progress of global warming and climate change would not be in line with the Basic Law. In addition to the duties to protect under fundamental rights, this is opposed above all by the climate protection requirement of Article 20a of the Basic Law, which the legislature has concretised - in a constitutionally decisive manner - by the goal of limiting global warming to well below 2 °C and, if possible, to 1.5 °C above the pre-industrial level (for more details, see below para. 208 et seq.). This temperature threshold corresponds to a national CO₂ residual budget derived from the global residual budget, although this cannot be clearly quantified (see below para. 216 ff.). Once this national CO₂ budget has been used up, further CO₂ emissions may only be permitted if the interest in doing so outweighs the climate protection requirement of Article 20a of the Basic Law (see below marginal no. 198). Behaviour that is directly or indirectly linked to CO₂ emissions would therefore only be constitutionally acceptable if the underlying fundamental freedoms could prevail in the necessary balancing process, whereby the relative weight of a non-climate-neutral exercise of freedom in the balancing process decreases further as climate change progresses. However, Article 20a of the Basic Law has increasing normative weight with regard to the regulation of CO₂-relevant behaviour even before the constitutionally relevant budget has been completely used up, because, regardless of constitutional concerns, it would be neither responsible nor realistic to initially accept CO₂-relevant behaviour undiminished and then abruptly demand climate neutrality when the remaining budget is completely used up. The more of the CO₂ budget is used up, the more pressing the constitutional requirements of climate protection and climate protection become.

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the more serious impairments of fundamental rights could turn out to be in a constitutionally permissible manner (cf. Kment, NVwZ 2020, 1537 <1540>). The necessary restrictions on freedom in the future are already inherent in the generosity of current climate protection law. Climate protection measures that are currently omitted in order to spare freedom must be taken in the future under possibly even less favourable conditions, and would then curtail identical freedom needs and rights far more drastically.

(c) In this context, the length of the remaining period of time is decisive in determining the extent to which constitutionally protected freedom must be limited in the transition to a climate-neutral way of life and economy, or to which fundamental rights can be spared. If CO₂-free and thus climate-neutral alternative modes of behaviour, which could at least partially replace the CO₂-effective use of freedom, were available and sufficiently established in society, the exclusion of climate-relevant behaviour would be associated with less loss of freedom than without these alternatives. If, for example, a developed CO₂-neutral transport infrastructure were established and means of transport were produced in a CO₂-neutral way, the loss of freedom of a ban on CO₂-effective traffic, transport and production processes would be considerably less than without such an alternative. However, it will take time before technical progress and other developments allow CO₂-intensive processes and products to be largely replaced or avoided, especially since the comprehensive implementation of such innovations in almost all economic processes and lifestyle practices is required. In view of the extent of the necessary socio-technical transformation, longer restructuring and phase-out paths are considered necessary (SRU, Für eine entschlossene Umweltpolitik in Deutschland und Europa, Umweltgutachten 2020, p. 51 ff. marginal no. 33). The more time there is for such a switch to CO₂-free alternatives, the earlier it is initiated and the further the general CO₂ emission level has already been reduced, the milder the restrictions on freedom will be. If, on the other hand, a society characterised by CO₂-intensive lifestyles has to convert to climate-neutral behaviour in the shortest possible time, the restrictions on freedom are likely to be enormous (cf. Groß, ZUR 2009, 364 <367>; see also Federal Government, Memorandum on the Paris Agreement of 12 December 2015, BTDrucks 18/9650, p. 30 para. 8; IPCC, Special Report, 1.5 °C Global Warming, Summary for Policymakers, 2018, p. 22 para. D.1.3; Franzius, EnWZ 2019, 435 <435, 440>; Winter, ZUR 2019, 259 <264>; similarly Hoge Raad der Nederlande, judgment of 20 December 2019, 19/00135, para. 7.4.3).

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(3) Every concrete consumption of remaining CO₂ quantities reduces the remaining budget and the possibilities of further CO₂-relevant use of freedom and at the same time shortens the time for initiating and realising socio-technical transformation. In any case, it seems possible that the fundamental rights of the Basic Law, as an inter-temporal safeguard of freedom, protect against regulations that allow such consumption without sufficient consideration for the future freedom that is endangered thereby.

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(cf. on subjective rights in connection with <shaping> freedom to be distributed over time and generations also BVerfGE 129, 124

<170>; 132, 195 <242 para. 112; 246 f. marginal no. 124>; 135, 317 <401 marginal no. 163 f.>; 142, 123

<231 marginal no. 213> - on Art. 38 para. 1 sent. 1 in conjunction with Art. Art. 20 para. 1 and para. 2 GG).

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bb) Here, future freedom after 2030 could be specifically impaired by the fact that, as the complainants claim, the CO₂ emission quantities permitted in the Climate Protection Act until 2030 are too generous; there could be a lack of sufficient precautions to protect future freedom. Sections 3(1)(2) and 4(1)(3) of the Climate Protection Act, in conjunction with Annex 2, regulate the amount of CO₂ emissions permitted up to 2030, and thus at the same time determine how much of the residual CO₂ budget may be consumed. They are thus the cause of the impairment of fundamental rights under consideration here and can also justify the authority to file a constitutional complaint in this respect.

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Section 4 para. 1 sentence 3 KSG, in conjunction with Annex 2, sets out the total quantity of greenhouse gas emissions permitted up to 2030, staggered by year. The annual emission quantities in Annex 2 refer to the various greenhouse gases, but can be converted into CO₂ quantities. From this it can be derived approximately which part of the CO₂ residual budget will be used up by 2030. The data do not allow a complete determination of the consumption permitted until 2030. On the one hand, they are incomplete insofar as data for the energy sector are only provided for three of eleven years; § 4 para. 1 sentence 4 KSG, however, stipulates that emissions in the energy sector should decrease as steadily as possible. On the other hand, the list does not include greenhouse gas emissions from land use, land use change and forestry and the emissions from international air and sea transport attributable to Germany (cf. BTDrucks 19/14337, p. 26 f.). However, this provides a sufficient basis for an estimate of how much of the residual budget remains, which is only roughly possible in any case.

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Section 3 para. 1 sentence 2 KSG, which is challenged by the constitutional complaints, also determines how much of the residual CO₂ budget may be consumed. Admittedly, § 3 para. 1 sentence 2 KSG does not directly stipulate what quantity of emissions is permitted by the target year 2030, but merely regulates a reduction quota of 55

This does not directly determine which quantities may be emitted in the individual years until 2030. The reduction quota for a target year in itself has little informative value about the total amount of greenhouse gases emitted by then (SRU, Für eine entschlossenene Umweltpolitik in Deutschland und Europa, Umweltgutachten 2020, p. 42, marginal no. 12). However, the remaining leeway is small. This is because Article 3 (1), first sentence, KSG stipulates that greenhouse gas emissions must be reduced in stages; according to this (with the exception of offsetting possibilities over the course of a year, Article 4 (3), first sentence, KSG), it is legally impossible for emission levels to rise again in the meantime. A continuous reduction is therefore prescribed.

cc) (1) The constitutional complaints have been sufficiently substantiated in this respect (§ 23.1 sentence 2, § 92 BVerfGG). The complainants have explained in detail that, according to the provisions made in the Climate Protection Act until 2030, the remaining budget, in their view, would be excessively consumed and that, therefore, extraordinary efforts to reduce CO2 emissions would subsequently be necessary. In the proceedings 1 BvR 96/20, it is stated that the longer the German legislator waits to take sufficient climate protection measures, the more drastic the necessary savings and adaptation measures will become and the more there will be no alternative. In view of the relatively manageable reductions regulated in the Climate Protection Act until 2030, an overshoot of the remaining CO2 budget could then only be prevented by a "full braking" of emissions that could almost be described as extreme. In the proceedings 1 BvR 288/20, the complainants assert a right to the preservation of future freedom of development and thus also explicitly do not aim solely at securing minimum ecological conditions. With regard to the risk of future impairment of freedom, the complainants in the proceedings 1 BvR 2656/18 state that, with the failure to meet the targets for 2020, it is clear that far more drastic measures with much more severe consequences for all those affected will have to be taken in the future in order to make up for the missed reduction efforts and, at the same time, to meet the ever greater reduction obligations. Due to the inadequately regulated climate protection targets in the Climate Protection Act, the emission reduction targets for the period after 2030 would have to be much more ambitious and the measures derived from this would be much more drastic for the freedom of the holders of fundamental rights. It is obvious that the measures required for the reduction would have far-reaching effects on the freedom of the holders of fundamental rights. The determination of the nationally permissible total emissions affects all areas of life of the holders of fundamental rights.

(2) The complainants base their claim primarily on fundamental rights obligations under Article 2.2 sentence 1 and Article 14.1 of the Basic Law, on a "right to a humane future" and a fundamental right to the "ecological subsistence level". In their view, this results in protection against the emission regulations in section 3(1) sentence 2 and section 4(1) sentence 3 KSG in conjunction with Annex 2, which are considered too generous. Admittedly, only in the proceedings 1 BvR 2656/18 is the burden of future mitigation measures explicitly addressed from the point of view of civil liberties in general. However, within the subject-matter of the dispute, the Federal Constitutional Court examines all fundamental rights to be considered in this respect (see BVerfGE 147, 364 <378 marginal no. 36> with further references; 148, 267 <278 marginal no. 27>). Accordingly, the compatibility of the challenged provisions with the rights of freedom is to be included in the examination in all proceedings here.

(3) However, the constitutional complaint of the complainants re 12) and 13) in the proceedings 1 BvR 2656/18 is not sufficiently substantiated in this respect. The fact that they are supported by

restrictions on CO₂-effective behaviour could suffer similarly extensive losses of freedom as natural persons is not obvious and has not been explained in detail. The abstract reference to the freedom of property and occupation of legal persons without a concrete explanation of which restrictions on freedom they would have to expect as environmental associations is not sufficient in this respect.

b) The complainants' freedoms are currently, personally and directly affected by section 3(1) sentence 2 and section 4(1) sentence 3 KSG in conjunction with Annex 2. 129

aa) The described danger of future restrictions of freedom currently justifies a fundamental right being affected because this danger is inherent in current law. Exercises of freedom that are directly or indirectly connected with CO₂ emissions are threatened after 2030 precisely because § 3 para. 1 sentence 2 and § 4 para. 1 sentence 3 KSG, in conjunction with Annex 2, permit greenhouse gas emissions to a possibly excessive extent until 2030. Insofar as the CO₂ residual budget is used up, this is irreversible, because CO₂ emissions cannot be removed from the earth's atmosphere on a large scale as things stand today. Since a possibly irreversible impairment of fundamental rights that has thus been set in motion today could no longer be successfully challenged without further ado in a later constitutional complaint against restrictions of freedom that would then take place, the complainants are already entitled to file a complaint now (cf. on this BVerfGE 140, 42 <58 marginal no. 59> with further references; case law). 130

bb) The complainants are affected in their own freedom. They can still experience the measures required after 2030 to reduce CO₂ emissions themselves. The fact that the restrictions will affect practically every person living in Germany at that time does not prevent them from being affected in their own right (para. 110 above). 131

The situation is different for the complainants in the proceedings 1 BvR 78/20 living in Bangladesh and Nepal, who are not themselves affected. A violation of their civil liberties that could result from the complainants one day being subjected to very burdensome climate protection measures because the German legislature currently allows greenhouse gas emissions in too large quantities and would therefore have to take all the more stringent measures in Germany in the future is ruled out from the outset. The complainants live in Bangladesh and Nepal and are not subject to these measures. 132

cc) The other complainants are also directly affected. This is the case if the effect on the legal position is not first brought about by means of a further act or is dependent on the enactment of such an act (cf. BVerfGE 140, 42 <58 marginal no. 60>). In this case, the actual impairment of fundamental rights only threatens as a result of future regulations (see above marginal no. 120). However, because it is irreversible in the current law, the immediacy of the affectedness is to be affirmed today. 133

The admissibility of the constitutional complaints is not precluded by the fact that § 3 para. 1 sentence 2 and § 4 para. 1 sentence 3 KSG in conjunction with Annex 2 merely specify the reduction target and the annual emission quantities. The CO₂-relevant decisions and processes from which this total permitted consumption of the CO₂ residual budget by 2030 results in detail are not regulated there. However, it is not necessary for the complainants to determine the effects of CO₂-relevant measures and processes individually and to take action against them individually. Rather, the legislature must allow itself to be held to its overall framework regulation chosen with the Climate Protection Act, especially since it was precisely the aim of such a framework regulation to create predictability and overall bindingness (cf. BTDrucks 19/14337, p. 17).

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5. To the extent that the complainant re 9) in the proceedings 1 BvR 2656/18 asserts a violation of the general freedom of action under Article 2.1 of the Basic Law because he is denied a climate and environmentally friendly way of life, he has not sufficiently substantiated this (§ 23.1 sentence 2, § 92 BVerfGG).

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6. The environmental associations, which appear as complainants re 12) and 13) in the proceedings 1 BvR 2656/18, claim on the basis of Article 2.1 in conjunction with Article 19.3 and Article 20a of the Basic Law in the light of Article 47 of the Charter of Fundamental Rights as "advocates of nature" that the legislature has not taken appropriate measures to limit climate change and has thereby disregarded binding requirements under Union law for the protection of the natural foundations of life. However, the Basic Law and constitutional procedural law do not provide for such a right of appeal for constitutional complaints. Although it is obvious that the Basic Law's environmental protection mandate in Article 20a of the Basic Law could have greater effect if its enforcement were strengthened by the possibility of constitutional protection of individual rights, the legislature amending the Constitution did not create this (supra para. 112).

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A different interpretation is not possible or required here because of Article 47 CFR. It is irrelevant how far the meaning of Art. 47 CFR could reach in the area that is not completely determined by Union law. In any case, it is not discernible that environmental associations would have to be given the opportunity to file a constitutional complaint themselves because of the alleged violation of the burden-sharing decision. Apart from this, it is doubtful whether the infringement of the burden-sharing decision alleged in the matter has occurred at all. Germany could have fulfilled its obligation to reduce greenhouse gas emissions in the areas regulated therein by 14% by 2020 compared to 2005. It is true that the legislator itself assumed when passing the Climate Protection Act that this obligation would not be met (cf. BTDrucks 19/14337, pp. 1 and 17). As a result of the Corona pandemic, however, Germany's greenhouse gas emissions in 2020 fell considerably; they were overall more than 40% below the emissions of the reference year 1990 (Agora Energiewende, Die Energie-

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wende im Corona-Jahr: Stand der Dinge 2020, 2021, p. 31). This means that Germany's 2020 target of reducing its overall greenhouse gas emissions by 40 % by then compared to 1990 will probably be achieved, at least for a short time.

III.

The constitutional complaints meet the requirements for the creation of a legal remedy (§ 90.2 of the Federal Constitutional Court Act) insofar as they are directed against statutory provisions. There is no legal remedy directly against the challenged statutory provisions. Insofar as the constitutional complaints are directed at ordering the Federal Government to act, they are only admissible insofar as the Federal Government is addressed as an organ involved in legislation. If, on the other hand, independent actions of the Federal Government are required, the legal recourse would not be exhausted, because in this respect, the administrative legal recourse is in principle open (cf. only VG Berlin, judgment of 31 October 2019 - 10 K 412.18 -, marginal no. 46 ff.).

IV.

Insofar as the constitutional complaints are directed against statutory provisions, the complainants would not have had to attempt to obtain legal protection before the specialised courts for reasons of the subsidiarity of the constitutional complaint in the broader sense. The requirements of this principle, which is expressed in § 90.2 of the BVerfGG, are admittedly not limited to taking only the remedies formally opened to achieve the direct objective of the proceedings, but require that all means be taken that can remedy the asserted violation of fundamental rights. This is intended to ensure that the Federal Constitutional Court does not have to make far-reaching decisions on an unsecured factual and legal basis, but that the non-constitutional courts, which are primarily responsible for the interpretation and application of ordinary law, have first worked out the factual and legal situation before an appeal to the Federal Constitutional Court (BVerfGE 150, 309 <326 marginal no. 42>).

For the complainants, however, there is no reasonable possibility of legal protection before the specialised courts. An action for a declaratory judgement before the administrative courts against the challenged regulations is not likely to be possible here (cf. BVerwGE 136, 54 <58 ff.>). Moreover, recourse to legal protection by the specialised courts is also not required if neither the clarification of facts nor the clarification of questions of specialised law can be expected from the prior conduct of court proceedings, on which the Federal Constitutional Court would have to rely in order to decide the constitutional questions, but the answer to which depends solely on the interpretation and application of the constitutional standards (cf. BVerfGE 88, 384 <400>; 91, 294 <306>; 98, 218 <244>; 143, 246 <322 marginal no. 211>; 150, 309 <326 f. marginal no. 44>; 155, 238 <267 marginal no. 67>; established case law).

Even after this, a referral to the specialised courts was not necessary, because there was no need for this.

deepening or broadening of the factual and legal material could be expected. In particular, no questions of interpretation of simple law are relevant to the decision.

V.

The background of the Climate Protection Act under Union law does not prevent the admissibility of the constitutional complaints. The challenged provisions are not entirely determined by Union law. It is true that some of the provisions of the Climate Protection Act could nevertheless be regarded as implementing Union law within the meaning of Article 51(1), first sentence, of the Charter of Fundamental Rights. The legislature assumed that the Climate Protection Act would create the framework for the implementation of the obligations of the Federal Republic of Germany under the Climate Protection Ordinance (see Bundestag printed paper 19/14337). However, according to the case-law of the Federal Constitutional Court (see BVerfGE 152, 152 <168 marginal no. 39> with further references - Recht auf Vergessen I) and the European Court of Justice (see ECJ, Judgment of 26 February 2013, Åkerberg, C-617/10, EU:C:2013:105, marginal no. 29), this does not preclude a review against the standard of the Basic Law.

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C.

The constitutional complaints are partially successful. It cannot be established that the legislature has violated its duty to protect the complainants from the dangers of climate change (I and II). However, there is a violation of fundamental rights because, as a result of the emission quantities that the Climate Protection Act allows for the current period, there may be high emission reduction burdens in later periods (III); to this extent, § 3.1 sentence 2 and § 4.1 sentence 3 of the Climate Protection Act in conjunction with Annex 2 violate the complainants in the proceedings 1 BvR 96/20 and 1 BvR 288/20 and the complainants re 1) to 11) in the proceedings 1 BvR 2656/18 in their fundamental rights. However, this endangerment of the rights of freedom is not already unconstitutional because of a violation of objective constitutional law; a violation of Article 20a of the Basic Law cannot be established as a result (III 2 a). However, there is a lack of precautions to mitigate the high emission reduction burdens, which are required here under fundamental law to safeguard freedom over time and generations and which the legislature has postponed with the challenged provisions to periods after 2030 and which it will then have to impose (also) on the complainants because of Article 20a of the Basic Law and because of the protection against climate change-related damage required under fundamental law (III 2 b).

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I.

The complainants living in Germany have duties to protect themselves from the dangers of climate change under Article 2.2 sentence 1 and Article 14.1 of the Basic Law (see recital 173 et seq. below on the complainants living in Bangladesh and Nepal). However, the fact that these duties to protect have been violated cannot be

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can be determined.

1. a) The state is obliged by the fundamental right to the protection of life and health in Article 2 (2) sentence 1 of the Basic Law to protect against the dangers of climate change. It must counter the considerable potential danger of climate change by taking measures which, in international cooperation, contribute to halting human-induced global warming and limiting the resulting climate change. In addition, positive protective measures (so-called adaptation measures) are required to mitigate the consequences of climate change. 144

aa) Article 2.2 sentence 1 GG contains a general state duty to protect life and physical integrity. The fundamental right protects not only as a subjective right of defence against state interference. It also includes the state's duty to protect and promote the legal interests of life and physical integrity and to protect them from unlawful interference by others (cf. BVerfGE 142, 313 <337 marginal no. 69> with further references; case law). The duties to protect derived from the objective function of the fundamental right are in principle part of the subjective fundamental right. If duties to protect are violated, this also constitutes a violation of the fundamental right under Article 2.2 sentence 1 of the Basic Law, against which those affected can defend themselves by means of a constitutional complaint (see BVerfGE 77, 170 <214>; case law). 145

The state's duty to protect under Article 2.2 sentence 1 of the Basic Law does not only intervene when violations have already occurred, but is also directed towards the future (cf. BVerfGE 49, 89 <140 et seq.>; 53, 30 <57>; 56, 54 <78>; 121, 317 <356>). The 146

The duty to protect against dangers to life and health can also justify a duty to protect with regard to future generations (cf. H. Hofmann, ZRP 1986, 87 <88>; Appel, Staatliche Zukunfts- und Entwicklungsvorsorge, 2005, p. 116 ff. with further references; Kleiber, Der grundrechtliche Schutz künftiger Generationen, 2014, p. 283 ff.; Murswiek/Rixen, in: Sachs, GG, 8th ed. 2018, Art. 2 marginal no. 202). This applies all the more when irreversible developments are at issue. However, this intergenerational obligation to protect is solely of an objective legal nature, because future generations are not currently capable of exercising fundamental rights, either in their entirety or as the sum of the individual people who will only live in the future (see above marginal no. 109; cf. Calliess, Rechtsstaat und Umweltstaat, 2001, p. 119 f.; Gärditz, in: Landmann/Rohmer, Umweltrecht, 93rd EL August 2020, Art. 20a GG marginal no. 95). 147

bb) The protection of life and physical integrity under Article 2.2 sentence 1 of the Basic Law includes protection against impairments and, in particular, against damage to fundamental rights protected by environmental burdens, regardless of by whom and through what circumstances they are threatened (cf. BVerfGE 49, 89 <140 f.>; established case-law; Sparwasser/Engel/Voßkuhle, Umweltrecht, 5th ed. 2003, p. 51 f.). According to the jurisprudence of the European Court of Human Rights, the European Convention on Human Rights also imposes positive obligations on the state to protect against environmental damage that endangers life and health.

(cf. on Art. 2 ECHR, for example, ECtHR, Öneriyildiz v. Turkey, Judgment of 30 November 2004, No. 48939/99, para. 89 et seq. 20 March 2008, no. 15339/02 et al., para. 128 et seq.; on Art. 8 ECHR, e.g. ECtHR, Cordella et Autres c. Italie, Judgment of 24 January 2019, Nos. 54414/13 and 54264/15, para. 157 et seq. with further references; cf. on this Vöneky/Beck, in: Proelß <ed.>, International Environmental Law, 2017, 133 <146 et seq.>; Hänni, EuGRZ, 2019, 1 <7 et seq.> with further references; Groß, in: Kahl/Weller. <editors>, Climate Change Litigation, 2021, 81 <85 ff.> with further references). However, as far as can be seen, this does not result in more extensive protection than that required by Article 2 (2) sentence 1 of the Basic Law.

The state's duty to protect, which follows from Article 2(2) sentence 1 of the Basic Law, also includes the obligation to protect life and health from the dangers of climate change (see also VG Berlin, Judgment of 31 October 2019 - 10 K 412.18 - para. 70; Groß, EurUP 2019, 353 <361>; Bickenbach, JZ 2020, 168 <170 f.>; Meyer, NJW. 2020, 894 <897>; Buser, DVBl 2020, 1389 <1390>; Spieth/Hellermann, NVwZ 2020, 1405 <1406 f.>; Stürmlinger, EurUP 2020, 169 <176>; Kahl, JURA 2021, 117 <126>). In view of the great dangers that an ever-advancing climate change may entail, also for the legal interests protected by Article 2.2 sentence 1 of the Basic Law, for example through heat waves, floods or hurricanes (above para. 22 et seq.), the state is obliged to do so both for the people living today and under objective law with regard to future generations.

On the one hand, Art. 2 para. 2 sentence 1 GG obliges the state to protect by taking measures that contribute to limiting anthropogenic global warming and the associated climate change (cf. also Art. 2 para. 1 lit. a PA). The fact that the German state cannot stop this climate change on its own, but only in international involvement, due to the global effect and the global nature of its causes, does not in principle oppose the assumption of the duty to protect under fundamental rights (cf. Groß, NVwZ 2020, 337 <340 f.>; Meyer, NJW 2020, 894 <899>; Kahl, JURA 2021, 117 <127 f.>). The global dimension, however, has significance for the content of the duty to protect under Article 2 (2) sentence 1 of the Basic Law, which relates to climate change. Thus, the state must also seek a solution to the climate protection problem at the international level. Insofar as the duty to protect under Article 2 (2) sentence 1 of the Basic Law is directed against the dangers of climate change, it requires internationally oriented action for the global protection of the climate and obliges the state to work towards climate protection activities within the framework of international coordination (for example, through negotiations, in treaties or in organisations), in which embedded national measures then make their contribution to stopping climate change (for more details, see below marginal no. 200 f. on Article 20a of the Basic Law).

On the other hand, Article 2 (2) sentence 1 of the Basic Law also obliges the state, insofar as climate change cannot be stopped or has already occurred, to counter the dangers by means of positive protective measures (so-called adaptation measures, see para. 164 below). These are additionally necessary in order to limit the dangers

posed by the actual consequences of climate change to a constitutionally acceptable level (cf. also Art. 2 para. 1 lit. b PA).

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b) It cannot be established at present that the duty to protect fundamental rights has been violated by the regulations objected to by the complainants as inadequate. 151

aa) Whether sufficient measures have been taken to fulfil fundamental rights' duties to protect can only be reviewed by the constitutional court to a limited extent (cf. BVerfGE 77, 170 <214 f.>; 79, 174 <202>; case-law). The subjective rights of defence against state interference that follow from the fundamental rights, on the one hand, and the duties to protect that result from the objective significance of the fundamental rights, on the other hand, differ fundamentally from each other in that the right of defence prohibits a certain state conduct in its objective and content, whereas the duty to protect is fundamentally indeterminate. The decision as to how dangers are to be counteracted, the establishment of a concept of protection and its normative implementation are the responsibility of the legislature, which, in principle, also has a discretionary power of assessment, evaluation and design if it is obliged on the merits to take measures for the protection of a legal interest (cf. BVerfGE 96, 56 <64>; 121, 317 <356>; 133, 59 <76 marginal no. 45>; 142, 313 <337 marginal no. 70>; case law). Thus, if a duty to protect exists in principle, the question of the effectiveness of state protective measures is not beyond constitutional court review. The Federal Constitutional Court determines the violation of a duty to protect if protective measures are either not taken at all, if the regulations and measures taken are obviously unsuitable or completely inadequate to achieve the required protection goal, or if they fall considerably short of the protection goal (see BVerfGE 142, 313 <337 f. marginal no. 70> with further references; case law). 152

bb) This is not the case here.

(1) The German legislator has taken protective measures which are also not obviously inappropriate. The legislator has made efforts to contribute to limiting climate change, not least with the provisions of the Climate Protection Act that are challenged here. The provisions adopted are not obviously unsuitable to protect the protected interests of Article 2 (2) sentence 1 of the Basic Law. 153
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However, a protection concept would be unsuitable if it were aimed at reducing greenhouse gas emissions without pursuing the goal of climate neutrality (cf. Section 2 No. 9 KSG). Only when greenhouse gas emissions are limited to a climate-neutral level can global warming be halted (para. 32 above). However, the Climate Protection Act does not ignore this. The commitment to pursue greenhouse gas neutrality by 2050 is its basis (Section 1, Sentence 3 of the Climate Protection Act); the reduction quota of at least 55 % compared to 1990 (Section 3, Paragraph 1, Sentence 2 of the Climate Protection Act) set for the target year 2030 is recognisably a mere interim goal on the way to climate neutrality. 155

However, the neutrality target oriented towards a specific target year as well as the reduction target formulated in Article 3 para. 1 sentence 2 KSG would be in themselves 156

not suitable for maintaining a certain temperature threshold. This would not determine how much greenhouse gas may be emitted in the meantime (para. 125 above). However, the extent of global warming and climate change depends on the total volume of greenhouse gas remaining in the earth's atmosphere. The Climate Protection Act, however, regulates more than just a reduction quota and climate neutrality measure geared to a specific target year. Section 3 (1) sentence 1 of the Climate Protection Act stipulates that greenhouse gas emissions must be reduced in stages. The requirement of continuous reduction is not limited to a specific target year, but applies until greenhouse gas neutrality is achieved. In addition, § 4 para. 1 sentence 3 KSG in conjunction with Annex 2 quantifies and limits in exact figures, even if not covering all greenhouse gas emissions, the amount of emissions permissible in Germany until 2030. Although the annual emission levels for periods from 2031 onwards are not updated until later (Article 4 para. 1 sentence 5, para. 6 KSG), they must also continue to fall in accordance with Article 3 para. 1 sentence 1 KSG. In principle, this control technique is suitable for maintaining a certain temperature threshold and protecting against the dangers of climate change accordingly.

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(2) Nor can it be established that the protection provided by the legislature would be completely inadequate to achieve the protection goal required by Article 2 (2) sentence 1 of the Basic Law. It would be completely inadequate to allow climate change to take its course and to implement the protection mandate under fundamental rights solely by means of adaptation measures (para. 34 above) (cf. Rechtbank Den Haag, judgment of 24 June 2015, C/09/456689 / HA ZA 13-1396, para. 4.75.; Hoge Raad der Nederlande, judgment of 20 December 2019, 19/00135, marginal no. 7.5.2). Adaptation measures alone would not be sufficient to limit life and health hazards in Germany in the long term (cf. Groß, NVwZ 2020, 337 <341>; Kahl, JURA 2021, 117 <128>). The legislature must therefore protect life and health in particular by contributing to the fight against climate change. It does this with the Climate Protection Act and in other laws that limit the emission of greenhouse gases.

(3) As a result, it cannot be established that the challenged regulations fall considerably short of the protection of life and health required by Article 2 (2) sentence 1 of the Basic Law. However, the complainants consider the climate protection goal of the Paris Agreement, which is also the basis of the Climate Protection Act in § 1 sentence 3 of the Climate Protection Act, to be insufficient (a). In addition, they are of the opinion that the reduction measures regulated in the Climate Protection Act are not even suitable to meet this target (b), and object that the concrete climate protection measures taken are not even sufficient to meet the reduction measures regulated in the Climate Protection Act (c).

(a) Pursuant to section 1 sentence 3 of the Climate Protection Act, the Climate Protection Act is based on the obligation under the Paris Agreement to limit the increase in the average global temperature to well below 2 °C and, if possible, to 1.5 °C above the pre-industrial level ("Paris target"). The complainants, however, claim

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The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) argues that the duty to protect arising from Article 2 (2) sentence 1 of the Basic Law can only be fulfilled if the goal of limiting global warming to a maximum of 1.5 °C is pursued. That an average global warming of more than 1.5 °C would have significant climate consequences is a widely held view (cf. only BMU, Klimaschutz in Zahlen, 2019 edition, p. 10). This is based in particular on the IPCC Special Report on the Consequences of Global Warming of 1.5 °C from 2018 (IPCC, Special Report, Global Warming of 1.5 °C, 2018; see also IPCC, Special Report, 1.5 °C Global Warming, Summary for Policymakers, 2018).

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It is true that the Special Report does not state that warming must be limited to 1.5 °C. In fact, such a statement could not be made as a scientific statement at all. In fact, such a statement could not be made as a scientific statement, because the decision as to which climate warming should and may be accepted is of a normative nature and requires a valuation. Instead, the Special Report contains a comparison of the consequences of a global warming scenario of 1.5 °C and a warming scenario of 2 °C. In summary, the Special Report presents the consequences of a global warming scenario of 1.5 °C and a global warming scenario of 2 °C. In summary, the report finds that the climate-related risks to natural and human systems are lower under a 1.5 °C warming scenario than under a 2 °C warming scenario (IPCC, Special Report, 1.5 °C Global Warming, Summary for Policymakers, 2018, summary p. 9, A.3). This comparison does not prove the absolute necessity of stopping global warming at 1.5 °C.

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However, the 1.5 °C maximum target has become the focus of attention primarily because the IPCC's Special Report also indicates that this limit recognisably reduces the likelihood of so-called tipping points being exceeded (cf. also Hoge Raad of the Netherlands, judgment of 20 December 2019, 19/00135, paras. 4.2, 4.4; Irish Supreme Court, judgment of 31 July 2020, 205/19, para. 3.7). The negative consequences of exceeding tipping points for humans and the environment would actually go beyond the direct effects of the temperature increase. Larger subsystems of the environment could change qualitatively as a result (para. 21 above). In this respect, the IPCC has tightened its risk assessment in the 2018 Special Report. Whereas a few years ago the IPCC's 5th Assessment Report estimated the risk of reaching tipping points at a temperature increase of 1.6 °C as moderate and at 4 °C as high, the IPCC now assumes a moderate risk at a global warming of 1 °C and a high risk at 2.5 °C (IPCC, Special Report, Global Warming of 1.5 °C, 2018, Chapter 3, p. 257 f., 3.5.2.5 <medium confidence>). The IPCC includes, for example, a potential additional release of CO₂ due to future thawing of permafrost (IPCC, Special Report, 1.5 °C Global Warming, Summary for Policymakers, 2018, p. 11, C.1.3). In particular, the instability of marine ice sheets in the Antarctic and irreversible losses of the Greenland ice sheet could result in a sea level rise of several metres over a period of hundreds to thousands of years. This could be triggered by a global warming of about 1.5 °C to 2 °C

(IPCC, op. cit., p. 11, B.2.2 <medium confidence>). In view of these findings, limiting global warming to 1.5 °C would create a certain margin of safety (cf. Calliess, ZUR 2019, 385 et seq.; Winter, ZUR 2019, 259 <264>; Meyer, NJW 2020, 894 <897 f.>).

If the legislator has nevertheless based national climate protection law on the understanding of the Parties to the Paris Agreement to limit global warming to well below 2 °C and if possible to 1.5 °C, this may be judged politically to be too unambitious. However, in view of the considerable uncertainty, which the IPCC itself has documented by stating ranges and uncertainties, the legislature currently has considerable leeway for decision-making in fulfilling its duty to protect fundamental rights (cf. BVerfGE 49, 89 <131>; 83, 130 <141 f.>), especially since it must also reconcile the requirements of health protection with conflicting concerns (cf. BVerfGE 88, 203 <254>).

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Contrary to the complainants' opinion, it cannot currently be established that the legislature has exceeded this leeway by basing its action on the Paris target. The violation of fundamental rights protection obligations cannot be derived directly from normative assumptions and findings on climate protection. Climate protection and the protection of the legal interests of human life and bodily integrity mentioned in Article 2 (2) sentence 1 of the Basic Law have a large overlap, but they are not congruent; for example, measures may be necessary to preserve a climate that is friendly to the environment, animals and people, which would not be necessary solely for the sake of protecting human life and health, and vice versa. It cannot be ruled out from the outset that a temperature threshold of 1.5 °C may be advisable to limit climate change, but that the Paris target adopted by the German legislature of limiting the temperature increase to well below 2 °C and if possible to 1.5 °C is sufficient to protect human life and health.

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Differences between climate protection and health protection requirements can also arise because the dangers of climate change for human life and health can be mitigated to some extent by adaptation measures. While climate change as such cannot be prevented by adaptation measures and all efforts must therefore be directed towards limiting global warming, complementary protection by adaptation measures is in principle possible in the case of risks to life and health. The German Adaptation Strategy describes numerous measures of various kinds through which the effects of climate change could be absorbed and severe consequences avoided (see in particular Federal Government, German Strategy for Adaptation to Climate Change, 2008; UBA, Monitoring Report 2019 on the German Strategy for Adaptation to Climate Change, 2019; Federal Government, Second Progress Report on the German Strategy for Adaptation to Climate Change, 2020).

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For example, suitable architecture as well as urban and landscape planning should contribute to alleviating the climatically induced heating of cities, and in urban centres fresh air should be supplied via fresh air corridors, for example through unobstructed fresh air corridors and extensive green spaces as "cold islands" (Bundesregierung, Deutsche Anpassungsstrategie an den Klimawandel, 2008, p. 19; UBA, loc. cit., p. 160 f.); protection against the increasing flood risk in river basins is to be strengthened by passive protection measures, above all by keeping buildings free of buildings, as well as by active flow regulation; the use of open spaces for settlement and infrastructure is to be reduced (UBA, loc. cit., p. 229) and efforts are to be made to deconstruct and unseal as well as renaturalise and reforest suitable areas (Federal Government, German Strategy for Adaptation to Climate Change, 2008, p. 43). Damaging floods in connection with heavy rain events could be reduced by installing backwater flaps or by reconstructing the sewage system (Bundesregierung, loc. cit., p. 23). Thus, the progress report of the Federal Government assumes in the result for human health in Germany that a medium to partly high vulnerability is accompanied by a medium to high adaptive capacity in the near future (Federal Government, Progress Report on the German Strategy for Adaptation to Climate Change, 2015, p. 55).

Accordingly, if the government and the legislature assume that if the increase in the average temperature is limited to well below 2 °C and as close as possible to 1.5 °C (section 1 sentence 3 KSG), the consequences of climate change in Germany could be mitigated by adaptation measures to such an extent that the level of protection required by Article 2 (2) sentence 1 GG is maintained, they do not, at least at present, exceed their scope for decision-making left by the duty to protect under fundamental rights.

(b) The complainants also object to the fact that the provisions in § 3 para. 1 sentence 2 and in

The reduction targets set out in § 4 para. 1 sentence 3 of the Climate Protection Act in conjunction with Annex 2 up to the year 2030 were already insufficient to achieve the goal set out in § 1 sentence 3 of the Climate Protection Act, which in their view is insufficient, namely to limit global warming to well below 2 °C and if possible to 1.5 °C. In fact, there are indications that according to the reduction path set out in the Climate Protection Act up to the year 2030, an overall reduction would no longer be feasible that would correspond to a German contribution to limiting global warming. In fact, there are indications that, according to the reduction path regulated in the Climate Protection Act until 2030, an overall reduction would no longer be feasible that could correspond to a German contribution to limiting global warming to 1.5 °C, and that, for example, the overall reduction corresponding to a 1.75 °C target could only be achieved at all if extraordinarily burdensome reduction efforts were undertaken after 2030 (for more details, see below para. 231 et seq.). Compliance with the reduction contribution corresponding to a 2 °C target, on the other hand, would seem more feasible. This would not, however, be sufficient to meet the Paris objective of "significantly below 2 °C". The genesis of the reduction quota specified in Article 3 (1) sentence 2 of the Climate Change Act indicates that this value was originally linked

to a 2 °C target. The reduction quota of 55 % was set by the federal government.

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In 2010, the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU/BMWi, *Energiekonzept 2010 für eine umweltschonende, zuverlässige und bezahlbare Energieversorgung*, 2010, p. 5) identified this as the interim target to be achieved in 2030 for the reduction path extending to 2050. At that time, however, it was probably only aiming to prevent average global warming of more than 2 °C (BMU, *Action Programme Climate Protection 2020*, 2014, p. 7).

The emission reduction path regulated in Article 3 para. 1 sentence 2 and in Article 4 para. 1 sentence 3 KSG in conjunction with Annex 2 until the year 2030 raises the question of compatibility with the constitutional requirement to protect the climate (Article 20a of the Basic Law) (recitals 196 et seq., 230 et seq. below). Also, the potentially very high reduction burden that will have to be met from 2031 onwards cannot be justified under constitutional law without further ado (below marginal no. 243 ff.). With regard to the protected interests of Article 2 (2) sentence 1 of the Basic Law, which are solely relevant at this point, it cannot be determined at present that the state has violated its duty to protect with the reduction path regulated until 2030, possibly still oriented towards a 2 °C target. There is no evidence that the health consequences of global warming by 2 °C and the corresponding climate change in Germany could not be sufficiently alleviated by supplementary adaptation measures under constitutional law (above para. 163 et seq.). It is true that the health protection requirement could hardly be satisfied by adaptation measures if the legislature allowed climate change free rein (supra para. 157); however, this is not the case. As long as the legislature does not abandon the goal set in section 1, sentence 3 of the Climate Protection Act of achieving climate neutrality in the foreseeable future in order to comply with the Paris target on which it is based, and as long as it continues to pursue the reduction path set out in section 3 para. 1 and section 4 para. 1, sentence 3 of the Climate Protection Act in conjunction with Annex 2 with ever increasing reduction quotas (cf. Section 3 para. 3 sentence 2 KSG) and with annually decreasing emission levels (cf. Section 4 para. 6 sentence 1 KSG), it is not recognisable from today's perspective that constitutionally sufficient health protection would not be possible at least through supplementary adjustment measures.

Therefore, it cannot be determined at present that the legislature's scope for fulfilling its duty to protect under Article 2 para. 2 sentence 1 of the Basic Law has been exceeded by the emission reduction path specifically regulated in § 3 para. 1 sentence 2 and in § 4 para. 1 sentence 3 of the KSG in conjunction with Annex 2 until the year 2030. However, the compatibility of this reduction path with the climate protection requirement (Article 20a of the Basic Law) and the other freedoms has not yet been decided (see below para. 196 ff. and para. 243 ff.).

(c) Finally, the complainants argue that the concrete measures taken in Germany to reduce greenhouse gas emissions are not even sufficient to comply with the reduction path specified in § 3 para. 1 sentence 2 and in § 4 para. 1 sentence 3 KSG in conjunction with Annex 2 by the year 2030, which in their view is inadequate anyway. This is also indicated by scientific studies. A study commissioned by the Federal Environment Agency from the Öko-Insti

The German Federal Environment Agency (UBA) concludes that the measures of the current climate protection programme would only lead to a reduction of 51% by 2030 compared to the base year 1990 (UBA, Treibhausgas-minderungs-wirkung des Klimaschutz- programm 2030, 2020, p. 22). A study commissioned by the Federal Ministry of Economics and Energy assumes a reduction of 52.2% compared to 1990 (Prognos, Energiewirtschaftliche Projektionen und Folgenabschätzungen 2030/2050, 2020, p. 68). Neither of these fully met the 55 % reduction target set out in Article 3 (1) sentence 2 KSG.

In this respect, however, the fact that the specific national climate protection instruments can still be further developed in such a way that the reduction target set for 2030 is met already stands in the way of a finding of a violation of the duty to protect under Article 2 (2) sentence 1 of the Basic Law. Reduction deficits could still be compensated for within this period. Section 4 para. 3 sentence 1 KSG already provides for a catch-up obligation. In view of the shortfall predicted in the studies, this does not seem unrealistic from the outset. Moreover, it is also true in this respect that the requirements of fundamental health protection do not necessarily coincide with those of the constitutional climate protection requirement under Article 20a of the Basic Law or with the climate protection requirements under simple law. 170

2. a) The fundamental right to property in Article 14.1 of the Basic Law also includes a state duty to protect (cf. BVerfGE 114, 1 <56>). Since, as a result of climate change, property, in particular agricultural land and real estate, can also be damaged in various ways in Germany, Article 14.1 of the Basic Law includes a duty of the state to protect property with regard to the dangers of climate change. It is of particular importance that, in the event of unhindered climate change, houses or even entire settlements could become uninhabitable in Germany as a result of flooding and rising sea levels (para. 25 above). With the property, firm social ties in the local environment would be lost at the same time. Article 14.1 of the Basic Law, which also guarantees a certain protection of the social environment that has grown into a "home" (cf. BVerfGE 134, 242 <331 f. marginal no. 270>), requires that such roots be taken into account. 171

b) However, it cannot be established at present that the duty to protect under fundamental rights is violated by the provisions objected to by the complainants. In this respect, too, in view of the legislature's leeway in fulfilling its duty to protect fundamental rights, a violation of the constitution only exists if protective measures are either not taken at all, if the regulations and measures taken would be manifestly unsuitable or completely inadequate to achieve the required objective of protection, or if they would fall considerably short of the objective of protection (see BVerfGE 142, 313 <337 et seq., marginal no. 70> with further references; case-law). In particular, the legislature has a wide margin of manoeuvre in determining how to strike an appropriate balance between the interests of the owners endangered by climate change and the interests opposing stricter climate protection. It is the 172

At present, it is not apparent that this limit has been exceeded by the challenged regulations. The legislator does not give free rein to CO2 emissions, but in § 3 para. 1 sentence 2 and § 4 para. 1 sentence 3 KSG in conjunction with Annex 2 has laid down a reduction path which is to be continued with further decreasing annual emission quantities (§ 4 para. 1 sentence 5 KSG). The reduction targets set out in Article 3 para. 1 sentence 2 and in Article 4 para. 1 sentence 3 KSG in conjunction with Annex 2 until 2030 may have been derived from the original objective of limiting global warming to 2 °C, which is more generous than the objective set out in Article 1 sentence 3 KSG (para. 166 above). At present, however, it is not foreseeable that property located in Germany would be so endangered by this objective that it could not be kept within constitutionally acceptable limits by protective measures.

II.

The violation of a fundamental rights obligation to protect the complainants living in Bangladesh and Nepal cannot be established as a result. 173

It seems conceivable in principle, but ultimately does not need to be decided here, that fundamental rights obligations to protect also oblige the state to take action against impairments caused by global climate change vis-à-vis the complainants living in Bangladesh and Nepal. In their home country, the complainants are particularly exposed to the consequences of global warming caused by global greenhouse gas emissions. Due to the global effect of greenhouse gases, further global warming can only be stopped by climate protection efforts of all states. To this end, greenhouse gas emissions in Germany must also be reduced to a climate-neutral level. Greenhouse gas emissions from Germany currently account for just under 2% of global greenhouse gas emissions (BMU, Klimaschutz in Zahlen, edition 2020, p. 12); it is up to the German legislator to limit these emissions. 174

Article 1.3 of the Basic Law does not limit the German state's obligation to respect fundamental rights to its national territory, but establishes a comprehensive obligation of the German state to respect the fundamental rights of the Basic Law (BVerfGE 154, 152 <215 et seq. Rn. 88 f.> - BND - Ausland-Ausland-Fernmeldeaufklärung; cf. already BVerfGE 6, 32 <44>; 6, 290 <295>; 57, 9 <23>; 100, 313 <363>). However, the 175
Federal Constitutional Court has also established that, despite the comprehensive binding of the German state authority to the fundamental rights, the concrete protective effects resulting from the fundamental rights, including their scope abroad, may differ according to the circumstances under which they are applied. Thus, a distinction may have to be made between different dimensions of fundamental rights, such as the effect of fundamental rights as rights of defence, as rights to benefits, as constitutional value decisions or as the basis of duties to protect (see BVerfGE 154, 152 <224 marginal no. 104> - BND - Foreign Telecommunications Reconnaissance). Under which circumstances fundamental rights as the basis of duties to protect against

The question of whether or not the right to protection applies to people living abroad has not yet been clarified in detail. A possible connecting factor for a fundamental rights protection obligation here would be that the severe impairments to which the complainants could be (further) exposed due to climate change are also caused to a certain extent, albeit to a lesser extent, by greenhouse gas emissions emanating from Germany (on the possibility of cross-border protection obligations, in particular due to cross-border environmental effects, see also R. Hofmann, *Grundrechte und grenzüberschreitende Sachhalte*, 1993, p. 34; Ohler, *Kollisionspflichten insbesondere wegen grenzüberschreitender Umweltauswirkungen*. Hofmann, *Grundrechte und grenzüberschreitende Sachverhalte*, 1993, p. 343; Ohler, *Die Kollisionsordnung des Allgemeinen Verwaltungsrechts*, 2005, p. 288 with further references; Badura, in: Merten/Papier, *HGRe Bd. II*, 2006, § 47 Rn. 15, 18, 20; Dederer, in: Isensee/Kirchhof, *HStR XI*, 3rd ed. 2013, § 248 marginal nos. 86, 94 ff., 113 with further references).

2. A duty to protect the complainants living in Bangladesh and Nepal would in any case not have the same content as for people living in Germany. In general, the content of fundamental rights protection requirements vis-à-vis people living abroad can differ from the content of fundamental rights protection vis-à-vis people living in Germany; under certain circumstances, it requires modification and differentiation (cf. BVerfGE 100, 313 <363> with further references; 154, 152, 1st lead sentence - BND - *Ausland-Ausland-Fernmeldeaufklärung*; Badura, in: Merten/Papier, *HGRe Vol. II*, 2006, § 47 marginal no. 14; F. Becker, in: Isensee/Kirchhof, *HStR XI*, 3rd ed. 2013, § 240 marginal no. 109; Dreier, in: Dreier, *GG*, 3rd ed. 2013, Art. 1 para. 3 marginal no. 45). This would be the case here if the duties to protect under fundamental rights intervened in favour of the people living in Bangladesh and Nepal.

The state fulfils its duty towards the people living in Germany to protect their fundamental rights from violations caused by the effects of climate change in two different ways. On the one hand, it must take measures that contribute to halting global warming. Secondly, it can protect fundamental rights by taking adaptation measures that do not mitigate climate change, but do mitigate its negative effects on the fundamental rights of people living in Germany (supra para. 34, 164). Notwithstanding stricter climate protection obligations, which may follow from Article 20a of the Basic Law, the form of the fulfilment of the duty to protect under fundamental rights is a politically responsible combination of climate protection and adaptation measures and the result of a balancing with possibly conflicting concerns (cf. BVerfGE 88, 203 <254>).

The German state could protect people living abroad as well as those living in Germany from the consequences of climate change by reducing greenhouse gas emissions generated in Germany. The fact that it cannot stop global climate change on its own, but can only do so effectively through international involvement, does not in principle rule out a duty to protect under fundamental rights here either (see above marginal no. 149). However, the German state would not have the same possibilities to protect people living abroad. In view of the limits of German sovereignty under

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The Federal Government is obliged to take measures to protect the people living there (cf. Dederer, in: Isensee/Kirchhof, HStR XI, 3rd ed. 2013, § 248 marginal no. 107 with further references; Sachs, in: Sachs, GG, 8th ed. 2018, Vorbem. Art. 1 para. 20; Gärditz, in: Landmann/Rohmer, Umwelt- recht, 93rd EL August 2020, Art. 20a GG para. 18; see also Badura, in: Merten/Pa- pier, HGRRe vol. II, 2006, § 47 para. 20; Herdegen, in: Maunz/Dürig, GG, 92nd EL August 2020, Art. 1 para. 3 para. 80). Rather, it is the task of the states concerned to select and take the necessary measures. While measures such as reducing the use of open spaces or deconstruction, deforestation, renaturation and afforestation of suitable areas and the establishment of resistant plant varieties are in principle feasible in Germany, this is obviously not possible for the German state abroad. This is also illustrated by a look at some of the adaptation measures considered possible and necessary worldwide by the IPCC (IPCC, Climate Change 2014, Impacts, Adaptations and Vulnerability, 2014, p. 840 ff.), which include in particular the modification of existing infrastructure to provide better protection against heat, wind and flooding. In cyclone and flood-prone areas, the IPCC mentions low and aerodynamically designed buildings, sewage systems, dykes, flood embankments, filling of beaches, building renovation, in cities sustainable infrastructure such as green roofs, parks and percolating traffic areas, and in agriculture efficient irrigation systems and the establishment of plants with high drought tolerance, but also resettlement (IPCC, op. cit., p. 844 ff.). None of these measures could be carried out by the German state itself in the complainants' home country. For this reason alone, a duty to protect could not have the same content as towards people living in Germany.

This does not preclude Germany from assuming responsibility, either politically or under international law, for ensuring that positive measures to protect people can be implemented in the poorer and even harder-hit countries (Bundesregierung, Deutsche Anpassungsstrategie an den Klimawandel, 2008, p. 54 ff.; Bundesregierung, Zweiter Fortschrittsbericht zur Deutschen Anpassungsstrategie an den Klimawandel, 2020, p. 60 f.). Art. 9 para. 1 PA explicitly stipulates that Parties that are developed countries shall provide financial resources to assist Parties that are developing countries in adaptation as well (cf. on different responsibilities in climate protection in particular Art. 2 para. 2 PA).

3. Even if the German state were obliged by Article 2.2 sentence 1 and Article 14.1 of the Basic Law to contribute to limiting the rise in temperature in order to protect the complainants from Bangladesh and Nepal, such an obligation to protect would not be violated by the challenged regulations. As has been seen, the legislature cannot be reproached for not having taken measures to limit climate change at all or for having only taken such regulations and measures that would be obviously unsuitable or completely inadequate to achieve the required protection goal (above para. 154 et seq.). In particular

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Germany has acceded to the Paris Agreement on Climate Change and in Section 1, Sentence 3 of the Climate Change Act, the federal legislator has made both the obligation under the Agreement and the commitment of the Federal Republic of Germany to pursue greenhouse gas neutrality by 2050 as a long-term goal the basis of the Climate Change Act. The second sentence of Article 3(1) and the third sentence of Article 4(1) of the Climate Protection Act in conjunction with Annex 2 set out specific reduction targets for the period up to 2030. Numerous other laws contain measures to limit climate change.

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The criterion to be applied to protective measures in domestic situations, namely that they must not fall significantly short of the objective of protection (cf. BVerfGE 142, 313 <337 et seq., marginal no. 70>; case-law), could not be applied to a duty to protect against the dangers of climate change vis-à-vis complainants living abroad. In this respect, too, the standard of review would require modification in view of the special features of a duty to protect people abroad. Whether protective measures against the dangers of climate change fall significantly short of the protection objective could not be answered in isolation on the basis of the measures taken to prevent climate change. Rather, this would also depend on which adaptation measures are possible to protect against the consequences of climate change. In principle, this is no different in the case of foreign affairs than in the case of domestic affairs (see recitals 154, 164 and 177 above). The difference is rather that the German state would not have adaptation measures available to it as protective measures in the case of foreign matters (see above marginal no. 178). It would thus only have access to a part of the precautions possible and necessary for protection against climate change abroad. Whether the measures are sufficient to protect fundamental rights or not, however, could only be assessed in the context of the climate protection measures and the possible adaptation measures. In the fulfilment of fundamental rights protection obligations, emission reduction and adaptation measures complement each other and are inextricably linked. In this respect, the violation of a possible duty to protect could not be established. Rather, the Federal Republic of Germany and, in particular, the German legislature would have fulfilled this duty to protect through international advocacy for climate protection and through concrete measures to implement what has been agreed internationally on climate protection (above para. 154 et seq.).

III.

On the other hand, the legislature has violated fundamental rights because it has not taken sufficient precautions to cope with the potentially very high emission reduction obligations in later periods - due to the emissions permitted by law until 2030 - in a manner that does not violate fundamental rights. In this respect, § 3.1 sentence 2 and § 4.1 sentence 3 KSG in conjunction with Annex 2 already violate the fundamental rights of the complainants in the proceedings 1 BvR 96/20 and 1 BvR 288/20 and the complainants re 1) to 11) in the proceedings 1 BvR 2656/18.

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The decision of the legislature to allow the amount of CO₂ emissions regulated in § 3.1 sentence 2 and § 4.1 sentence 3 KSG in conjunction with Annex 2 until the year 2030 has a preliminary effect similar to an intervention on the complainants' freedom, which is comprehensively protected by the Basic Law, and requires constitutional justification (1). Admittedly, the endangerment of the rights of freedom is not already unconstitutional because of a violation of objective constitutional law; a violation of Article 20a of the Basic Law cannot be established (2 a). However, sections 3(1)(2) and 4(1)(3) of the KSG in conjunction with Annex 2 are unconstitutional insofar as they create disproportionate risks of interference with future fundamental freedoms. Because the emission quantities envisaged in the two provisions until 2030 significantly reduce the remaining emission possibilities after 2030 while maintaining the constitutionally required climate protection, the legislature must take sufficient precautions to ensure a freedom-protecting transition to climate neutrality. Under certain conditions, the Basic Law obliges to safeguard freedom protected by fundamental rights over time and to distribute freedom opportunities proportionately across generations. As an intertemporal safeguard of freedom, the fundamental rights protect the complainants here from a unilateral shifting of the greenhouse gas reduction burden imposed by Article 20a of the Basic Law into the future (on this, see above para. 117 et seq.). In this respect, minimum regulations on reduction requirements after 2030 are lacking, which would be suitable to provide fundamental orientation and incentives for a necessary development of climate-neutral technologies and practices in due time (2 b).

1. a) The decision of the legislature to allow the amount of CO₂ emissions regulated in § 3 para. 1 sentence 2 and § 4 para. 1 sentence 3 KSG in conjunction with Annex 2 until the year 2030 has a preliminary effect similar to an intervention on the freedom of the complainants protected by the Basic Law. The Basic Law protects all human activities of freedom by means of special fundamental rights of freedom and, in any case, by means of the fundamental "general right of freedom" contained in Article 2.1 of the Basic Law (see Alexy, *Theorie der Grundrechte*, 1985, p. 309 et seq. 309 et seq.; Eifert, in: Herdegen/Masing/Poscher/Gärditz <ed. >, *Handbuch des Verfassungsrechts*, 2021, § 18 marginal no. 39 et seq. with further references) (fundamental BVerfGE 6, 32 <36 et seq.>; case law). Also protected is the currently still high number of behaviours in daily life, work and business (above marginal no. 37), which directly or indirectly lead to CO₂ emissions entering the earth's atmosphere.

However, any such exercise of freedom is subject to the limits to be set by the legislator for the protection of the climate under Article 20a of the Basic Law as well as for the fulfilment of fundamental rights protection obligations. The possibilities of making use of constitutionally protected freedom in a way that is directly or indirectly linked to CO₂ emissions come up against constitutional limits because, according to the current state of affairs, CO₂ emissions essentially irreversibly contribute to the warming of the earth.

but the legislature may not, on account of the constitution, accept an ad infinitum progress of climate change without taking action. Constitutionally relevant in this respect is the climate protection requirement of Article 20a of the Basic Law (cf. BVerfGE 118, 79

<110 f.>; 137, 350 <368 f. para. 47, 378 para. 73>; 155, 238 <278 para. 100>), the is concretised by the legislature through the goal of limiting global warming to well below 2 °C and, if possible, to 1.5 °C above the pre-industrial level (para. 208 ff. below). If the CO2 budget corresponding to this temperature threshold runs out, behaviour that is directly or indirectly linked to CO2 emissions may only be permitted insofar as the corresponding fundamental rights can prevail when weighed against climate protection. In this context, the relative weight of the exercise of freedom decreases more and more as climate change progresses due to the increasingly intensive environmental impacts.

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Against this background, regulations that now permit CO2 emissions constitute an irreversible legal threat to future freedom, because with each CO2 emission quantity that is permitted today, the constitutionally defined residual budget is irreversibly reduced and CO2-relevant use of freedom will be subject to stronger, constitutionally required restrictions (for more details, see recital 117 et seq. above). It is true that the use of freedom relevant to CO2 would have to be essentially prevented at some point anyway, because global warming can only be stopped if the anthropogenic CO2 concentration in the earth's atmosphere does not rise any further. However, a rapid depletion of the CO2 budget by 2030 exacerbates the risk of serious losses of freedom, because the time span for technical and social developments becomes shorter, with the help of which the changeover from today's lifestyle, which is still comprehensively associated with CO2 emissions, to climate-neutral behaviour could be completed in a way that preserves freedom (see above marginal no. 121). The smaller the residual budget and the higher the emission level, the shorter the remaining time for the necessary developments. However, the less recourse can be had to such developments, the more sensitively those entitled to fundamental rights are affected by the restrictions on CO2-relevant behaviour, which are becoming increasingly urgent under constitutional law as the CO2 budget dwindles.

The threat is posed in concrete terms by the regulations that determine which CO2 emission levels are permissible today. In the current climate protection law, these are § 3 para. 1 sentence 2 and § 4 para. 1 sentence 3 KSG in conjunction with Annex 2. The consumption of the annual emission quantities regulated there until 2030 necessarily and irreversibly consumes parts of the remaining CO2 budget. These two provisions also determine how much time is left for the transformations that are necessary to secure freedom while at the same time safeguarding the climate protection imperative. The annual emission quantities permitted by § 3 para. 1 sentence 2 and § 4 para. 1 sentence 3 KSG in conjunction with Annex 2 thus have an inescapable, intervention-like effect on the possibilities remaining after 2030 to actually make use of the freedom protected by fundamental rights.

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sion of the law. This pre-effect is not merely of a factual nature, but is legally mediated: It is constitutional law itself which, with each share consumed of the finite CO2 budget, gives up all the more urgently to prevent further CO2-relevant free exercise. This legally mediated intervention-like effect of current emission volume regulations already requires constitutional justification because of the currently largely irreversible effect of the emission volumes once they have been permitted and have entered the earth's atmosphere.

b) The constitutional justification of this danger of future infringements of freedom requires, on the one hand, that the two provisions of the Climate Protection Act, which have a bearing on the extent of future infringements of freedom, are compatible with elementary fundamental decisions of the Basic Law (aa). Secondly, they must not lead to disproportionate burdens on the future freedom of the complainants (bb). 188

aa) Interferences with fundamental rights can only be justified under constitutional law if the underlying regulations correspond to the elementary fundamental decisions and general constitutional principles of the Basic Law (cf. fundamentally BVerfGE 6, 32 <41>; case law). In view of their encroachment-like effect on fundamentally protected freedoms, this also applies to § 3 (1) sentence 2 and § 4 (1) sentence 3 KSG in conjunction with Annex 2. 189

Such a fundamental constitutional provision is contained in Article 20a of the Basic Law (cf. BVerfGE 128, 1 <48>; 134, 242 <339 marginal no. 289>). Compatibility with Article 20a of the Basic Law is therefore a prerequisite for the constitutional justification of encroachments on fundamental rights (cf. already BVerfGE 134, 242 <339 marginal no. 289, 342 et seq. marginal no. 298, 354 f. Rn. 327>; so also Kahl, JZ 2010, 668 <670 Fn. 17>; Schulze-Fielitz, in: Dreier, GG, 3. ed. 2015, Art. 20a marginal no. 85; Murswiek, in: Sachs, GG, 8th ed. 2018, Art. 20a marginal no. 74; Cremer, ZUR 2019, 278 <280>; Gärditz, in: Landmann/Rohmer, Umweltrecht, 93. EL August 2020, Art. 20a GG marginal no. 25; left open in BVerfG, Order of the 3rd Chamber of the First Senate of 10 November 2009 - 1 BvR 1178/07 -, marginal no. 32). Accordingly, the threat to future freedom posed by § 3 para. 1 sentence 2 and § 4 para. 1 sentence 3 KSG in conjunction with Annex 2 would also not be constitutionally justifiable if the provisions violated Article 20a of the Basic Law because the climate protection required by constitutional law could no longer be realised after 2030 in accordance with the emission levels permitted therein until 2030. 190

The same could apply to the state's objective obligation to protect life and physical integrity of future generations under Article 2 (2) sentence 1 of the Basic Law (see above, para. 146). It would also be violated by an excessive authorisation of CO2 emissions if climate change were to inevitably take on humanly dangerous proportions. Whether this would conflict with the justification of the encroachment-like effect on civil liberties to be assessed here does not need to be clarified, because requirements of the state's objective-law duty to protect from Article 2 (2) sentence 1 of the Basic Law with regard to life and physical integrity must be met in the future. 191

The content of the climate protection proposal does not go beyond the requirements of the climate protection proposal.

bb) Further requirements for constitutional justification result from the requirement of proportionality. The fundamental rights oblige the legislator to design the constitutionally necessary reductions of CO₂ emissions up to climate neutrality in accordance with Article 20a of the Basic Law in a forward-looking manner in such a way that the associated losses of freedom continue to be reasonable despite increasing climate protection requirements and that the reduction burdens are not distributed one-sidedly over time and between the generations at the expense of the future (cf. Kreuter-Kirchhof, DVBl 2017, 97 <102>; Meyer, NJW 2020, 894 <896 f.>; Gärditz, in: Landmann/Rohmer, Umweltrecht, 93rd EL August 2020, Art. 20a GG Rn. 24; see also Kube, in: Kahl <ed.>, Nachhaltigkeit durch Organisation und Verfahren, 2016, p. 137 <143 f., 150 ff.> with further references). It follows from the requirement of proportionality that one generation must not be allowed to consume large parts of the CO₂ budget under a comparatively mild reduction burden if this would at the same time leave future generations with a radical reduction burden - described by the complainants as a "full brake" - and expose their lives to serious losses of freedom. It is true that even serious losses of freedom may be proportionate and justified in the future in order to protect the climate; it is precisely this future justifiability that threatens to result in the risk of having to accept considerable losses of freedom (recitals 117 and 120 above). However, because the course for future encumbrances on freedom is already set by the current regulation of permissible emission levels, their impact on future freedom must be proportionate from today's perspective and at the present time - when the course can still be changed.

This is confirmed by the objective protection mandate of Article 20a of the Basic Law. If Article 20a of the Basic Law obliges the state to protect the natural foundations of life, also in responsibility for future generations, this aims first and foremost at preserving the natural foundations of life for future generations. At the same time, however, this also applies to the distribution of environmental burdens between the generations. The protection mandate of Article 20a of the Basic Law includes the necessity to treat the natural foundations of life with such care and to leave them to posterity in such a condition that subsequent generations cannot continue to preserve them only at the price of their own radical abstinence (cf. Appel, Staatliche Zukunfts- und Entwicklungsvorsorge, 2005, p. 535 with further references).

If a too short-sighted and thus one-sided distribution of freedom and reduction burdens at the expense of the future must be prevented, this requires that the scarce CO₂ residual budget be used up with sufficient care, thus gaining time to initiate the necessary transformations in time, which alleviate the loss of freedom through the constitutionally unavoidable reduction of CO₂ emissions and CO₂-relevant use of freedom by making CO₂-neutral behavioural alternatives available. The objectionable regulations would be

unconstitutional if they allowed so much of the remaining budget to be consumed that the future losses of freedom would inevitably assume unacceptable proportions from today's perspective because there would be no time left for mitigating developments and transformations. If, in view of the manifold uncertainties as to how large the remaining CO2 budget will actually be in the future (para. 220 et seq. below), it cannot be determined with certainty or ruled out that there will have to be such losses of freedom that are unacceptable from today's perspective, measures may nevertheless be required today that at least limit such a risk. If regulations accept a risk of considerable impairment of fundamental rights, fundamental rights may, depending on the nature and severity of the consequences, require that legal regulations be designed in such a way that the risk of infringements of fundamental rights also remains contained (fundamentally BVerfGE 49, 89 <141 f.>). In any case, the principle of proportionality does not only protect against absolute unreasonableness, but also requires a sparing use of fundamental rights protected freedom beforehand. Accordingly, the legislature may be obliged here to take precautionary measures to cope with the reduction burden threatening after 2030 in a way that does not violate fundamental rights (see below, marginal no. 244 et seq.).

2) The regulation of the emission quantities permissible until the year 2030 in § 3 para. 1 sentence 2 and § 4 para. 1 sentence 3 KSG in conjunction with Annex 2 is not constitutional without further precautions in view of the freedom that is considerably endangered by this in later reduction phases. The advance effect of these emission volume regulations on fundamental rights cannot be fully justified under constitutional law. It is true that, in the final analysis, there are no far-reaching reservations about the compatibility with the objective-law requirements of constitutional law. It cannot be established that § 3 para. 1 sentence 2 and § 4 para. 1 sentence 3 KSG in conjunction with Annex 2 violate the climate protection requirement of Article 20a of the Basic Law (a). However, the provisions are unconstitutional insofar as they give rise to the currently insufficiently contained danger of serious impairments of fundamental rights in the future. Because the emission quantities envisaged in the two provisions until 2030 considerably reduce the emission possibilities remaining thereafter in accordance with Article 20a of the Basic Law, sufficient precautions must be taken to ensure a transition to climate neutrality that preserves freedom, in order to ease the reduction burden that will fall on the complainants from 2031 onwards and to contain the associated threat to fundamental rights. To this end, the requirements for further reductions after 2030 must be designed in such a way that they provide sufficient guidance and incentive for the development and comprehensive implementation of climate-neutral technologies and practices. This has been lacking so far (b).

a) The justification of the effect on fundamental rights of § 3.1 sentence 2 and § 4.1 sentence 3 KSG in conjunction with Annex 2 presupposes that the challenged regulations are also compatible with objective constitutional law (above para. 189 et seq.). In this respect, relevant requirements result from Article 20a of the Basic Law, which prescribes the imperative

of climate protection (aa). At present, it cannot be established that Sections 3(1)(2) and 4(1)(3) of the Climate Protection Act in conjunction with Annex 2 (bb) or the individual measures taken to date to protect the climate (cc) violate the principle of climate protection. The legislature has also not violated Article 20a of the Basic Law due to a lack of clarification of the facts or due to a lack of justification of the Climate Protection Act (dd). However, the legislature is still required to realise its efforts to limit the temperature increase to 1.5 °C, as far as possible, as stated in Article 20a of the Basic Law (ee).

aa) Article 20a of the Basic Law obliges the state to protect the climate (1). The obligation to protect the climate does not conflict with the fact that the global nature of climate and global warming precludes a solution to the problems of climate change by one state alone, but it does shape their content. Because the German legislature could not achieve the climate protection mandated by Article 20a of the Basic Law on its own due to the global nature of climate change, Article 20a of the Basic Law also requires that solutions be sought at the international level (2). The open normative content of Article 20a of the Basic Law and the explicitly formulated reference to legislation do not preclude constitutional court review of compliance with the climate protection requirement; Article 20a of the Basic Law is a justiciable legal norm that is intended to bind the political process in favour of ecological concerns, also with a view to the future generations that are particularly affected (3). Section 1, sentence 3 of the Climate Protection Act (KSG) defines the climate protection goal in constitutionally authoritative and permissible terms, namely to limit the increase in the average global temperature to well below 2 °C and, if possible, to 1.5 °C above the pre-industrial level (4).

(1) Article 20a GG obliges the state to protect the climate (cf. BVerfGE 118, 79 <110 f.>; 137, 350 <368 f. para. 47, 378 para. 73>; 155, 238 <278 para. 100>). Central The guiding parameter for the climatic condition of the Earth system as a whole is the mean temperature of the Earth. Accordingly, the climate protection imperative is essentially aimed at maintaining a temperature threshold at which human-induced global warming should be halted. The global warming currently observed results from anthropogenic greenhouse gas emissions entering the Earth's atmosphere. In order to stop global warming at the constitutionally relevant temperature threshold (para. 208 ff. below), a further increase in the concentration of greenhouse gases in the Earth's atmosphere beyond this threshold must be prevented. This is because greenhouse gas concentrations and the climate change resulting from global warming are, as things stand, largely irreversible. Therefore, above all, measures to reduce greenhouse gas emissions are required (cf. already BVerfGE 118, 79 <110>). If the constitutional limits of further global warming have been reached, the constitutional requirement to protect the climate obliges to limit greenhouse gas emissions to a level that is neutral for the greenhouse gas concentration in the earth's atmosphere (cf. also Article 1 sentence 3 and Article 2 no. 9 KSG). In this respect, Article 20a of the Basic Law also aims to achieve climate neutrality. However, Article 20a of the Basic Law does not enjoy unconditional priority.

in relation to other interests, but must be balanced with other constitutional rights and constitutional principles in cases of conflict (cf. BTDrucks 12/6633, p. 6 f.; BVerfGE 127, 293 <328> on animal protection; Schulze-Fielitz, in: Dreier, GG, 3rd ed. 2015, Art. 20a Rn. 46; Murswiek, in: Sachs, GG, 8th ed. 2018, Art. 20a marginal no. 55; Huster/Rux, in: BeckOK, GG, 45th ed. 15.11.2020, Art. 20a marginal no. 44; Kloepfer, in: Bonner Kommentar zum GG, April 2020, Art. 20a Rn. 60 ff; Scholz, in: Maunz/Dürig, GG, 92nd EL August 2020, Art. 20a Rn. 41 ff; Jarass, in: Jarass/Pieroth, GG, 16. ed. 2020, Art. 20a marginal no. 14; Epiney, in: v.Mangoldt/Klein/Starck, GG, vol. 2, 7. ed. 2018, Art. 20a marginal no. 47 ff.). This also applies to the climate protection requirement contained therein. However, due to the irreversibility of climate change to the greatest extent possible as things stand today, exceeding the temperature threshold to be complied with for the protection of the climate could only be justified under narrow conditions - for example, for the protection of fundamental rights. Moreover, the relative weight of the climate protection requirement in the balancing process increases as climate change progresses.

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(2) The obligation to protect the climate under Article 20a of the Basic Law is not precluded by the fact that climate and global warming are global phenomena and that the problems of climate change cannot therefore be solved by the climate protection contributions of one state alone. Like climate change itself, the climate protection mandate of Article 20a GG has a special international dimension from the outset. Article 20a of the Basic Law obliges the state to seek a solution to the climate protection problem at supranational level (a). In an international context, national climate protection measures can have the effect required by Article 20a of the Basic Law; they must be taken to fulfil the constitutional climate protection mandate, even if they could not solve the climate problem on their own (b).

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(a) With the protection of the natural foundations of life, also for future generations, Article 20a of the Basic Law commits to a goal that national legislators cannot achieve for climate alone, but only in international cooperation. This is due to the actual realities of climate change and climate protection. The problem of global warming and its (legal) combating are of a genuinely global nature (cf. Ismer, Klimaschutz als Rechtsproblem, 2014, p. 16; Saurer, NVwZ 2017, 1574 f.; Franzius, ZUR 2017, 515 ff.; Kreuter-Kirchhof, DVBl 2017, 97 <98>; Buck/Verheyen, in: Koch/Hofmann/Reese, Handbuch Umweltrecht, 5th ed. 2018, § 1 Rn. 2; Groß, EurUP 2019, 353 <362>; Meyer, NJW 2020, 894 <898>). No state can prevent global warming on its own. At the same time, every emission from every state contributes equally to climate change (see also Rechtbank Den Haag, judgment of 24 June 2015, C/09/456689 / HA ZA 13-1396, para. 4.90). A solution to the global climate problem is only possible if climate protection measures are taken worldwide.

As a climate protection requirement, Article 20a of the Basic Law thus contains an obligation that necessarily goes beyond the national law available to the individual state alone and is to be understood as a reference to the level of international action. The constitutional requirement to protect the climate thus also has an "inter-

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national dimension" (Schulze-Fielitz, in: Dreier, GG, 3rd ed. 2015, Art. 20a marginal no. 11). It requires the state to act internationally for the global protection of the climate and in particular obliges the federal government to work towards climate protection within the framework of international coordination (for example through negotiations, in treaties or in organisations) (see in this regard already marginally BVerfG, Beschluss der 3. Kammer des Ersten Senats vom 26. Mai 1998 - 1 BvR 180/88 -, Rn. 23; cf. Groß, ZUR 2009, 364 <366 f.> with further references; id, NVwZ 2011, 129 <130>; De-

derer, in: Isensee/Kirchhof, HStR XI, 3rd ed. 2013, § 248 marginal no. 72 with further references; Schulze-Fielitz, in: Dreier, GG, 3rd ed. 2015, Art. 20a marginal no. 64; Wolff, in: Hömig/Wolff, GG, 12th ed. 2018, Art. 20a marginal no. 5; Gärditz, in: Landmann/Rohmer, Umweltrecht, 93rd EL August 2020, Art. 20a GG marginal no. 18; Sommermann, in: v.Münch/Kunig, GG, 7th ed. 2021, Art. 20a marginal no. 24). The international dimension of Article 20a of the Basic Law as a climate protection requirement is not exhausted in the mandate to seek a solution to the climate problem at the international level and, if possible, to reach an agreement to this end. Rather, the constitutional climate protection requirement includes the implementation of agreed solutions (cf. Frank, NVwZ 2016, 1599 et seq.; see also Gärditz, ZUR 2018, 663 <664>). Moreover, Article 20a of the Basic Law also obliges national climate protection if it is not possible to legally formalise international cooperation in an agreement. The state bodies are obliged to protect the climate independently of such an agreement, but would still have to look for opportunities to make national climate protection efforts more effective, but at the same time in international integration.

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(b) Either way, the imperative to take national climate protection measures cannot be countered with the argument that they cannot stop climate change. It is true that Germany alone would not be able to stop climate change. The isolated action of the Federal Republic of Germany is obviously not extensively causal for climate change and climate protection. Climate change can only be stopped if climate neutrality is achieved worldwide. In view of the global reduction requirement, Germany's share of global CO₂ emissions, which is just under 2% (cf. BMU, Klimaschutz in Zahlen, edition 2020, p. 12), is in itself rather small. However, if Germany's climate protection measures are integrated into global climate protection efforts, they are suitable as part of the overall effort to bring about the end of climate change (cf. Buser, DVBl 2020, 1389 <1394>; see also Dederer, in: Isensee/Kirchhof, HStR XI, 3rd ed. 2013, § 248 marginal no. 74).

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In this context, the state could also not evade its responsibility by referring to greenhouse gas emissions in other states (cf. VG Berlin, Judgment of 31 October 2019 - 10 K 412.18 -, para. 74; cf. also BVerwG, Judgment of 30 June 2005 - 7 C 26/04 -, para. 35 f.; High Court of New Zealand, Judgment of 2. November 2017, CIV 2015-485-919 [2017] NZHC 733, para. 133 f.; Gerechtshof Den Haag, Judgment of 9 October 2018, 200.178.245/01, para. 64; Hoge Raad der Nederlande, Judgment of 20 December 2019, 19/00135, para. 5.7.7; United States Court of Appeals for the Ninth Circuit, Judgment of 17 January 2020, No. 18-36082, p. 19 f.). From the speci

In fact, the constitutional necessity of actually taking one's own climate protection measures, preferably internationally agreed ones, follows from the fact that the state is dependent on the international community of states. Precisely because the state can only successfully implement the climate protection requirement imposed on it in Article 20a of the Basic Law through international cooperation, it must not create incentives for other states to undermine this cooperation. Through its own actions, it should also strengthen international confidence that climate protection, in particular the implementation of contractually agreed climate protection goals, can succeed under conditions worth living in, also with regard to fundamental freedoms. The practical solution of the global climate protection problem is thus largely dependent on mutual trust in the will of the others to implement it.

The Paris Agreement has made mutual trust a prerequisite for effectiveness in a special way. In Art. 2 para. 1 lit. a PA, the Parties have agreed on a climate protection target (well below 2 °C and preferably 1.5 °C), but without committing themselves to concrete reduction measures. In this respect, the Paris Agreement establishes a voluntary mechanism according to which the Parties themselves determine their measures to achieve the treaty's temperature target, but must make them transparent. The purpose of the transparency rules is to enable all states to have confidence and trust that the other states will act in accordance with the target (cf. Franzius, ZUR 2017, 515 <519>; Gärditz, ZUR 2018, 663 <668 et seq.>) and thus, for their part, have incentives to actually pursue the internationally agreed climate protection goals (cf. Frank, NVwZ 2016, 1599 f.; Gärditz, ZUR 2018, 663 <667 f.>; Buser, DVBI 2020, 1389 <1393>; cf. also Böh-
ringer, ZaöRV 2016, 753 <795>; Saurer, NVwZ 2017, 1574 <1575 f.>; Volland/Engel, NVwZ 2019, 1785 <1786>). The creation and maintenance of trust in the willingness of the Parties to comply is thus considered key to the effectiveness of the international climate protection agreement. The agreement relies precisely on the individual states making their own contribution. Constitutionally, this is significant insofar as the path to globally effective climate protection indicated by Article 20a of the Basic Law currently leads primarily via this agreement.

(3) The constitutional review of Article 3(1)(3) and Article 4(1)(3) KSG in conjunction with Annex 2 is not precluded by the fact that Article 20a GG does not provide a justiciable measure for the constitutional assessment of concrete greenhouse gas reduction targets, but that this is entirely in the hands of the legislature. Article 20a of the Basic Law is a justiciable legal norm. This also applies to the climate protection requirement contained therein. It is true that the concrete content of Article 20a of the Basic Law requires further concretisation. The wording of Article 20a of the Basic Law ("The state shall protect [...] the natural foundations of life [...] through legislation [...]") already points to the special importance of legislation, which has the prerogative to concretise (cf. Steinberg, NJW 1996, 1985 <1991>; Sparwasser/Engel/Voßkuhle, Umweltrecht, 5th ed. 2003, p. 50; Sommermann, in: v.Münch/Kunig, GG, 6th ed. 2012, Art. 20a marginal no. 37; Kloepfer, Umweltrecht, 4th ed. 2016, p. 127 et seq. marginal no. 45; Appel,

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in: Koch/Hofmann/Reese, Handbuch Umweltrecht, 5th ed. 2018, § 2 marginal no. 113; Wolff, in: Hömig/Wolff, Grundgesetz für die Bundesrepublik Deutschland, 12th ed. 2018, Art. 20a marginal no. 5; Kahl/Gärditz, Umweltrecht, 11th ed. 2019, p. 65 f.). However, Article 20a of the Basic Law is not a non-binding programme, but a legal norm that binds the legislator (cf. BVerfGE 118, 79 <110> - Emissions Trading; see also Waechter, NuR 1996, 321; Schulze-Fielitz, in: Dreier, GG, 3. Aufl. 2015, Art. 20a Rn. 67; Epiney, in: v.Man-goldt/Klein/Starck, GG, 7th ed. 2018, Art. 20a Rn. 43; Gärditz, in: Landmann/Rohmer, Umweltrecht, 93rd EL August 2020, Art. 20a GG Rn. 46; Huster/ Rux, in: GG BeckOK, 45th ed., 15 November 2020, Art. 20a marginal no. 30).

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This commitment must not be abandoned by leaving the concretisation of the protection mandate to be taken from Article 20a of the Basic Law to the legislature alone (cf. Epiney, in: v.Mangoldt/Klein/Starck, GG, 7th ed. 2018, Art. 20a marginal no. 58). For even if Article 20a of the Basic Law involves legislation in the concretisation of its substantive content, this is at the same time intended to counteract the political process. Here, the constitution limits the scope for political decision-making to take measures to protect the environment or not. In Article 20a of the Basic Law, environmental protection is made a matter for the constitution because a democratic political process is organised on a shorter term basis via electoral periods; however, structurally it runs the risk of reacting more sluggishly to ecological concerns that are to be pursued in the long term and because the future generations that are particularly affected today do not have their own voice in the political decision-making process. In view of these institutional conditions, Article 20a of the Basic Law imposes substantive obligations on democratic decision-making (cf. Steinberg, Der ökologische Verfassungsstaat, 1998, pp. 342, 431; Appel, Staatliche Zukunfts- und Entwicklungsvorsorge, 2005, p. 75; Eifert, in: KJ, Verfassungsrecht und gesellschaftliche Realität, 2009, p. 211 <216> m.w.). 211 <216> with further references; Kleiber, Der grundrechtliche Schutz künftiger Generationen, 2014, p. 5; Kube, in: Kahl <ed.>, Nachhaltigkeit durch Organisation und Verfahren, 2016, p. 137 et seq.; Gärditz, in: Landmann/Rohmer, Umweltrecht, 93rd EL August 2020, Art. 20a GG Rn. 13). The binding nature of the political process sought by Article 20a of the Basic Law would be in danger of being lost if the material content of Article 20a of the Basic Law were to be decided entirely in the day-to-day political process, which tends to be more short-term and oriented towards directly articulable interests.

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However, Article 20a of the Basic Law leaves the legislature considerable room for manoeuvre. In principle, it is also not the task of the courts to derive concrete quantifiable limits to global warming and thus corresponding emission quantities or reduction targets from the open wording of Article 20a of the Basic Law. Nevertheless, Article 20a of the Basic Law must not be allowed to run dry as a climate protection requirement. It remains the task of constitutional court review to ensure that the limits of Article 20a GG are observed (but cf. Wegener, ZRU 2019, 3 <10 ff.>). There is no indication that Article 20a of the Basic Law, unlike the other provisions of the Basic Law, would have a regulatory content whose interpretation and application would be beyond judicial review.

(4) In exercising its mandate and prerogative to concretise the law, the legislature has currently defined the climate protection goal of Article 20a of the Basic Law through

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Article 1 sentence 3 of the KSG stipulates that the increase in the global average temperature must be limited to well below 2 °C and, if possible, to 1.5 °C above the pre-industrial level. The legislative leeway of Article 20a of the Basic Law is thus not currently exceeded. The temperature threshold of section 1 sentence 3 of the KSG is to be used as the constitutionally relevant concretisation of the constitutional review.

(a) The temperature threshold specified in section 1 sentence 3 KSG is to be regarded as a constitutionally decisive concretisation of the climate protection objective of the Basic Law.

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Section 1 KSG defines the purpose of the Climate Protection Act. It states (emphasis added in sentence 3):

The purpose of this Act is to ensure the fulfilment of national climate protection targets and compliance with European targets in order to protect against the effects of global climate change. The ecological, social and economic consequences are taken into account. **The basis for this is the obligation under the Paris Agreement based on the United Nations Framework Convention on Climate Change, according to which the increase in the average global temperature must be limited to well below 2 degrees Celsius and, if possible, to 1.5 degrees Celsius above the pre-industrial level in order** to keep the effects of global climate change as low as possible, as well as the commitment of the Federal Republic of Germany at the United Nations Climate Summit on 23 September 2019 in New York to pursue greenhouse gas neutrality by 2050 as a long-term goal.

Section 1 sentence 3 of the KSG refers to the obligation under the Paris Agreement as the *basis*. The law itself wants the temperature threshold to be understood as the fundamental orientation of climate protection. There is no other, similarly fundamental target definition in German climate protection law. The selected temperature threshold is not only an expression of the current political will, but is also to be understood as a concretisation of the climate protection goal required by constitutional law. This is supported above all by the fact that the climate protection target specified in section 1 sentence 3 of the Climate Protection Act is the internationally agreed temperature threshold of Article 2(1)(a) of the PA, which the legislature has deliberately and expressly taken as a basis. In its constitutional significance, this goes beyond the German legislature's consent to the Paris Agreement given by treaty law. The fact that the Paris target is designated as the basis of the German Climate Protection Act is particularly related to the climate protection requirement of Article 20a of the Basic Law. Because of the genuinely global dimension of climate change, the state can only pursue the goal of climate protection.

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Article 20a of the Basic Law to halt climate change can ultimately only be achieved in international cooperation. To this end, it has taken action by acceding to the Paris Agreement, within the framework of which it now also fulfils its more far-reaching climate protection obligations under Article 20a of the Basic Law (above marginal no. 201). By establishing the temperature threshold of Article 2 (1) (a) PA, the legislature has determined the fundamental orientation of national climate protection law precisely in such a way that the German state has the opportunity to effectively fulfil its constitutional mandate to protect the climate internationally through its own efforts.

(b) However, the legislature is not completely free in concretising the climate protection requirement of Article 20a of the Basic Law. However, with the temperature target chosen in the Paris Agreement and specifically again in the Climate Protection Act, the scope for concretisation left by Article 20a of the Basic Law is currently respected. The selected climate protection target is covered by the legislature's prerogative to concretise as laid down in Article 20a of the Basic Law. The Paris Agreement was adopted in December 2015 on the basis of scientific findings compiled in preparation for the Paris Climate Conference (UNFCCC, Report on the structured expert dialogue 2013-2015 review, 2015, p. 18 Message 5, p. 31 marginal no. 108). It is true that, in the opinion of the complainants, warming must be further limited to a maximum of 1.5 °C. This is in line with widespread estimates and is supported in particular by the IPCC Special Report of 2018. This is a widely held view and is supported in particular by the IPCC Special Report on the Consequences of Global Warming of 1.5 °C of 2018. Of concern is the Special Report's assessment that climate-related risks to natural and human systems, especially the likelihood of tipping points being exceeded, are higher with 2°C warming than with 1.5°C warming (para. 161 above). However, because of the considerable uncertainty documented in the ranges and uncertainties indicated by the IPCC, Article 20a of the Basic Law - like the duties to protect under fundamental rights (supra para. 162 f.) - also allows the legislature leeway in determining the climate protection target to assess the dangers and risks in a politically responsible manner (cf. BVerfGE 128, 1 <39>). That the limits of this legislative leeway are violated by the choice of the Paris target is at any rate not discernible at present.

However, new and sufficiently reliable findings on the development of anthropogenic global warming or its consequences and its controllability could make it necessary to set a different target within the framework of Article 20a of the Basic Law, even taking into account the legislature's scope for decision-making. This is subject to constitutional court review. Article 20a of the Basic Law imposes a permanent duty on the legislature to adapt environmental law to the latest developments and findings in science (cf. BVerfGE 49, 89 <130, 132> on Article 1.1 sentence 1 of the Basic Law). Should the temperature target agreed in Art. 2 para. 1 lit. a PA prove to be inadequate to achieve sufficient climate protection, the obligation under Art. 20a GG to find a solution to the climate protection problem is also updated.

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problem at the international level; in particular, attempts would have to be made to reach stricter agreements. On the other hand, a reorientation towards weaker climate protection goals would have to be justifiable in the context of Article 20a of the Basic Law because of the associated ecological regression (cf. generally Schulze-Fielitz, in: Dreier, GG, 3rd ed. 2015, Art. 20a marginal no. 71; Kluth, in: Friauf/Höfling, Berliner Kommentar zum Grundgesetz, 51. EL 2016, Art. 20a marginal no. 106; see also Art. 4 para. 3 PA, § 3 para. 3 sentence 2 KSG), unless more recent and sufficiently reliable findings in climate research show that global warming has less damaging potential than is currently to be feared.

(c) As a constitutionally necessary, fundamental concretisation of Art. 20a of the Basic Law, the temperature requirement on which climate protection in Section 1 sentence 3 of the Climate Protection Act is based in turn has a constitutional orientation function. It also constitutes the decisive concretisation of the climate protection mandate contained in Article 20a of the Basic Law for constitutional review (cf. on the statutory concretisation of Article 20a of the Basic Law on animal protection BVerfGE 127, 293 <328 f.>). Measuring the challenged provisions on the permissible emission quantities against this is not excluded because the legislature could have just redefined the fundamental climate protection objective with these provisions. It is true that it could change the relevant climate protection target in a renewed concretisation of the constitutional climate protection mandate. However, not every new provision that is incompatible with the provision concretising the constitutional climate protection objective so far is itself to be regarded as an updated concretisation of the constitutional protection mandate by the legislature. If the legislator wanted to give climate protection law a fundamental reorientation, this would have to be recognisable as such and thus also discussable for the political public. The background to the explicit emphasis on legislation in Article 20a of the Basic Law and the recognition of the legislature's prerogative to concretise the law is precisely that the special significance of the protected interests of Article 20a of the Basic Law and the way they are defined are of particular importance to the legislature. 20a GG and their tension with any conflicting interests must be balanced in democratic responsibility and legislation offers the appropriate framework for this (cf. Steinberg, NJW 1996, 1985 <1991 f.>; Murswiek, in: Sachs, GG, 8th ed. 2018, Art. 20a marginal no. 57, 60; Scholz, in: Maunz/Dürig, GG, 91st ed. April 2020, Art. 20a marginal no. 47). The legislative procedure provides the necessary legitimacy for the required balance of interests. The parliamentary procedure, with its inherent public function and the fundamentally public deliberations, makes it possible, through its transparency and the participation of the parliamentary opposition, that decisions are also discussed in the broader public and thus the conditions for control of the legislation by the citizens are created. This procedure offers the public, also through the reporting by the media, the opportunity to form and represent its own views (cf. BVerfGE 143, 246 <344 marginal no. 274> with further references; 150, 1 <96 et seq. marginal no. 192> with further references). However, are precisely this transparency and publicity function of the legislative procedure the reason that Art. 20a

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GG assigns outstanding importance to concretisation through legislation, a reorientation of the fundamental target definition of climate protection law would also have to take place in such a public and transparent manner. As long as the legislator does not re-determine the fundamental climate protection goal in a recognisable and transparent manner, it must allow itself to be held to its own concretisation of the constitutional goal.

bb) Measured against the goal of limiting global warming to well below 2 °C and, if possible, to 1.5 °C, it cannot currently be established that § 3 para. 1 sentence 2 and § 4 para. 1 sentence 3 KSG in conjunction with Annex 2 violate the climate protection requirement of Article 20a of the Basic Law. 214

(1) However, the constitutionality of the emission levels stipulated in § 3 para. 1 sentence 2 and § 4 para. 1 sentence 3 KSG in conjunction with Annex 2 cannot be directly reviewed against the constitutionally relevant temperature target. In order to be able to apply this as a measure for limiting CO₂ emissions, a translation of the temperature target into an emission target is required. Such a translation is provided by the IPCC budget approach (a), despite the difficulties of exact quantification. However, the more detailed determination of a national residual budget based on this (b) is associated with considerable uncertainties and requires evaluations. Therefore, the legislator has room for manoeuvre in making decisions, which it may not fill out at its political discretion. If reliable data indicate that the constitutionally relevant temperature threshold could be exceeded, this must be taken into account - even if not as a numerical measure (c). 215

(a) The temperature threshold of well below 2 °C and preferably 1.5 °C can in principle be converted into a corresponding global CO₂ emission quantity, which can then be distributed among the states. As we have seen, there is an approximately linear relationship between the total quantity of anthropogenic CO₂ emissions accumulated over all times and the global temperature increase (see above, para. 32), which permits such a conversion. To do this, the first step is to determine the global emission volume that remains if the concrete temperature threshold is to be maintained - this is the concrete global CO₂ residual budget. In a second step, it must be determined how large Germany's share of this is - this is the concrete national CO₂ residual budget. The IPCC has named specific global CO₂ residual budgets for various temperature thresholds and various probabilities of occurrence; the Council of Experts has determined a national residual budget for Germany on this basis. The compatibility of the emission quantities permitted in Article 3 para. 1 sentence 2 and Article 4 para. 1 sentence 3 KSG with the temperature threshold can be measured on this basis. 216

It is true that the federal government has stated in this procedure that it does not expect national CO₂ budgets. The principle informative value of the budget approach has 217

but it does not contradict them. The German government states that the CO2 budget could change with the state of further scientific knowledge. However, this does not recognizably go beyond the uncertainty stated in the IPCC report itself (para. 222 below). The fact that, as the German government goes on to say, clear greenhouse gas reduction targets are needed for multilateral cooperation and that these are therefore at the centre of global European and German climate protection policy, does not constitute a thorough-going objection to the approach of the IPCC and the Council of Experts based on the global residual budget. This is because greenhouse gas reduction targets do not replace this approach, but presuppose it. Emission reduction targets cannot translate the temperature target related to limiting global warming into climate protection targets if these reduction targets are not in turn aligned with a total emission quantity corresponding to the targeted temperature threshold; in themselves they are not meaningful (see SRU, *Für eine entschlossene Umweltpolitik in Deutschland und Europa*, Umweltgutachten 2020, p. 42 et seq. para. 12). The temperature target can be translated into reduction targets. However, in an intermediate step, an emission quantity corresponding to the targeted temperature threshold must also be taken into account. This total amount of emissions can then be represented by reduction targets by distributing it along a reduction path leading to climate neutrality.

However, the legislator is not prevented from formulating reduction targets without developing an idea of the total amount of emissions still available from the outset. However, because of the irreversibility of the processes initiated, it then runs the risk that the temperature threshold will be exceeded. Theoretically, policy-makers may even permanently abandon the idea of a total emission quantity when formulating their reduction targets and endeavour to comply with the set temperature threshold on a *trial-and-error* basis. In this way, however, no specific temperature level could be targeted, because the irreversible effects of CO2 emissions on the climate allow only limited corrections of the chosen path. Ultimately, this would mean pursuing climate protection in the dark. However, this is not the goal of the German government. Rather, the German government states here that the budget approach is suitable as a plausibility check to verify whether the sum of the contributions to be determined nationally according to the Paris Agreement is globally sufficient to achieve the goals of the Paris Agreement; the national contributions must be measured against this yardstick in the global negotiation process. The fact that the budget approach is fundamentally suitable for translating the temperature benchmark is therefore not disputed (on the reception also the Hoge Raad of the Netherlands, judgment of 20 December 2019, 19/00135, para. 2.1, 7th indent, paras. 4.6, 7.4.3; Irish Supreme Court, judgment of 31 July 2020, 205/19, para. 4.3). The Federal Government's objection rather concerns the uncertainties regarding the size of the global residual budget and a national budget (below para. 220 et seq.).

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(b) The IPCC has quantified the size of the corresponding global CO₂ residual budget for different temperature thresholds and probabilities of meeting these thresholds. For example, for a 67% probability of limiting global warming to 1.5 °C, it has estimated a global CO₂ residual budget of 420 gigatonnes from 2018, and for a 2 °C target, a residual budget of 1,170 gigatonnes from 2018 (IPCC, Special Report, Global Warming of 1.5 °C, 2018, Chapter 2, p. 108, Tab. 2.2). On the basis of the IPCC figures, the German Council of Economic Experts has calculated a concrete national residual budget of 6.7 gigatonnes from 2020 for the target of limiting the rise in mean global temperature to 1.75 °C with a probability of 67% (SRU, Für eine entschlossenene Umweltpolitik in Deutschland und Europa, Umweltgutachten 2020, p. 52, 88 para. 111).

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(c) The budget determination of the Council of Experts is based on a comprehensible set of figures and conclusive calculation steps (cf. in principle BVerfGE 125, 175 <226>; 137, 34 <75 marginal no. 82>) and is based on scientifically justified assumptions of the IPCC, which were obtained in a quality assurance procedure. However, it contains considerable uncertainties with regard to the size of the global (aa) and the national (bb) residual budget and therefore does not legally permit any numerically accurate conclusion. The uncertainties go in both directions; in fact, the residual budget could also be smaller than assumed by the Council of Experts (cc). Indications of irreversible impairments based on the estimates of the IPCC Special Report are to be taken into account here even if they do not represent comprehensively confirmed scientific knowledge (dd).

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(aa) The Council of Experts first bases its calculation on the IPCC's data on the *global* CO₂ residual budget. These are basically reliable data. The IPCC estimates are the concrete result of a quality assurance procedure. The IPCC formulated its estimate on the basis of an extensive evaluation of the state of research by scientists and by disclosing the remaining uncertainty (see above para. 16 f.).

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The IPCC itself points to considerable uncertainties. It is true that the total amount of anthropogenic emissions of the most important greenhouse gas CO₂ and the global temperature increase can in principle be converted into each other. However, due to the complexity of the climate system, the assessment of the strength of the connection between cumulative emissions and warming is associated with uncertainties. Uncertainties exist regarding the climate response to greenhouse gas emissions and are quantified by the IPCC for the global budget with possible deviations in both directions of 400 gigatonnes of CO₂; uncertainties regarding the actual degree of historical warming could account for a deviation of 250 gigatonnes of CO₂ in both directions; a potential additional release of CO₂ due to future thawing of the atmosphere could account for a deviation of 250 gigatonnes of CO₂ in both directions.

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of permafrost and methane release from wetlands would further reduce the budget by up to 100 gigatonnes of CO₂; furthermore, the extent of future mitigation of greenhouse gases other than CO₂ could change the remaining CO₂ budget in both directions by 250 gigatonnes of CO₂; it is also unclear to what extent CO₂ extractions from the atmosphere (so-called negative emissions) could become possible in the future (on all this IPCC, Special Report, 1.5 °C Global Warming, Summary for Policymakers, 2018, p. 16 et seq. 16 f.; see also SRU, Für eine entschlossenene Umweltpolitik in Deutschland und Europa, Umweltgutachten 2020, p. 44 f. para. 16 ff.). If one compares these deviations, which are considered possible, with the fact that the IPCC estimates a global CO₂ residual budget of 420 gigatonnes for a 67% probability of achieving the target of limiting global warming to 1.5 °C from 2018 and a residual budget of 1,170 gigatonnes for a 2 °C target from 2018, these uncertainties are considerable.

More precise, similarly reliable data as the estimates of this IPCC special report are not available. There is no apparent reason to doubt the IPCC's estimate beyond the stated uncertainties. The complainants do see indications that the IPCC's estimate is too generous. However, they do not doubt that it is a reliable representation of the current state of knowledge. Nor does the German government. It only considers the uncertainties to be too great for anything to be concluded from this estimate.

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(bb) The further derivations of the Council of Experts on the *national* residual budget are based on comprehensible assumptions and conclusive calculation steps. However, they contain valuations and uncertainties of their own.

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Thus, various allocation criteria can be considered for determining the national share of the global CO₂ residual budget. For its recommendations, the German Council of Economic Experts has chosen the approach of a per capita emission right, i.e. an allocation according to the current population size and accordingly uses the share of the German population in the total world population of 1.1% in 2016 as a basis (SRU, Für eine entschlossenene Umweltpolitik in Deutschland und Europa, Umweltgutachten 2020, p. 51). Other distribution keys are conceivable (SRU, loc. cit., p. 48; Winter, ZUR 2019, 259 <263 f.>). However, Article 20a of the Basic Law does not provide a precise distribution key. In particular, Article 20a of the Basic Law does not specify which share of the burden would be appropriate for Germany for reasons of justice. This does not mean, however, that the contribution to be made by Germany could be chosen arbitrarily on constitutional grounds. Nor can a concrete constitutional obligation to reduce CO₂ emissions simply be countered with the argument that Germany's share of the reduction burden and of the global CO₂ budget cannot be determined. Because Article 20a of the Basic Law also obliges Germany to fulfil the climate protection goal in international cooperation, the German contribution to be made to this end must be determined in a way that promotes mutual trust between the contracting parties in the will to realise it,

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but does not create incentives to undermine them (supra para. 203). Points of reference for distribution under international law arise, for example, from Art. 2 para. 2, Art. 4 para. 4 PA (cf. on the principle of common but differentiated responsibility, Art. 2 para. 2 PA).

<"common but differentiated responsibilities"> also Art. 3 No. 1 and 4 of the United Nations Framework Convention on Climate Change of 9 May 1992

<Framework Convention on Climate Change, BGBl II 1993 p. 1784, UNTS Vol. 1771, p. 107, entered into force 21 May 1994> as well as in the 3rd recital of the preamble to the Paris Convention).

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Furthermore, the Paris Agreement provides for the possibility of practically expanding the national residual budget by transferring voluntary emission reductions from other Parties to the Convention (Art. 6 para. 2 and para. 4 PA). However, it has not yet been possible to establish a reliable crediting system for internationally tradable emission reductions (cf. BTDrucks 19/15906, p. 1 ff.). It is currently not foreseeable whether such a transfer and crediting system could be used to expand the national budget on a large scale in the future. In view of the very high reduction burdens that the community of states as a whole will still have to meet in order to achieve the temperature target of the Paris Agreement (cf. UNFCCC, Nationally determined contributions under the Paris Agreement, Synthesis report by the secretariat, 2021, p. 5, para. 13), the competition for transferable voluntary reductions is likely to be intense.

An expansion of the national residual budget through so-called negative-emission technologies is also a possibility (cf. for example the Carbon Dioxide Storage Act of 17 April 2012 <BGBl I p. 1726>). However, the extent to which negative emission technologies will be used on a large scale beyond individual applications is not yet foreseeable today in view of ecological, technical, economic, political and social concerns - notwithstanding the constitutional issues that could be raised by this (para. 33 above).

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(cc) The fact that the calculation of the Council of Experts contains uncertainties and valuations does not, however, indicate that there are actually more emission possibilities remaining. The uncertainties in the determination of the global residual budget and its distribution among the states go in both directions and could therefore also have led to an overly generous estimate. Overall, it cannot be ruled out that Germany might actually have a larger residual budget. However, it seems equally possible that the remaining budget is even smaller.

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(dd) Although the concrete quantification of the residual budget by the Council of Experts contains not inconsiderable uncertainties, the statutory reduction requirements must take it into account. Because uncertainties remain in the exact quantification of the correlation between CO₂ emissions and global warming, Article 20a of the Basic Law does leave the legislature room for manoeuvre (cf.

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BVerfGE 128, 1 <39>; see also on fundamental rights BVerfGE 49, 89 <131 f.>; 83, 130 <141 f.>). The size of the emission quantity remaining to maintain the temperature threshold cannot currently be determined so precisely that the budget size indicated by the Council of Experts could provide a numerically accurate measure for constitutional review. However, the legislator may not use its leeway to do as it pleases. If there is scientific uncertainty about environmentally relevant causal relationships, Article 20a of the Basic Law rather sets limits to the legislature's decisions - especially those with irreversible consequences for the environment - and imposes a special duty of care on it, also in responsibility for future generations (cf. also BVerfGE 128, 1 <37>; Epiney, in: v.Mangoldt/Klein/ Starck, GG, 7th ed. 2018, Art. 20a marginal no. 71; see also Steinberg, Der ökologische Verfassungsstaat, 1998, p. 101 f.; Cal- liess, Rechtsstaat und Umweltstaat, 2001, pp. 121 ff; Wolf, in: AK-GG, 3rd ed. 2001, Art. 20a marginal no. 32; Murswiek, in: Sachs, GG, 8th ed. 2018, Art. 20a marginal no. 50; Huster/ Rux, in: BeckOK GG, 45th ed. 15 November 2020, Art. 20a marginal no. 22). In any case, it is an expression of this special duty of care that the legislature must already take into account reliable indications of the possibility of serious or irreversible impairments - in each case in view of their resilience. According to Art. 3 No. 3 Sentence 2 of the Framework Convention on Climate Change, the lack of complete scientific certainty should not serve as a reason for postponing precautionary measures if

"serious or irreparable" damage is imminent. With regard to the danger of irreversible climate change, the law must therefore also take into account the estimates of the IPCC on the size of the remaining global CO₂ residual budget and the consequences for remaining national emission amounts, which have emerged from a quality assurance procedure, if they indicate the possibility of exceeding the constitutionally relevant temperature threshold.

(2) Sections 3(1) sentence 2 and 4(1) sentence 3 KSG in conjunction with Annex 2 still do justice to this. Taking into account the legislator's leeway, the constitutional court cannot currently find that these provisions violate the constitutional climate protection requirement under Article 20a of the Basic Law.

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(a) However, it does not seem certain that the remaining residual budget can be met with the regulations that have been made. If one takes 6.7 gigatonnes as the basis for the concrete national CO₂ residual budget remaining from 2020, as determined by the Council of Experts for the goal of limiting the increase in mean Earth temperature to 1.75 °C with a probability of 67% (SRU, Für eine entschlossene Umweltpolitik in Deutschland und Europa, Umweltgutachten 2020, p. 52, 88, para. 111), this residual budget would not be exceeded by the provisions of Section 4 para. 52, 88, marginal no. 111), this residual budget would already be largely used up by 2030 by the CO₂ quantities permitted in Article 4 para. 1 sentence 3 KSG in conjunction with Annex 2.

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The emission quantities given in Annex 2 to § 4 KSG for years and sectors result (with a certain degree of uncertainty due to the not continuous

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emissions of the energy industry) total approximately 7 gigatonnes. This figure, however, refers to so-called CO₂ equivalents, i.e. includes not only CO₂ emissions but also other greenhouse gases (cf. § 2 No. 2 KSG), which, however, are not taken into account in the calculation of the residual budget by the IPCC and the Council of Experts due to their deviating properties, in particular their short-livedness. In Germany, the share of CO₂ emissions in greenhouse gas emissions is currently about 88% (SRU, op. cit., p. 40). Accordingly, the greenhouse gas emissions listed in Annex 2 will contain a good 6 gigatonnes of CO₂ emissions, totalling approximately 7 gigatonnes of CO₂ equivalents.

After 2030, less than 1 gigatonne of the residual CO₂ budget of 6.7 gigatonnes calculated by the Council of Experts would remain. Annex 2 to § 4 of the Climate Change Act does not yet include the additional CO₂ emissions from land use, land use change and forestry and the emissions from international aviation and maritime transport attributable to Germany (cf. BTDrucks 19/14337, p. 26 f.), which further reduce the remaining budget.

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In order to comply with the budget limits, climate neutrality would have to be realised soon after 2030. However, it is not likely that this could be achieved. According to the reduction path provided for in the Climate Protection Act, the emission level in 2030 is to be reduced by 55% compared to 1990 (§ 3 para. 1 sentence 2 KSG). However, the emission level is still far from climate neutral. Realistically, the conversion to climate neutrality will then, apart from obstacles to freedom, still take some time for technical reasons alone. A residual budget of 6.7 gigatonnes of CO₂ emissions would probably be exceeded. If, however, the national residual budget were determined on the basis of a somewhat more generous temperature target of between 1.75 °C and 2 °C, compliance with the national residual budget determined according to the Council of Experts' method would not appear impossible. In this context, the longer the budget remaining after 2030 is sufficient, the more the annual emissions are continuously reduced after 2030.

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However, by basing the national residual budget on 1.75 °C as the temperature threshold, the Council of Experts has not been overly strict. The legal requirement is to limit warming to well below 2 °C and, if possible, to 1.5 °C. Accordingly, a limit of 1.75 °C is within the range of what is legally permissible, but does not realise the effort given up to limit the temperature increase to 1.5 °C (cf. also Art. 2 para. 1 lit. a PA). This applies all the more to a higher threshold between 1.75 °C and 2 °C.

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(b) As a result, it cannot be determined at present that the legislature has exceeded its constitutional scope for decision-making. There is no need for a constitutional court to find that the emission levels set out in § 3 para. 1 sentence 2 and § 4 para. 1 sentence 3 of the KSG in conjunction with Annex 2 up to 2030 do not violate the

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– The current uncertainty regarding the size of the global CO₂ residual budget, which is reflected in the calculation of the national residual budget in addition to its own uncertainties regarding the size of the national residual budget, is opposed to the idea that the CO₂ budget, which is also constitutionally limited by Article 20a of the Basic Law, would be overdrawn. The residual budget of 6.7 gigatonnes determined by the Council of Experts on the basis of the IPCC estimates for maintaining a 1.75 °C temperature threshold would be almost exhausted by the emission volumes regulated in Annex 2 by the year 2030 (para. 231 ff. above). However, the uncertainty about the remaining emission possibilities to maintain the temperature threshold globally and nationally is currently too great for the budget size determined by the Council of Experts to provide a numerically accurate measure for constitutional court review.

The IPCC's estimates of the size of the remaining global CO₂ budget and the reference to the danger of exceeding the constitutionally relevant temperature threshold that can be inferred from them must nevertheless be taken into account (para. 229 above). However, it cannot be established at present that the legislature has violated this duty of care with § 3 para. 1 sentence 2 and § 4 para. 1 sentence 3 KSG in conjunction with Annex 2. The residual budget of 6.7 gigatonnes calculated by the Council of Experts on the basis of the IPCC estimates to maintain a 1.75 °C temperature threshold would be largely used up by the emission levels regulated in Annex 2 by 2030, but in itself would probably not be excessive. Compared to the uncertainties currently contained in the calculation of the residual budget, such a degree of overshoot would not suffice for a constitutional court objection. In view of the normative range of the temperature benchmark "well below 2 °C and as close to 1.5 °C as possible", it is also significant that the Council of Experts did not calculate the national budget of 6.7 gigatonnes - as the complainants in the proceedings 1 BvR 78/20 and 1 BvR 96/20 assume - for a 2 °C threshold, but for the stricter 1.75 °C threshold.

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cc) Some of the constitutional complaints point to the fact that, according to various studies, the climate protection instruments currently used in Germany are not sufficient to comply with the reduction quota of 55% for the target year 2030 compared to the year 1990, as stipulated in section 3(1) sentence 2 of the Climate Protection Act (see recital 169 et seq. above). However, a violation of § 3 para. 1 sentence 3 KSG did not in itself constitute a constitutional violation. Section 3 para. 1 sentence 3 of the Climate Protection Act is not a standardised concretisation of the climate protection mandate from Article 20a of the Basic Law, because it does not, like Section 1 sentence 3 of the Climate Protection Act, specify the legislature's climate protection goal in its entirety (see above marginal no. 209). Apart from this, it cannot be ruled out from the outset that the specific national climate protection instruments will be further developed in such a way that the reduction target set for 2030 is met by compensating for reduction deficits within this period. Section 4 para. 3 sentence 1 KSG provides for a catch-up obligation within the annual periods until 2030, if necessary.

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dd) The legislature has not violated rationality requirements for legislation. Article 20a of the Basic Law does not, at least for the situation to be decided here, establish an independent obligation to clarify the facts and to state reasons that is detached from its substantive requirements.

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(1) An independent duty to clarify the facts, independent of the requirements for the substantive constitutionality of the law, does not generally follow from the Basic Law. The Federal Constitutional Court has so far only assumed an independent obligation of the legislature to clarify the facts in certain special constellations. Otherwise, the principle applies that the shaping of the legislative procedure within the framework of the rules laid down by the Constitution is a matter for the legislative bodies. Moreover, the parliamentary procedure, with its inherent public function and the consequently fundamentally public deliberations, makes it possible, precisely through its transparency, that decisions are also discussed in the broader public and thus the preconditions for control of legislation by the citizens are created. For this reason alone, decisions of considerable significance are always preceded by a procedure which offers the public sufficient opportunity, also through reporting by the media, to form and represent opinions, and which encourages the people's representatives to clarify the necessity and scope of the measures to be adopted in public debate. The Basic Law thus relies on the fact that transparency and public discourse in the parliamentary procedure provide sufficient guarantee for a sufficient factual basis of the legislative decision, even without a separate obligation to clarify the facts. For the absence of an independent obligation to clarify the facts in the legislative procedure does not release the legislature from the necessity to take its decisions in accordance with the constitutional requirements, in particular the fundamental rights, and to base them in this respect - for instance with regard to the requirements of proportionality - on sufficiently well-founded knowledge of facts and interrelationships (BVerfGE 143, 246 <343 et seq., marginal no. 273 et seq.> with further references).

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(2) In this case, Article 20a of the Basic Law does not imply the legislature's obligation to state reasons as asserted by the complainants (cf. however Schulze-Fielitz, in: Dreier, GG, 3rd ed. 2015, Art. 20a marginal no. 73 with further references; Kluth, in: Friauf/Höfler, Berliner Kommentar, 51st EL 2016, Art. 20a marginal no. 107; specifically on climate protection Winter, 2019 <2659>. Kluth, in: Friauf/Höfling, Berliner Kommentar zum Grundgesetz, 51st ed. 2016, Art. 20a marginal no. 107; specifically on climate protection Winter, ZUR 2019, 259 <265>; cautiously, however, Groß, ZUR 2009, 364 <367>). According to the consistent case-law of the Senate, the Constitution does not prescribe what, how and when exactly must be justified in the legislative procedure, but leaves room for negotiations and for political compromise (cf. BVerfGE 137, 34 <73 f. marginal no. 77> with further references). The constitutional requirements for the constitutionality of a statute do not fundamentally relate to its justification, but to the results of a legislative procedure (BVerfGE 139, 148 <180 marginal no. 61>; cf. also BVerfGE 140, 65 <80

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marginal no. 33>; 143, 246 <345 f. marginal no. 279>). Here, too, it is decisive that the compatibility of the legally regulated emission amounts with Article 20a of the Basic Law can be conclusively justified (cf. accordingly on the minimum subsistence level in human dignity BVerfGE 137, 34 <73 marginal no. 77>).

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ee) However, the legislature is still required to endeavour to limit the temperature increase to 1.5 °C, as far as possible, as stated in Article 20a of the Basic Law (section 1 sentence 3 of the Climate Protection Act). There are indications that the reduction quota of 55% specified in section 3, paragraph 1, sentence 2 of the Climate Protection Act for the target year 2030 was not geared to the goal of limiting global warming to well below 2°C, if possible to 1.5°C. The genesis of this value indicates that the goal of limiting global warming to 1.5°C was not achieved. Rather, the genesis of this value indicates that the reduction target was originally oriented towards a temperature threshold of 2 °C (para. 166 above). This is consistent with the fact that with the total emission quantity provided for in Section 4 para. 1 sentence 3 of the Climate Protection Act in conjunction with Annex 2, the residual budget determined by the Council of Experts on the basis of the IPCC estimates for the 1.75 °C target could only be met with extreme difficulty, but that compliance with a corresponding residual budget determined for the 2 °C target would appear possible.

b) Section 3(1) sentence 2 KSG and Section 4(1) sentence 3 KSG in conjunction with Annex 2 are unconstitutional to the extent that they give rise to the currently insufficiently contained risk of future impairments of fundamental rights; they thus violate the legislature's duty, arising from the requirement of proportionality, to distribute the reductions of CO₂ emissions required under Article 20a of the Basic Law over time in a manner that is proactive and does not infringe fundamental rights. 20a of the Basic Law to distribute the reductions in CO₂ emissions required under constitutional law over time in a manner that protects fundamental rights (on the requirements, see recital 192 et seq. above).

aa) The emission quantities provided for in § 3 para. 1 sentence 2 and § 4 para. 1 sentence 3 KSG in conjunction with Annex 2 until the year 2030 considerably reduce the emission possibilities that remain for subsequent periods in accordance with the temperature threshold of clearly below 2 °C, if possible 1.5 °C, which substantiates the climate protection requirement of Article 20a of the Basic Law. This can only be justified in view of the preliminary effect relevant to fundamental rights if, in order to ensure a transition to climate neutrality that continues to protect freedom, sufficient precautions are taken to alleviate the burden of reduction that will fall on the complainants from 2031 onwards and to contain the associated threat to fundamental rights (1). The creation of a planning horizon that promotes development is required (2). This places concrete demands on the further design of the reduction path (3).

(1) The greenhouse gas reduction burden required by Article 20a of the Basic Law after 2030 will be considerable. Whether it will be so drastic that it would necessarily be associated with unreasonable impairments of fundamental rights from today's perspective (a) cannot be determined. However, the risk of serious burdens is high. Because of the obligation to avoid the risk of significant impairments of fundamental

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In order to curb the impact of climate change on fundamental rights, as well as due to the general obligation to treat fundamental rights with care, the emission levels provided for in § 3 para. 1 sentence 2 and § 4 para. 1 sentence 3 of the KSG in conjunction with Annex 2 until 2030 can only be reconciled with the fundamental rights of freedom that will be affected in the future, if this is combined with precautions for coping with the reduction burden threatening after 2030 in a manner that does not infringe fundamental rights (b).

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(a) According to the constitutional requirement to keep global warming well below 2 °C and if possible 1.5 °C, the amount of CO₂ emissions that may still enter the earth's atmosphere in accordance with the constitutional climate protection requirement is limited. According to Article 3 para. 1 sentence 2 and Article 4 para. 1 sentence 3 KSG in conjunction with Annex 2, a share of the remaining emission possibilities attributable to Germany will be consumed, at least to a not inconsiderable extent, regardless of the exact size of the remaining budget. According to the calculation of the Council of Experts, if a temperature threshold of 1.75 °C is pursued with a 67% probability of achieving the target after 2030, at most a minimal residual emission potential remains, which, in view of the emission level still to be expected for 2031, would hardly suffice for another year (para. 231 et seq. above). In order to strictly maintain the emission framework set by Article 20a of the Basic Law, reduction efforts of an unreasonable extent would be necessary from today's point of view, especially since the general way of life will probably still be characterised by a high CO₂ intensity in 2031 and the annual amount of emissions will only have been reduced by 55% compared to 1990 (cf. § 3 para 1 sentence 2 KSG). Even if it is taken into account that Article 20a of the Basic Law does not stipulate an absolute priority of climate protection (para. 198 above), which would necessarily have to prevail in relation to conflicting fundamental rights or other elementary constitutional rights or principles, the constitutional requirement to protect the climate - reinforced by fundamental rights obligations to protect under Article 2 para. 2 sentence 1 and Article 14 para. 1 of the Basic Law - would still not be able to be enforced.

– require the acceptance of considerable restrictions on freedom that would hardly be reasonable from today's perspective.

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(b) However, it is not possible to determine exactly how much emission potential remains to meet the Paris target after 2030, because the national residual budget cannot be quantified precisely under constitutional law due to remaining uncertainties and evaluation requirements (recital 224 et seq. above). If the national residual budget were several gigatonnes larger than the calculations of the Council of Experts indicate, the challenged provisions would still allow for a transition to climate neutrality in accordance with Article 20a of the Basic Law. However, it would have to be initiated in good time. However, it is far from certain that the remaining budget will be larger than the Council of Experts estimates; it could even be smaller (para. 228 above). Under these circumstances, the legislature must, both because of the general obligation to treat fundamental rights with care and because of the obligation to contain the danger of significant violations of fundamental rights, take the necessary measures.

(above para. 194), take precautions to cope with the reduction burden threatening after 2030 in a way that does not violate fundamental rights.

(2) In practice, the protection of future freedom requires that the transition to climate neutrality be initiated in good time. In all areas of life - such as production, services, infrastructure, administration, culture and consumption, ultimately with regard to all processes that are still CO₂-relevant today - developments must begin that make it possible to make meaningful use of fundamental freedom in the future, then on the basis of CO₂-free behavioural alternatives. However, the state would neither be in a position nor is it solely its task to provide all technological and social developments for the replacement and avoidance of greenhouse gas-intensive processes and products and the expansion of the necessary infrastructures. It would hardly be possible for the legislator to prescribe the necessary developments in concrete terms. However, it is constitutionally obliged to create basic conditions and incentives for these developments to take place (cf. on Article 20a of the Basic Law BVerfGE 118, 79 <110 f.>; see also Eifert, in: Kahl <ed.>, *Nachhaltigkeit durch Organisa- tion und Verfahren*, 2016, p. 371 <381 ff.> with further references; Hermes, DV 53 <2020>, 311 <319> with further references).

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In this respect, too, the legislator has room for manoeuvre. The Basic Law does not specify in detail what is to be regulated in order to create conditions and incentives for the development of climate-neutral alternatives. However, it is fundamental for this and thus for a foresighted protection of future freedom that the legislator provides orientation for the earliest possible initiation of the necessary development and implementation processes, also for the time after 2030, and thus at the same time provides them with a sufficient degree of development pressure and planning certainty. The necessary development pressure arises when it becomes foreseeable that and which products, services, infrastructural, administrative and cultural facilities, consumer habits or other structures that are still CO₂-relevant today will soon have to be significantly redesigned. If, for example, the legislator stipulates at an early stage that the transport sector will only have small annual emission volumes available from a certain point in time, this could provide an incentive and pressure for the development and dissemination of alternative technologies and the necessary infrastructure. The early recognition of an increase in price and shortage of CO₂-relevant mobility could also lead to fundamental decisions and developments in the choice of occupation and workplace or in the design of work and business processes being made and initiated in good time so that they require less mobility from the outset. If the specified time were then reached, the CO₂ budget of the transport sector could be reduced without significantly curtailing freedoms.

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An innovative effect of early concrete reduction targets would not necessarily be prevented by the fact that the legislator could set its targets exclusively for Germany, but that Germany would be too small to be able to take part in international competition.

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markets to initiate and establish the necessary developments. Insofar as concrete reduction targets provide orientation for processes of social change and individual lifestyles, the national framework remains of paramount importance. But also in the field of technological development, a noticeable effect of binding national reduction paths is conceivable even where innovation is driven by economic interests. On the one hand, the German market itself generates demand. On the other hand, similar challenges also arise elsewhere and national regulations are also made in European and international coordination and interaction anyway.

(3) In the Climate Protection Act, the focus is on Article 4 para. 1 sentence 5 in conjunction with Article 4 para. 6 sentence 1 of the Climate Protection Act, in which the legislature has regulated the progression of the greenhouse gas reduction path. Pursuant to Article 4 para. 1 sentence 5 KSG, the annual reduction periods from 2031 (i.e. after the end of the reduction path regulated in Annex 2 to Article 4 para. 1 sentence 3 KSG until 2030) are updated by statutory order pursuant to Article 4 para. 6 KSG. Pursuant to section 4 para. 6 sentence 1 of the KSG, the Federal Government shall determine annually decreasing emission levels in 2025 for further periods after 2030 by statutory order. In this way, the legislator ties in regulatory terms with the determination of annual emission levels pursuant to Article 4 para. 1 sentence 3 of the KSG in conjunction with Annex 2. It could also choose other regulatory techniques to create the necessary planning horizon. However, since the further reduction process after 2030 is now guided by the regulatory authorisation in Article 4 para. 6 KSG, this provision must be able to create the development-promoting planning horizon required by fundamental law.

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In concrete terms, this means that in continuation of § 4 para. 1 sentence 3 KSG in conjunction with Annex 2, transparent specifications for the further design of remaining emission options and reduction requirements after 2030 must be formulated as early as possible. Only this will provide the basic orientation for the indispensable development and planning of corresponding technologies and practices (see also BTDrucks 19/14337, p. 17). To this end, the further reduction requirements to be laid down in continuation of section 4(1) sentence 3 KSG in conjunction with Annex 2 must be designed in such a way that they can fulfil the required orientation function. This is also largely in the hands of the legislator.

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On the one hand, however, it is constitutionally indispensable that further reduction measures are defined in good time beyond 2030 and at the same time sufficiently far into the future (emphatically Irish Supreme Court, judgment of 31 July 2020, 205/19, para. 6.45 ff.; cf. generally on an ecological timeliness requirement Schulze-Fielitz, in: Dreier, GG, 3rd ed. 2015, Art. 20a marginal no. 72). Only in this way can a planning horizon be created before which incentive and pressure arise to set in motion the required, sometimes protracted developments on a large scale. It is necessary that these developments begin soon, so that future freedom is not

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suddenly, radically and without replacement. It is understandable that when the Climate Protection Act was drafted, it was not readily possible to determine the reduction paths beyond the year 2030, for example, to the year 2050 as the year of the targeted climate neutrality (§ 1 sentence 3 KSG). In this respect, technical development and behavioural innovation cannot be predicted with sufficient accuracy; in the worst case, defining the development paths too early could even waste development potential. The paths, which have so far only been legally regulated until 2030, must then be continuously developed in time, in a staged process, over time. This must be done in good time so that clear planning horizons are created.

On the other hand, further annual emission quantities and reduction targets must be defined in such a differentiated manner that a sufficiently concrete orientation is created. Only this will create the necessary planning pressure, because only in this way will it become clear that and which products and behaviours in the broadest sense will soon have to be significantly redesigned. If it is concretely recognisable that, when and how the possibility of emitting greenhouse gases will end, the probability increases that climate-neutral technologies and behaviour will be quickly established in accordance with this development path.

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In all of this, the climate protection requirement of Article 20a of the Basic Law remains decisive. The provisions for the future must show a reduction path that leads to climate neutrality while preserving the remaining emissions budget. This presupposes that the permissible emission levels - as already provided for by the legislator in § 3 para. 3 sentence 2, § 4 para. 6 sentence 1 KSG - are reduced further and further. Otherwise, the constitutionally mandated climate neutrality could not be achieved in time (cf. also Art. 4 para. 3 PA). This does not exclude the possibility of offsetting, as regulated in particular in Article 4 para. 3 sentence 1 KSG, as long as emissions continue to fall overall.

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bb) The regulatory technique chosen in § 4 para. 6 sentence 1 KSG for updating the reduction path by specifying decreasing annual emission quantities is basically suitable for providing orientation for further development. The provision creates transparency as to where the relevant reduction path will be found, i.e. in the ordinance to be issued specifically for this purpose on the basis of Article 4 para. 6 sentence 1 KSG; this clarity is indispensable. However, the specific update in section 4(6) sentence 1 KSG is inadequately regulated. As a result, it does not meet the constitutional requirements for an arrangement that provides sufficient orientation for further development. This applies irrespective of the fact that the legislature must also make more detailed provisions on the size of the annual emission quantities due to Article 80 (1) sentence 2 of the Basic Law and the principle of the reservation of the law, if it adheres to the involvement of the legislature (below para. 259 et seq.).

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(1) The legal requirements for the updating of the reduction path according to

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2030 are constitutionally insufficient. Thus, it cannot be demanded that the decreasing emission quantities be determined concretely already now until the end, i.e. until the achievement of the climate neutrality targeted for 2050 (above marginal no. 253). However, it is not sufficient that § 4 para. 6 KSG merely obliges the Federal Government to determine annually decreasing emission levels "in 2025" "for further periods after 2030" by statutory order. This leaves open how far into the future this determination extends. According to the wording, this could only be two one-year periods extending only to 2032. Precisely because the reduction path in 2025 can and should hardly be definitively determined, it is not sufficient to merely oblige the federal government to make a further determination once - in 2025. This will hardly be able to reach climate neutrality. Rather, it would at least be necessary to determine the time intervals at which further commitments are to be made in a transparent manner.

Moreover, according to the procedure regulated in Article 4 para. 6 KSG, it is not certain that the further reduction path will be identifiable in time. It already seems doubtful that the first further determination of annual emission volumes in periods after 2030 would be in time. According to the regulation, decisions are not to be made until 2025. Accordingly, there is no planning beyond 2030 until 2025. This leaves a preparation time of only five years for the following period. This means that a sufficient planning horizon can hardly be established in time in many production, consumption or infrastructure sectors. Timeliness is also not ensured beyond the first determination, because Section 4 (6) sentence 1 KSG does not guarantee that the determinations extend far enough into the future. This is because the provision only obliges the Federal Government to set annually decreasing emission levels "for further periods after the year 2030". Nothing is said about the length of the periods; it could just as well be two one-year periods. A one-off determination in 2025 does not allow for sufficiently far-reaching future requirements. A repeated definition process is therefore also indispensable from the point of view of a sufficiently far-reaching definition in terms of time. In many areas of production and consumption, a lead time of five years is probably not sufficient to initiate the developments necessary for the subsequent protection of fundamental rights in good time. The legislator would have to impose more far-reaching stipulations on the legislator, if it maintains its involvement; in particular, it would have to oblige the legislator to make the first further stipulation before 2025 or at least to stipulate much earlier by statutory regulation how far into the future the stipulations must extend in 2025. If the legislator completely takes over the updating of the reduction path, it must itself regulate everything that is necessary far enough into the future in good time.

(2) Insofar as the legislator wishes to retain the involvement of the regulator in the revision of the requirements for the determination of annual emission quantities for periods after 2030, it may do so in principle, but must, in accordance with

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The Federal Government may, in accordance with Article 80(1) of the Basic Law and the principle of the reservation of the right to legislate, itself regulate the size of the annual emission quantities. It can regulate these directly and step by step. However, it may also prescribe essential criteria for the assessment of the annual quantities to the legislator. Section 4 (6) of the KSG does not yet meet these constitutional requirements.

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(a) According to Article 80 (1) of the Basic Law, the Federal Government may be authorised by law to issue statutory instruments. However, the content, purpose and extent of the authorisation granted must be specified in the law. The degree of certainty required of a regulation also depends on the intensity of the effects of the regulation on those affected. The more serious the effects are, the higher the requirements for the definiteness of the authorisation will be. In this respect, the requirement of definiteness touches upon the constitutional principle of the reservation of the law, which requires that the legislature itself determines the decisive foundations of the area of law to be regulated, which essentially affect the citizen's sphere of freedom and equality, and does not leave this to the actions of the administration (BVerfGE 56, 1 <13>; cf. BVerfGE 141, 143 <170 marginal no. 59>; 147, 253 <309 et seq. marginal no. 116>; 150, 1 <99 ff. marginal no. 199 ff.> with further references). This is intended to ensure that decisions of particular significance result from a procedure that offers the public the opportunity to form and represent its opinions and that encourages the people's representation to clarify the necessity and extent of encroachments on fundamental rights in public debate. A procedure is required which is characterised by transparency and which guarantees the participation of the parliamentary opposition (BVerfGE 150, 1 <96 f. marginal no. 192> with further references). However, the Basic Law does not recognise a monopoly of powers in the form of a comprehensive parliamentary reservation. The organisational and functional separation and division of powers standardised in Article 20 (2) sentence 2 of the Basic Law also aims at ensuring that state decisions are taken as correctly as possible, i.e. by the organs which have the best prerequisites for this in terms of their organisation, composition, function and procedure. Against this background, the complexity of the matters to be regulated may also limit the scope of the legislature's duty to regulate (BVerfGE 150, 1 <99 marginal no. 197> with further references). If regulations are to be enacted that substantially affect the rights of freedom and equality of the persons concerned, the involvement of the legislature in the regulatory task is not per se excluded (cf. BVerfGE 147, 310 <311 f. marginal no. 120>). However, the essential questions are then to be clarified either directly by the legislature or by a correspondingly specific regulation of the content, purpose and extent of the power to issue ordinances in a formal law, unless there are functional limits to the legislation.

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(b) Section 4 (6) KSG does not yet meet this requirement. If the legislator maintains the involvement of the legislator in the further determination of annual emission quantities, it must define the scope of the authorisation more precisely by determining the size of the annual emission quantities to be determined itself.

or specifies more detailed requirements for their concrete determination by the person issuing the ordinance.

(aa) In general, Article 80 (2) sentence 1 of the Basic Law requires, inter alia, the determination of the extent of the power to issue ordinances in the sense of quantitative limitation (cf. Reimer, in: Hoffmann-Riem/Schmidt-Aßmann/Voßkuhle, Grundlagen des Verwaltungsrechts Vol. I, 2nd ed. 2012, § 9 marginal no. 72). Here, the assessment of the further annual emission quantities for the period after 2030 is of particular importance for the realisation of fundamental rights. After 2030, considerable reduction efforts will be necessary. The annual emission quantities will therefore have to be tightly measured and will demand correspondingly serious impairments of fundamental rights. In this context, it will once again be necessary to weigh up the different needs for freedom over time. This is because the consumption of emission quantities, once authorised, will still be essentially irreversible. In the final phase of climate protection efforts after 2030, the division of responsibility for emission avoidance could be associated with profound encroachments on fundamental rights (cf. Kment, NVwZ 2020, 1537 <1540>) and therefore requires a statutory basis (cf. also Franzius, EnWZ 2019, 435 <437>); it is precisely the legislative procedure that creates the transparency required under constitutional law and permits a public exchange of views on how the reduction burdens are to be distributed after 2030 (cf. also Irish Supreme Court, Judgment of 31 July 2020, 205/19, paras.

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6.37 f.). Admittedly, in areas of law that are constantly subject to new developments and knowledge, the legal fixation of rigid regulations can be detrimental to the protection of fundamental rights and thus counterproductive (cf. fundamentally BVerfGE 49, 89

<137>). The further shaping of the transition to climate neutrality will also be characterised by processes of change and growing knowledge. The justified idea of "dynamic protection of fundamental rights" (BVerfGE, loc. cit.) cannot, however, be held against the statutory requirement here, because it is not a matter of keeping pace with development and knowledge for the protection of fundamental rights, but rather of making further developments for the protection of fundamental rights possible in the first place (see above para. 248 et seq.).

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(bb) The legislator did not provide the Federal Government with sufficiently specific requirements for the assessment of the further annual emission quantities for the period after 2030. Section 4 para. 6 sentence 1 KSG does speak of annually decreasing annual emission quantities (see also Section 4 para. 3 KSG on the possibility of offsetting within a reduction period). Article 20a of the Basic Law would not allow otherwise (see above marginal no. 255). However, § 4 para. 6 KSG does not regulate when and by what amounts the annual emission quantities are to be reduced. The size of the annual emission quantities could be deduced if, for example, they had to be reduced continuously, even periodically, in equal steps. However, it is not evident from the current provision that this is what is meant; rather, § 4 para. 1 sentence 4 KSG suggests that § 4 para. 6 KSG does not necessarily require this. Section 4 (1) sentence 6 KSG does not contain any further details on this either. This means that the essential question of

The size and distribution of the remaining emission quantities over future periods are not sufficiently determined by law.

The legislator can decide for itself on the size of the further annual emission quantities by directly regulating them step by step. However, the legislator can also prescribe essential criteria for the assessment of the annual quantities. It is conceivable, for example, that the legislature could set reduction quotas for certain target years. Since these are not meaningful in themselves (see above, marginal no. 125), the legislator would then have to additionally specify more detailed requirements for the reduction path leading to the target year. Apart from that, it is not constitutionally impossible to leave the detailed regulations to the legislator, as has been the case up to now, beyond the necessary statutory regulations on the size of the further annual emission quantities. For reasons of substantive law, however, the ordinance authorisation must then be supplemented by the above-mentioned requirements (para. 257 f. above).

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(cc) The fact that the regulation by the legislature required under Article 80.1 sentence 2 of the Basic Law is missing cannot be compensated by the participation of the Bundestag in the ordinances of the Federal Government provided for in § 4.6 sentence 3 and 4 of the KSG, because this cannot replace the missing legislative procedure and its legitimising effect (cf. BVerfGE 8, 274 <322 f.>; Bauer, in: Dreier, GG, 3rd ed. 2015, Art. 80 marginal no. 31 with further references; cf. also Wallrabenstein, in: v.Münch/Kunig, GG, 7th ed. 2021, Art. 80 marginal no. 27 with further references). A mere participation of the Bundestag does not do justice to the particularly high importance of the determination of annual emission volumes. Simple parliamentary participation cannot replace a legislative procedure, the special public function of which is precisely a weighty reason for applying the principle of the reservation of the right to legislate (above marginal no. 262).

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D.

I.

As a result, § 3 para. 1 sentence 2 and § 4 para. 1 sentence 3 KSG in conjunction with Annex 2 are unconstitutional insofar as there is no provision satisfying the requirements of fundamental rights (para. 251 et seq. above) on the updating of the reduction targets for the period from 2031 until the time of climate neutrality required by Article 20a GG. To this extent, the constitutional complaint in the proceedings 1 BvR 2656/18, insofar as it is admissible, and the constitutional complaints in the proceedings 1 BvR 96/20 and 1 BvR 288/20 are successful, whereas the constitutional complaint in the proceedings 1 BvR 78/20 is unfounded.

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If a norm is not in conformity with the Basic Law, it is in principle to be declared null and void (section 95 (3) sentence 1 BVerfGG). However, something different applies in cases where the declaration of nullity of a norm leads to a state of affairs which would be even more remote from the constitutional order. The Federal Constitutional Court

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then leaves it at a declaration of incompatibility and, as a rule, orders at the same time the continued application of the corresponding norms for a certain period of time (BVerfGE 130, 372 <402> with further references; case law).

This is the case here. If § 3 para. 1 sentence 2 and § 4 para. 1 sentence 3 KSG in conjunction with Annex 2 remained unapplied, the overall limitation of greenhouse gas emissions until 2030, which is basically required by Article 20a of the Basic Law and fundamental rights, would no longer apply. The danger for the use of fundamental rights after 2030 would then exist all the more, because the CO2 residual budget would possibly be consumed even more by then. Therefore, the established violation of the constitution does not lead to the nullity of § 3 para. 1 sentence 2 and § 4 para. 1 sentence 3 KSG in conjunction with Annex 2, but only to a declaration of their incompatibility with the Basic Law in conjunction with an order of continued application. The provisions therefore remain applicable, but the legislature must regulate the updating of the reduction targets for periods after 2030 in more detail until 31 December 2022, taking into account the requirements of this decision.

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II.

The decision on expenses is based on § 34a (2) and (3) BVerfGG.

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E.

This decision was taken unanimously.

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**Federal Constitutional Court, Decision of the First Senate dated 24 March 2021 -
1 BvR 2656/18, 1 BvR 96/20, 1 BvR 78/20, 1 BvR 288/20, 1 BvR 96/20, 1 BvR 78/20**

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- marginals (1 - 270), http://www.bverfg.de/e/rs20210324_1bvr265618.html

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