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Obligations for Owners to Climate-Proof Buildings in Germany

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1. Introduction

The European Union 'Green Deal' set a 55 % reduction target in 2019,[1] thus demanding more ambitious climate regulation, including on real estate.[2] The 'built environment' ('physical environment' as opposed to 'natural environment') absorbed a third of Germany's total energy consumption in 2018, for space and water heating.[3] At first sight, this appears to be slightly less compared to a worldwide CO_2 emission increase in the share of housing and construction sectors in total emissions to 38 %.[4] However, the potential for improvement is large. The building sector ranks third for

1 Commission, 'Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions, The European Green Deal' COM (2019) 640 final, 4: 'reduce greenhouse gas emissions by 2030 compared to 1990 levels'. The goal is to be climate-neutral in 2050.

2 Directive 2010/31/EU of the European Parliament and the Council of 19 May 2010 on the energy performance of buildings [2010] OJ L153/13 (and [2010] OJ L155/61); Directive 2018/844/EU of the European Parliament and the Council of 30 May 2018 amending Directive 2010/31/EU and Directive 2012/27/EU on energy efficiency [2018] OJ L156/75; Directive 2018/2002/EU of the European Parliament and the Council of 11 December 2018 amending Directive 2012/27/EU [2018] OJ L328/210; and Directive 2018/2001/EU of the European Parliament and the Council on the promotion of the use of energy from renewable sources [2018] OJ L328/82.

3 Freja Eriksen, 'The heat is on to make German buildings "nearly" climate-neutral' *Clean Energy Wire* (15 June 2020) <www.cleanenergywire.org/news/heat-make-german-buildings-nearly-climate-neutral> accessed 8 January 2024.

4 United Nations Environment Programme, '2020 Global Status Report for Buildings and Construction' (2020) 4.

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total CO_2 emissions in Germany.[5] In 2019, 86 % of all existing buildings in Germany had an energy label of 'C' or lower,[6] performing worse compared to neighbouring EU Member States.[7]

This contribution explores existing and future obligations to climate-proof buildings, the enforcement of such obligations, and the boundaries set by the right to property in Germany. The main focus of this contribution is the extent to which the government may impose such obligations without compensation. It first sets out the institutional and legal context of obligations to climate-proof buildings in Germany (Section 2). Section 3 describes and analyses existing or planned climate-proof obligations, particularly to use renewable sources (*e.g.*, geothermal, solar and wind power), combined with energy saving techniques (*e.g.*, insulation and heat pumps) and distribution systems (especially district heating networks). It then assesses the legality of such obligations, with or without the payment of compensation, under the constitutional rights to freedom[8] and to property under the German Constitution (*Grundgesetz*, hereinafter 'GG') (Section 4). Subsequently, it examines the scope and means for enforcing such obligations (Section 5). Section 6 concludes with some observations on regulatory change.

5 cf attachment No 2 of the Federal Climate Protection Act (2020). This contribution focusses on CO_2 emissions in the building sector – despite the interconnectedness with the general legal framework for the energy transformation. That is regulated in Germany by the German Energy Industry Act (*Energiewirtschaftsgesetz*), which implements various pieces of EU legislation such as the Renewable Energy Directives (RED) I and II; the current Regulation 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework for achieving climate neutrality and amending Regulations (EC) No 401/2009 and (EU) 2018/1999 [2021] OJ L243/1 (European Climate Law); the Directive 2023/1791 of the European Parliament and of the Council of 13 September 2023 on energy efficiency and amending Regulation (EU) 2023/955 [2023] OJ L231/1 (Energy Efficiency Directive) and its predecessors; and Directive 2023/2413 of the European Parliament and of the Council of 18 October 2023 amending Directive (EU) 2018/2001, Regulation (EU) 2018/1999 and Directive 98/70/EC as regards the promotion of energy from renewable sources, and repealing Council Directive (EU) 2015/652 [2023] (RED III). This larger regulatory framework is not part of this contribution, nor is the national transposition of RED III projected.

6 Deutsche Energie Agentur (dena), Institut für Energie – und Umweltforschung (ifeu), Prognos and others, 'Vorbereitende Untersuchungen zur Erarbeitung einer langfristigen Renovierungsstrategie nach Art 2a der EU-Gebäuderichtlinie RL 2018/844 (EPBD)' (2019), addendum to the final report of 16 October 2019.

7 Compare only to the Dutch report, which indicates 60 % of houses with energy label of C or worse in the Netherlands.

8 Freedom rights of future generations, as spelled out by the Federal Constitutional Court of Germany (BVerfG) in the famous decision of 24 March 2021 – 1 BvR 2656/18, 1 BvR 288/20, 1 BvR 96/20, 1 BvR 78/20, Constitutional Court (BVerfGE) case reporter Vol. 157, 30.

2. The Institutional and Legal Framework for Obligations to Climate-Proof Buildings

The area of climate protection law is a cross-sectional matter in Germany,[9] with a large number of interlaced climate protection-related provisions in civil and public law. Climate change-related obligations for real estate owners are implemented across all (energy and land) planning,[10] building and environmental laws.[11] While the current central framework for German climate policy is the Federal Climate Protection Act[12] (sub-section 2.2),[13] the Buildings Energy Act (GEG)[14] is the key text for the built environment (2.3). Many federated States enacted specific climate-proofing obligations (2.4.). However, all these secondary laws are influenced by the normative implications of the German Constitution (2.1).[15]

9 See Michael Kloepfer, *Umweltrecht* (4th edn, C.H. Beck 2016) 1530; Sabine Schlacke, *Umweltrecht* (9th edn, Nomos 2023) 512.

10 Special areas for climate protection can be designated in landscape planning by the Federal Nature Conversation Act (§ 1(3) *Bundesnaturschutzgesetz*; BNatSchG).

11 Most noteworthy, the Federal Building Code (*Baugesetzbuch*; BauGB) of 23 October 2004, amended by the Act of 28 July 2023 (BGBl. I, 221). Since 2011, this code has contained several climate-related regulations. According to § 1(5) Federal Building Code, climate protection and climate adaptation must be promoted during construction and the effects on the climate should be taken into account when drawing up development plans. According to § 1a, climate protection must be taken into account in the construction law assessment. The planning forms under building law (development plan, land use plan) also require the inclusion of climate protection (§§ 5(2), 9(1) Federal Building Code). Most important is the construction of wind energy and photovoltaic systems (§ 35(1) No 5 Federal Building Code). According to § 171a Federal Building Code, the urban settlement structure should be adapted to the general requirements for climate protection. The Federal Building Code and the Federal Land Utilization Ordinance (BauNVO) offer various options for climate-friendly urban planning. In January 2024, changes to the Federal Building Code came into force at the same time as the Heat Planning Act in order to support the implementation of heat planning under building planning law. Christoph Külpmann, 'Steuerung der Wohnraumvorsorge und des Freiraumschutzes durch das Bauplanungsrecht' (2022) ZUR 81 (on § 9 BauGB). On how climate-proof city planning is regulated by a mix of subsidy incentives, municipal land planning, contracts and amendments to the land registry: Christine Godt, 'Environmental Duties in the German Land Register' in Siel Demeyere and Vincent Sagaert (eds), *Contract and Property with an Environmental Perspective* (Intersentia 2020) 235.

12 Federal Climate Protection Act (*Klimaschutzgesetz*, KSG) of 12 December 2019 (BGBl. I, 2513), amended by Art. 1 of the Act of 18 August 2021 (BGBl. I, 3905).

13 See KSG.

14 German Buildings Energy Act, (*Gebäudeenergiegesetz*, GEG) of 8 August 2020 (BGBl. I, 1728).

15 BVerfG decision of 24 March 2021 – 1 BvR 2656/18, 1 BvR 288/20, 1 BvR 96/20, 1 BvR 78/20, BVerfGE 157, 30.

2.1 The Constitution

Environmental protection was introduced in the German Constitution in 1994 as an objective State goal (Art. 20a GG). This State goal affects all state activity, *i.e.*, the executive and the legislative branch. Citizens do not have a direct claim against the State for certain environmental measures under this provision, but it does nevertheless – in conjunction with fundamental rights – impose an obligation on the State and all its branches to direct actions in a way that freedom rights of future generations are respected. This is how the Federal Constitutional Court (*Bundesverfassungsgericht*, hereinafter 'BVerfG') interpreted the climate protection law in its famous decision of March 2021.[16] While the different subsequent German governments at the Federal level have pushed for a reduction of greenhouse gas emissions since 2014, the BVerfG ruled that the Climate Protection Act of 2019[17] was not specific enough. With respect for the legislatures' scope for action, the Court declared that the legislature must move towards a "freedom-preserving transition to climate neutrality".[18] The decision led to significant legal changes of climate protection and set guidelines for future legislation.

The shift in emphasis in the constitutional context is clear:[19] the climate protection requirement in Germany now derives from Article 20a GG in conjunction with freedom rights and interacts with Article 14 GG, which protects the property title of the owner and the possession right of the tenant.[20] Climate protection as a precondition for the exercise of freedom has now been given a constitutional status in Germany. Yet, the recognition of climate protection as a precondition for freedom does not amount to a subjective individual right. The primary addressee of Article 20a GG remains the legislature, which fulfills the State's constitutional mandate through climate-protecting standards. However, it implies an impact on the proportionality of State obligations for homeowners. Ultimately, there is considerable leeway for the legislature, without specifications of the instruments.[21]

16 BVerfG decision of 24 March 2021, BVerfGE 157, 30 (Climate Protection).

17 KSG, of 12 December 2019 (BGBl. I, 2513), first amended in 2021, Act of 18 August 2021 (BGB1. I, 3905).

18 BVerfG decision of 24 March 2021, BVerfGE 157, 30 (Climate Protection, No 244).

19 BVerfG decision of 24 March 2021, BVerfGE 157, 30 (Climate Protection, No 249) on the comparable mobility sector. The different sectors (buildings, mobility) are interdependent and fewer emissions in the mobility sector can be credited to the building sector.

20 BVerfG decision of 26 May 1993, BVerfGE 89, 1, 6.

21 See Schlacke (n 9) 63.

2.2 The Federal Climate Protection Act

The Federal Climate Protection Act (*Klimaschutzgesetz*, hereinafter KSG) is the central legal-administrative framework for German climate policy. When enacted in 2020, the KSG set, for the first time, legally binding climate targets in transposing international commitments, and coupled these goals with a concrete reduction pathway, with milestones and procedural safeguards. The aim is to become carbon neutral by 2045, and to reduce carbon emissions until 2030 by 65 %.[22] These targets are coupled to defined pathways for six sectors, with the built environment one of them,[23] stipulating continuously decreasing 'CO_2-equivalents'.[24] In 2022, it became evident that sectors are missing their reduction goals, among which the building sector missing it for 2021 by two million tons of CO_2-equivalents.[25] Against the background of continuously growing living spaces by 2 %[26] and the evident gap,[27] the responsible ministries submitted an Emergency Programme on 13 July 2022,[28] as mandated by § 8 Climate Protection Act. Yet, in March 2023 the political goal of fixed sector reduction goals was lifted in the course of a tense political discourse. While the coalition held on to the overall reduction goal of 65 %, sectors may compensate among each other.[29] That said, the Emergency Programme of the building sector was not repealed.

22 § 3(1) KSG. The Act is currently under revision for a second amendment. The proposal passed the first reading of the German Parliament (Bundestag) on 22 September 2023, see the text in BT-Drs. 20/8290 of 11 September 2023.

23 Along with the energy production industry, energy consumption industry, transportation, agriculture and waste management.

24 See KSG, attachment 2 (BGBl. I, 2021, 3907). Until 2030, the building sector has to reduce its emissions down to 67 Mio t CO_2-equivalents.

25 Study of the Federal Environmental Agency (*Umweltbundesamt*) of March 2022. The attachment 2 of the KSG limited emissions in the building sector to a volume of 113 Mio. t CO_2-equivalents for 2021.

26 Federal Ministry for Economy and Climate Change (BMWK) and Federal Ministry for the Housing Sector (BMWSB), 'Sofortprogramm gemäß § 8 Abs. 1 KSG für den Sektor Gebäude' (2022) 1 <www.bmwsb.bund.de/SharedDocs/pressemitteilungen/Webs/BMWSB/DE/2022/07/sofortprogramm-klimaschutz-gebaeude.html> accessed 8 January 2024.

27 Which is coupled to the duty to make up for missed reductions in the future, see BMWK and BMWSB (n 26) 13.

28 BMWK and BMWSB (n 26).

29 See second amendment (n 22).

2.3 Buildings Energy Act (GEG)

The Buildings Energy Act (GEG) of 2020[30] was enacted by the previous Christian democrats-led coalition government (cabinet Merkel IV 2017–2021), in conjunction with an amendment of the German Civil Code (BGB), which limits the passing-on of renovation costs to tenants,[31] and has introduced a claim of tenants and co-owners to make e-mobility possible (see section 5 below).[32] It replaced earlier energy saving legislation[33] and bundled respective duties in one single Act. Previous legislation had not prescribed specific housing standards. However, subordinated ordinances standardized building efficiency (most notably the *Energieeinsparverordnung*, EnEV, first enacted 2001) by technical standardization. The focus was on insulation,[34] incentives for refurbishment, and the incentivized consultation of energy experts through subsidization. The standards (usually DIN standards) were not legally binding, but in practice semi-binding since the Public Bank for Redevelopment (*Kreditanstalt für Wiederaufbau*, KfW) linked public subsidies to compliance with those standards. The GEG (2020) harmonized standards for energy-efficient construction and refurbishment following EU law,[35] and made existing standards mandatory – by technically naming the DIN-standards in the norm text.

30 GEG (n 14).

31 As a matter of principle, a landlord can pass on costs for energy saving measures under § 559 BGB. However, several articles limit the increase of the rent. Energy-efficiency improvements may not cause personal hardship (§ 555d(2) BGB). The change of the heating system to carbon neutral energy may not cause a higher rent (Art. 556c(1) No 2 BGB). Eventually, rent increases are capped (§ 559 (1) BGB).

32 New wording of § 554 BGB and § 20(2) No 2 Appartment Buildings Act (*Wohnungseigentumsgesetz*; WEG), as amended 12 January 2021 (BGBl. I, 34): tenants and co-owners may demand changes that allow the charging of e-cars. However, the costs must be borne by the person who wishes the installation. In addition, voting procedures were changed: a simple majority suffices to approve energy improvements, § 21 WEG. The current amortization span of ten years can be stretched. See: Wolfgang Dötsch, Hendrik Schultzky and Frank Zschieschack, *WEG-Recht 2021: Das neue Wohnungseigentumsrecht* (C.H. Beck 2020); Stefan Hügel and Oliver Elzer, *Wohnungseigentumsgesetz: WEG* (3rd edn, C.H. Beck 2021), § 20, para 73 (loading stations), § 21, para 19ff (modernizing); Markus Kachel, 'Dekarbonisierung der Wärmeerzeugung – kurzfristig umsetzen, was langfristig wirken soll' (2022) ZUR 193.

33 The Act bundles the previous *Energieeinsparungsgesetz*, *Energieeinsparverordnung*, and *Erneuerbare-Energien-Wärmegesetz*, and transposes first and foremost Art. 9 Dir 2010/31/EU (n 2), which obliges Member States to require non-residential buildings instead of housing owned by the public hand from 2019 onwards, and all newly built houses from 2021, to be built as nearly zero-energy-buildings. Beyond, the law serves to transpose Dir 2018/844 (n 2), Dir 2018/2002 (n 2), and Dir 2018/2001 (n 2).

34 First roof-top insulation, afterwards the building shell (walls, windows, doors, etc.).

35 Schlacke (n 9) 564. The goal was to ensure that all EU Member States achieve a nearly zero-energy standard for new buildings.

Prior to 2002, regulations were only addressed to builders and, thus, newly built houses.[36] The GEG (2020) is also directed at owners,[37] thus extending obligations to existing buildings. Yet, obligations for owners to climate-proof their buildings must comply with the principle of economic viability (§ 1(2) GEG). The aim is to initiate a sustainable development of the energy supply (§ 1(2) GEG) with the public building stock serving as a role model (§ 4 GEG). However, the law has remained lenient on private homeowners by extending the deadline for compliance to the next transfer of title.[38]

The first light regulation of real estate transactions was introduced in 2002, a voluntary information instrument: the energy pass, transposing EU law. Yet, it evolved: In 2008, it became mandatory for buildings being sold or rented. For 2023, the GEG 2020 reduced the permissible yearly primary energy consumption in newly built houses from 75 % down to 55 % in reference to comparable houses.[39] As in all other Member States, the federal obligation does not require specific measures.

Overall, the early GEG (2020) was conceptualized as complementary to the mix of instruments, such as pricing through carbon trading (primarily targeting the industrial sector, including the construction sector since 2023[40]) and incentives such as subsidies (primarily addressed to private homeowners). While it focused on newly built and major renovated buildings,[41] including commercial office spaces, it was restrained in regard to existing buildings. Many federaled States responded to

36 *Bauherren*, defined as responsible actors, Ekkehard Hofmann, '§ 8 GEG' in Matthias Knauff (ed), *GEG*/*GEIG* (Nomos 2022) para 2.

37 ibid.

38 § 47(3) GEG reads: '(3) Bei einem Wohngebäude mit nicht mehr als zwei Wohnungen, von denen der Eigentümer eine Wohnung am 1. Februar 2002 selbst bewohnt hat, ist die Pflicht nach Absatz 1 erst im Fall eines Eigentümerwechsels nach dem 1. Februar 2002 von dem neuen Eigentümer zu erfüllen. Die Frist zur Pflichterfüllung beträgt zwei Jahre ab dem ersten Eigentumsübergang nach dem 1. Februar 2002.'

39 Revised §§ 15 and 18 GEG 2023, of 28 July 2022 (BGBl. I, No. 28, 1237; the reference procedure is defined in GEG attachment No 2).

40 Directive 2023/959 of the European Parliament and of the Council of 10 May 2023 amending Directive 2003/87/EC establishing a system for greenhouse gas emission allowance trading within the Union and Decision (EU) 2015/1814 concerning the establishment and operation of a market stability reserve for the Union greenhouse gas emission trading system [2023] OJ L130, 134.

41 'Modernization' is defined in each applicable Act, *e.g.*, *Sanierung* in § 2 No 6 (*Klimaschutz- und Klimawandelanpassungsgesetz Baden-Württemberg*; KlimaG BW) as 'durchgreifende Maßnahmen zum Substanzerhalt oder zur Modernisierung eines Bauwerks'. In the BGB, it is extensively regulated in § 555b BGB, because of the risk of rent increases. § 555b BGB defines 'bauliche Veränderung' as structural changes, including energy improvements. Thus, in *most* Acts, the definition is normative, not quantitative – which appears to be different from the Dutch approach in which compliance duties are triggered when the 'renovation involves at least 25 % of the building surface'.

this lacuna by establishing concrete implementation duties also for existing buildings, such as solar panels on a minimal rooftop space (see Section 3 below).

The current German coalition government has targeted the modernization of heating systems in existing buildings, including private homes. While the coalition treaty of December 2021 was still limited to mandatory solar rooftop panels for all (new) commercial buildings and a rule-and-exception mechanism for private newly built homes,[42] the Russian war in Ukraine and the subsequently projected energy shortage raised the pressure in 2022.[43] It gave way to a phase-in of new heating systems in existing private homes. Draft legislation in spring 2023 required 65 % renewable heating sources for replacements of old heating systems from 1 January 2024, coupled with any necessary exchange in existing private housing (dubbed "heating law" ["Heizungsgesetz"]),[44] which caused a coalition crisis.[45] In contrast to *inter alia* the Netherlands, the political opposition did not frame the legislative proposal as an assault on private property *per se* (be it the German Constitution or the ECHR), but as a disproportionate measure (in more depth Section 4 below). The focus was on objective feasibility (shortage of service personal and machinery) and social justice (overburdening the less affluent). In September 2023, a strongly curtailed revision was approved by Parliament, to become effective on 1 January 2024. The principal goal remained: all newly installed heating systems should be powered

42 SPD, Bündnis 90/Die Grünen and FDP, 'Mehr Fortschritt Wagen' (Coalition Treaty [*Koalitionsvertrag*] 2021–2025 between the Sozialdemokratischen Partei Deutschlands (SPD), BÜNDNIS 90 / DIE GRÜNEN and the Freien Demokraten (FDP), 2021) 56: 'Alle geeigneten Dachflächen sollen künftig für die Solarenergie genutzt werden. Bei gewerblichen Neubauten soll dies verpflichtend, bei privaten Neubauten soll es die Regel werden.' At page 90: 'Im Rahmen des Klimaschutzsofortprogramms führen wir 2022 nach dem Auslaufen der Neubauförderung für den KfW-Effizienzhausstandard 55 (EH 55) ein Förderprogramm für den Wohnungsneubau ein, das insbesondere die Treibhausgas-Emissionen (THG-Emissionen) pro m² Wohnfläche fokussiert und ändern das Gebäudeenergiegesetz (GEG) wie folgt: Zum 1. Januar 2025 soll jede neu eingebaute Heizung auf der Basis von 65 Prozent erneuerbarer Energien betrieben werden; zum 1. Januar 2024 werden für wesentliche Ausbauten, Umbauten und Erweiterungen von Bestandsgebäuden im GEG die Standards so angepasst, dass die auszutauschenden Teile dem EH 70 entsprechen; im GEG werden die Neubau-Standards zum 1. Januar 2025 an den KfW-EH 40 angeglichen. Daneben können im Rahmen der Innovationsklausel gleichwertige, dem Ziel der THG Emissionsreduzierung folgende Maßnahmen eingesetzt werden.'

43 In Germany, encapsulated with the term *Zeitenwende*, as formulated by the Chancellor in his 'Zeitenwende-Rede' in Parliament on 27 February 2022. Until then, Germany had been particularly dependent on the supply of Russian gas, both in the industrial sector (due to the importance of the high-energy consuming steel, chemical and machinery industry) and the private sector (due to the high percentage of private gas heaters).

44 BT-Drs. 20/6875 of 17 May 2023.

45 Prompting a coalition committee to agree on new guidelines, 28 March 2023. As to climate-proof housing, the new text stipulates 'no straight forward prohibition of gas heating systems'.

by at least 65 % renewable energy. The regulation is now technologically neutral. The compromise has introduced obligations for municipalities to complete their heat infrastructure planning first,[46] and catered for technological openness and innovativeness by way of exceptions for new technologies. Functioning heating systems in existing buildings do not have to be replaced and repairs can also be carried out. If old heating systems can no longer be repaired, generous transition periods apply. The counselling by energy experts has become obligatory (§ 48 GEG 2024). Currently (October 2023), the GEG is under review of the BVerfG.[47] Yet, the yardstick is not property protection, but the right of members of Parliament to be given enough time to scrutinize submitted drafts (Art. 38 GG).[48]

The already announced next revision will tackle buildings with particularly high consumption levels, *inter alia* data processing service centres, and envisions differentiations between large, middle-sized and small companies.[49] It will also adopt a life-cycle approach that will take emission standards to produce construction material[50] and the recycling of building material on board.[51]

In parallel with the domestic heating system's debate, the contested debate about the renewal of the EU-Energy Performance of Buildings Directive (EPBD) continued.[52] The EPBD was supported by the German government in 2022,[53] but after

46 Heat Planning Act (*Gesetz für die Wärmeplanung und zur Dekarbonisierung der Wärmenetze*; WPG), of 22 December 2023 (BGBl. I, No 394). Many German municipalities do not yet have a municipal heat planning. By mid-2028, it should be determined where heating networks will be installed so that homeowners can consider which investments are economically worthwhile. However, the municipal heating network will not have any legal external effect according to § 23 of the draft (draft for municipal heat planning, Federal Heat Planning Act, BT-Drs. 20/8654). This means that non-compliance with thermal planning is important for owners' investment decisions. According to the draft law, the legislature does not want to grant any claims for failed plans (§ 23 *Wärmeplan*: (...) (4) Der Wärmeplan hat keine rechtliche Außenwirkung und begründet keine einklagbaren Rechte oder Pflichten.).

47 BVerfG order of 5 July 2023, 2 BvE 4/23.

48 BVerfG order of 5 July 2023, 2 BvE 4/23 (Verletzung von Art. 38 GG), cf Hasso Suliak, 'Kein Heizungsgesetz vor der Sommerpause: Das BVerfG wird übergriffig' *LTO* (6 July 2023) <www.lto.de/recht/meinung/m/heizungsgesetz-bundestag-gestoppt-bverfg-einstweilige-anordnung-heilmann-kommentar/>.

49 BMWK and BMWSB (n 26) 13.

50 The construction sector was integrated in the system of carbon trading by Dir 2023/959/EU (n 40) (see attachment III, which establishes a separate system EU-EHS II).

51 BMWK and BMWSB (n 26) 6 and 11.

52 The European Parliament decided in the first reading on 14.3.2023, and concluded more ambitious requirements compared to the Commission's Proposal.

53 Germany openly supported the EU Commission's proposals to revise the Directives on building efficiency and implement a binding Minimum Energy Performance Standard for public buildings, non-residential and residential buildings, and for newly built houses a Zero-Emission Building Standard, BMWK and BMWSB (n 26) 5.

broad opposition by the German construction industry, the responsible ministry pulled back.[54] The Directive intends to further increase the energy requirements for new buildings in two steps (first EH-55 by 2024, and then EH-40 by 2025). Carbon neutrality for new houses shall be achieved in 2028; for buildings used and owned by public agencies, the deadline shall be 2026. All new buildings shall be equipped with solar panels from 2028 onwards, as far as proportional. More importantly, the European Parliament (EP) opted for a duty to renovate: "G"-class-residential houses shall achieve class "E" until 2030, and class "D" by 2033. Non-residential and public buildings shall achieve these standards by already by 2027. At the same time, the EP decided that renovation duties are to be coupled with subsidies and exceptions. However, the Council of the EU has largely rejected these obligations to climate-proof existing buildings.

In sum, German climate-proofing regulation is, on the one hand, path-dependent on domestic energy saving regulation originally responding to the energy crisis in the 1970s[55] and the peculiar federal[56] and corporatist structure of Germany.[57] On the other hand, regulation has evolved in coordination with EU policies, most notably Directive 2010/31/EU (Energy Performance of Buildings, EPBD) and Directive 2012/27/EU (energy efficiency).[58] It is therefore no surprise that the conceptual differentiations in German climate-proof building laws mirror European and the other

54 Minister of Housing, Urban Development and Building K Geywitz, see Tobias Schmidt, 'Bauministerin Klara Geywitz will Sanierungszwang aus Brüssel stoppen' *NOZ* (17 September 2023) <www.noz.de/lebenswelten/bauen-eigentum/artikel/sanierungszwang-bauministerin-geywitz-will-eu-plaene-stoppen-45509268> and 'Bundesregierung stellt sich gegen EU-Sanierungspflicht' *Frankfurter Allgemeine Zeitung* (23 September 2023) <www.faz.net/aktuell/wirtschaft/wohnen/ampel-koalition-stellt-sich-gegen-eu-pflicht-zur-sanierung-von-wohnungen-19195245.html> accessed 8 January 2024.

55 The first building efficiency regulation dates back to 1977 (BGBl. I, 1977, 1554).

56 Germany is vertically structured by three (interlaced) levels: the federal level is supported by 16 States, which hold the constitutional 'competence-competence'. The States consist of multiple municipalities with powerful planning authority (*Gemeinden*, *Städte* and *Kreise*). In larger States, an additional middle level between the State and the municipalities complements the municipal level (endowed with strong planning authority). In fact, the non-federal levels have been fore-runners in renewable energy obligations for the built environment, before the federal level became more proactive with the change of government in 2021.

57 As widely discussed in political science literature, *e.g.*, Francis G Castles, Stephan Leibfried, Jane Lewis, Herbert Obinger and Christopher Pierson (eds), *The Oxford Handbook of the Welfare State* (OUP 2010). The implication of this structure is twofold: (1) Various associations are heard before a legal act becomes enacted (*e.g.*, in the case of the heating system obligation enacted in GEG 2024: during the legislative process, heat pump manufacturers promised the expansion of production, and craftsmen associations pleaded for advanced training; the consequences are mirrored in the BMWK and BMWSB (n 26) 9; (2) Quality standards are set by way of a public-private mix, which – until recently – were formally of a voluntary nature.

58 For references see n 2.

Member States' regulations: rules distinguish between private and public buildings (with higher standards for public buildings), commercial and non-commercial (with higher standards for commercial buildings), residential and non-residential buildings (with higher standards for non-residential buildings), commercial housing versus private homeowners (with higher standards for commercial housing), and between new and existing buildings (with higher standards for new buildings). Only recently, positive obligations were coupled with municipal infrastructure planning, and for technological openness and innovativeness, privileges for new technologies are fostered or supported as 'bridge technologies'.

2.4 Federated State level – municipal level: concrete positive solar installation duties

Municipal heat planning has become the basis for a climate-neutral heat supply, and the Federal Heat Planning Act[59] now provides the statutory ground.[60] It came into force at the same time as the GEG (Buildings Energy Act), on 1 January 2024. In the longer term, the legislation will enhance the resilience of the heat supply within the building sector. From 2024, heat plans will be drawn up in all municipalities in Germany.

The Heat Planning Act provides for a gradual, harmonized transformation in the federated States. Until December 2023, only Baden-Württemberg, Hesse, Schleswig-Holstein, and Lower Saxony had enacted respective laws.[61] The practice of municipal heat planning in Germany has been inconsistent. Yet, many municipalities, almost every fifth city, have already drawn up heat plans, because of the positive effects of local district heating.[62]

The goal of the Heat Planning Act is a decarbonized heating supply by 2045. Citizens and companies will be informed by 2028 whether they can expect a district heating connection in the municipality. Under German municipal law, an obligation

59 WPG (n 46).

60 Bundesministerium für Wohnen, Stadtentwicklung und Bauwesen, 'Kommunale Wärmeplanung' (2023) <https://www.bmwsb.bund.de/Webs/BMWSB/DE/themen/stadt-wohnen/WPG/WPG-node.html> accessed 8 January 2024.

61 So far, Baden-Württemberg (*KlimaG BW*) of 7 February 2023; Hesse (§ 13 *HEG*: *Hessisches Energiegesetz*) of 21 November 2012; Schleswig-Holstein (§ 7 *EWKG*: *Gesetz zur Energiewende und zum Klimaschutz in Schleswig-Holstein*) of 7 March 2017; and Lower Saxony (§ 20 *NKlimaG*: *Niedersächsisches Gesetz zur Förderung des Klimaschutzes und zur Minderung der Folgen des Klimawandels*) of 10 December 2020. The introduction is being prepared in North Rhine-Westphalia and municipal energy plans are promoted in Bavaria.

62 'Kommunale Wärmeplanung' (n 60).

to connect to a district heating network is already possible.[63] The respective instrument is the 'compulsory participation and use', which is available for public facilities of German municipalities. An obligation to connect to district heating for the purpose of global climate protection was also approved by the Federal Administrative Court (BVerwG).[64] The usual form to introduce a compulsory participation and use of district heating is the municipal statute.[65]

In principle, the new Act introduced a priority for municipal district heating supply, which cannot be easily undermined by the federated States,[66] molded into § 109 Buildings Energy Act, GEG. Affected property owners can defend themselves against a connection order based on fundamental rights. Implementing heat planning in the federated States must therefore provide for exceptions. If property owners have already invested in heat pumps, for example, this must be taken into account when enforcing compulsory participation and use to guarantee proportionality.

3. Obligations to Climate-Proof Existing Buildings

Already Art. 7 of Directive 2010/31/EU mandated that Member States "shall take the necessary measures to ensure that when buildings undergo major renovation, the energy performance [...] is upgraded [...]." This goal can be achieved by defining general standards that must be met, either tackling the reduction of energy consumption or the decarbonization of energy sources (sub-section 3.1), or by specific obligations, such as insulation (3.2) and sustainable heating systems (3.3).

3.1 General Climate-Proofing

As early as 1977, German law introduced building energy standards (at the time limited to new and renovated buildings).[67] The chosen technique was the maxi-

63 Wilfried Erbguth, Thomas Mann and Mathias Schubert, *Besonderes Verwaltungsrecht* (13th edn, C.F. Müller 2019) 119, 120.

64 BVerwG decision of 8 September 2016, BVerwGE 156, 102 (*Anschluss- und Benutzungszwang/Fernwärme*).

65 Felix Ekardt, 'Fernwärme für den globalen Klimaschutz' *LTO* (9 June 2016) <www.lto.de/recht/hintergruende/h/bverwg-urteil-10cn115-fernwaerme-anschluss-benutzung-zwang-satzung-kommune/> accessed 8 January 2024.

66 Erbguth, Mann and Schubert (n 63) 119, 120.

67 cf n 55 (*Wärmeschutzverordnung*), revised with raised standards in 1982 and 1995.

mum 'heat transmission coefficient', *i.e.*, the reduced loss of heat, in reference to comparable buildings.[68] In 1978, heating systems became regulated.[69] Both measures were based on the Federal competence for energy regulation (Art. 74 GG). In 2002, the Energy Saving Regulation, EnEV, merged these two Acts. Since then, the energy efficiency of a building and the heating system are evaluated as one system. The standardized classification of buildings from A to H was only integrated in the EnEV in 2014, linked to the mandatory energy efficiency passport in transposition of Directive 2010/31/EU. Until today, German law does not oblige building owners to meet a particular standard (for example, standard 'C'),[70] but, if needed, to install heat recovery systems that meet specific DIN-standards.[71]

The point of departure for determining duties is the prohibition to deteriorate the energy performance of a building (§ 46 GEG). The central distinction between office buildings and residential housing relates to the required energy saving level[72] and methods of measurement,[73] but is not a question of whether obligations apply at all. Commercial use is no normative category under the Federal GEG, but it is under some State laws (see sub-section 3.3 below[74]), nor is the distinction between the building as such (as evidenced by the building passport), the activities, and the energy use for specific activities carried out within the building. Instead, proportionality is the cross-cutting category applicable to all obligations, which is triggered

68 Art. 5 Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings [2010] OJ L153/13, in German law today §§ 20–21 GEG.

69 HeizAnlVO transposed Council Directive 92/42/EEC of 21 May 1992 on efficiency requirements for new hot-water boilers fired with liquid or gaseous fuels [1992] OJ L167/17 (and OJ L195/2), revised by Council Directive 93/68/EEC of 22 July 1993 amending Directives (...) 92/42/EEC (new hot-water boilers fired with liquid or gaseous fuels) (...) [1993] OJ L220/1. The last revision of the HeizAnlVO dates back to 1998 (BGBl. I, 851). On 1 February 2002 the rules of the HeizAnlVO and the *Wärmeschutzverordnung* of 1994 (BGBl. I, 2121) were incorporated into Energy Saving Regulation EnEV.

70 Whether those categories become prevalent, depends on future EU regulations. According to Art. 9 of the Draft-Energy Performance of Buildings Directive (Committee on Industry, Research and Energy, 'Draft European Parliament Legislative Resolution on the proposal for a directive of the European Parliament and of the Council on the energy performance of buildings' (COM [2021] 0802 – C9-0469/2021–2021/0426 [COD]) minimum energy performance standards were supposed to be set for both non-residential buildings (from 1 January 2027, at least energy performance class E; and, from 1 January 2030, at least energy performance class D) and residential buildings (from 1 January 2030, at least energy performance class E; and, from 1 January 2033, at least energy performance class D).

71 §§ 47 and 49 GEG.

72 cf §§ 15–16, §§ 17–19 GEG.

73 cf attachments No 1 (residential buildings) and 3 (non-residential buildings) of the GEG.

74 cf Dutch law, where different categories apply to offices or shopping malls.

when investments become too costly, even when savings in a reasonable timeframe are considered.[75] Then, the duty is not applicable.[76]

The GEG as a building regulation is closely related to efforts to transform the energy mix towards renewables by the authorities responsible for energy policies. These are connected with land use planning, but different authorities at different State levels are in charge, despite a Federal framework competence (BauGB). Only a few States have enacted State climate-related laws. That said, federal law has recently prescribed that the central planning instruments (at State level: *BaunutzungsVO*; at municipal level: *Bauordnungen*) amend municipal district heating planning.[77]

3.2 Insulation & Windows

Already the EnEV, first enacted in 2001, aimed at climate neutrality by 2050. Path-dependently, the regulatory set-up was of a technical nature. Standards were primarily defined by concrete technical norms, less by broad classifications. In practical terms, efforts focused on insulation, most prominently the heat loss through the roof.[78] Yet, already Art. 7(2) Directive 2010/31/EC made clear that the building unit as a whole is the target, which would include insulating glazing. Yet, since 1 February 2002, the statutory duty to comply with heat loss standards has only emerged for residential private homes with the transfer.[79] The legislation does not provide for a legal duty to renovate for the current owner.

Yet, as described, although the duty to comply with heat loss standards was not legally binding, it was made contractually binding once the renovation was supported by public subsidies. Those were available, and recommended by energy consultants and – depending on general interest rates – also by banks.

75 The German law does not concretize 'reasonable time' or 'savings' in the way of the Dutch Art. 2.15 Dutch Activities Decree Environmental Management (*Activiteitenbesluit milieubeheer*) (under which costs shall be recovered in no more than five years).

76 § 47(4) GEG.

77 BMWK and BMWSB (n 26) 8; BT-Drs. 20/8654 (Heat Planning Act). Many German municipalities do not yet have a municipal heat planning.

78 § 47 GEG.

79 § 47(2) GEG.

3.3 Sustainable Heating Systems (Solar panels, heating replacement, district heating)

While already § 72 GEG-2020 mandated the phasing-out of oil-fired boilers for (all) buildings built prior to 1991, the duty did not apply to boilers units below 4 kW or above 400 kW,[80] and the reasonableness standard of § 72(5) GEG[81] applied. This legislative set-up had the consequence that the duty has not been enforced in practice.

The Federal government tackled the modernization of heating systems in 2023. The GEG-2024 (see sub-section 2.3 above) prescribes 65 % renewable heating sources in private homes once replacement is necessary, from 1 January 2024 onwards. The rule is technology-neutral, therefore the goal can be reached by any type of renewable energy.[82] The political compromise rests on three pillars: (1) the duty to exchange the heating system is linked to the municipal heating planning. This secures the planning autonomy of homeowners; (2) gas heaters will remain acceptable (also for new constructions) if they can be retrofitted to hydrogen. Wood-pellet heating systems remain allowed. This secures technology openness; and (3) landlords may only shift the burden to the tenants if they had previously applied for public financial support. This obligation secures social justice. No other financial consideration applies.[83]

On State level, several States and municipalities – following the precedent of a few cities[84] – enacted climate protection legislation that included duties to install solar panels.[85] Baden-Württemberg (BW) has been a forerunner as it enacted the

80 § 72(3) No 2 GEG-2020: 'deren Nennleistung weniger als 4 Kilowatt oder mehr als 400 Kilowatt beträgt').

81 § 72(5) GEG reads: 'Absatz 4 Satz 1 ist nicht anzuwenden, wenn die Außerbetriebnahme einer mit Heizöl oder mit festem fossilem Brennstoff betriebenen Heizung und der Einbau einer neuen nicht mit Heizöl oder mit festem fossilem Brennstoff betriebenen Heizung im Einzelfall wegen besonderer Umstände durch einen unangemessenen Aufwand oder in sonstiger Weise zu einer unbilligen Härte führen.'

82 The consequence is, *inter alia*, that the legislator does not have to deal with technical facilities, such as the inclination of the roof or the availability of district heating.

83 This appears different compared to the Netherlands: there, the duty is limited by cost-effectiveness. The costs of realizing more renewable energy capacity must be recoverable within ten years. In that case, the owner is only obliged to realize as much renewable energy capacity as possible within that period.

84 Waiblingen was the first city to introduce a general PV-duty on rooftops in 2006; in Tübingen, this duty has been effective for newly built houses since 2018; in Amberg since 2019.

85 For an overview, see 'Kostenloser Solarstrom-Check in einer Minute' (*Enpal*) <www.enpal.de/magazin/solarpflicht> accessed 8 January 2024.

first State Climate Protection Act in 2013,[86] and reformed it in early 2023.[87] In 2013, the law was limited to concrete obligations to install solar panels for newly built buildings.[88] The recast Act, the *Klimaschutz- und Klimawandelanpassungsgesetz Baden-Württemberg* (KlimaG BW), adapts climate reduction targets to new timelines (2030/2040)[89] and sectors. Interesting is the reversal of duties: In principle, also the private residential house owner has a "solar duty" in case of a modernization, but they may request to be exempted from it (§ 23(3) KlimaG BW, see sub-section 4.2 below). Owners are under the duty to establish the fulfilment of their duties after no more than twelve months vis-à-vis the competent authority for energy network supervision (*Bundesnetzagentur*). Further concretizations are made in a respective regulation.[90] Hamburg was the first State to enact a duty on existing buildings (2020[91]) and decided on a revision in August 2023.[92] The Act triggers a solar-panel duty for existing buildings in the course of rooftop modernizations from 2027 onwards, in addition to such a duty for new buildings and large parking lots from 1.1.2024. Berlin enacted a similar Act in July 2021,[93] with the duty taking effect on 1.1.2023. Bavaria limited its solar-panel duty to non-residential buildings; similarly, Hesse and North Rhine-Westphalia only have solar-duties for State-owned buildings and parking lots. Lower Saxony has a duty for all 'commercial buildings' (including existing ones), so does Schleswig-Holstein, in addition to parking lots. Rhineland-Palatinate has limited the duty to new commercial buildings but extended the duty to parking lots.

86 Landtag Baden-Württemberg Drs. 17/943: § 8a *Klimaschutzgesetz Baden-Württemberg* (KlimaG BW; effective for non-residential houses from 1 January 2022 onwards, for residential houses from 1 Mei 2022 onwards).

87 See n 61, and BaWü-GBl. of 7 February 2023, 26.

88 Different timelines applied for residential (1 May 2022) and non-residential buildings (1 January 2022). The duty extended to parking lots with more than 35 parking spaces (1 January 2022), and rooftop renovations (1 January 2023).

89 The deadline for the new duty to install photovoltaic panels is defined in § 23(1) KlimaG BW: 'Die Pflicht zur Installation einer Photovoltaikanlage bei grundlegender Dachsanierung gilt nicht, wenn mit den Bauarbeiten vor dem 1. Januar 2023 begonnen worden ist'.

90 Verordnung des Umweltministeriums BaWü zu den Pflichten zur Installation von Photovoltaikanlagen auf Dach und Parkplatzflächen vom 11.10.2021 (*Photovoltaik-Pflicht-Verordnung*; PVPfVO) <https://um.baden-wuerttemberg.de/fileadmin/redaktion/m-um/intern/Dateien/Dokumente/4_Klima/Klimaschutz/Klimaschutzgesetz/Photovoltaikpflicht-Verordnung-Baden-Wuerttemberg-barrierefrei.pdf> accessed 8 January 2024, which only applies to non-residential buildings.

91 *Hamburger Klimaschutzgesetz* of 20 February 2020 (HmbGVBl. 2020, 148), amended by a regulation (HmbKliSchUmsVO); HmbGVBl. 2020, 711, which defines the 'suitable rooftop areas' in § 2.

92 *Klimaschutzstärkungsgesetz Hamburg* (HmbGVBl. 2023, 443).

93 *Solargesetz Berlin* of 15 July 2021 (GVBl. Berlin 2021, 837).

4. The Constitutional and Human-Rights Protection of Property against Obligations to Climate-Proof Buildings

Evidently, climate-proofing is property-protection sensitive, but the key is proportionality. Judicial control of property infringements by the German State is bifurcated. Access to justice against insufficient compensation for 'expropriations' (*Enteignungen*) is provided by civil courts (Art. 14(3) sentence 4 GG), restrictions to property and the legality of expropriations must be challenged before administrative courts. Invalidity of unlawful obligations must be invoked first, before compensation can be claimed.[94] The general building standards can only be submitted to judicial scrutiny indirectly, once an owner becomes the addressee of an administrative act.[95] As a matter of law, state liability under domestic law and under A1P1 run in parallel, but in practice adjudication under A1P1 has not played a big role.[96]

The first sub-section introduces the protection of property under German law (4.1). The second focuses on the principle of proportionality in general (4.2) and the third on the role of financial aspects within that principle in particular (4.3).

4.1 Property Protection under German Law

German constitutional law strictly distinguishes three categories of property restrictions:[97] (1) expropriation,[98] which is only legitimate with compensation, Art. 14(3) GG;[99] (2) regulation that amounts to a particularly heavy burden (*Sonder-*

94 BVerfG decision of 2 March 1999, NJW 1999, 2877, 2879; BVerfG decision of 15 July 1981, NJW 1982, 745, 747.

95 Art. 42 Administrative Procedural Acts embodies the liberal 'Theory of the Addresssee', meaning that only an addressee of state action has access to justice. The German procedural order is, in contrast to the French legal tradition, oriented towards a strong protection of the individual, not towards legality. Where standards are not in line with EU fundamental freedoms, they can be submitted for judicial control even if the standards were institutionally generated by private entities and the applicable law only referred to them, Case C-171/11 *Fra.bo v DVGW* [2012] ECLI:EU:C:2012:176.

96 And in cases where property cases were brought to the ECHR, the claim was usually not successful, see *Herrmann v Germany* App no 9300/07 (ECtHR, 26 June 2012).

97 Earlier spelled out by Christine Godt, '"Regulatory Property Rights": New Insights from Private Property Theory for the Takings Doctrine' (2017) 6 European Property Law Journal 158, at 173 and 181.

98 Defined as 'targeted taking for a defined purpose of the public good'.

99 While obligations to climate-proof existing buildings might be costly and significantly impair the building's value, they do not qualify as expropriation, because the same person remains the owner

opfer[100]), which has to be compensated; (3) finally, regulation that only requires compensation where the measure would otherwise be disproportionate.[101] Against the background of the international discussion about regulatory takings or indirect expropriation, one can argue that this specific category does not exist under German constitutional law. The German discussion unfolds under Art. 14(1) GG as the distinction between regulation without or with compensation. The yardstick is proportionality (see sub-sections 4.1 and 4.2 below). As indicated earlier, the German debate about climate-proofing buildings is not framed as a violation of property rights, but of proportionality. Thus, the public debate unfolds along the criteria that courts have hammered out for property restrictions to be reasonable and justified, thus proportionate. The proportionality principle is not a concept limited to the justification for property restrictions. It is a basic constitutional, cross-cutting principle, anchored in the rule of law principle (Art. 20 GG). It is this yardstick against which also property restrictions are measured (Art. 14(1) sentence 2 GG[102]): property restrictions demand a legal base (*Gesetzesvorbehalt*). Both the (abstract) legal base and its (concrete) application must be proportionate. The proportionality principle is to be followed by all branches of the State (the legislative, the executive, and the judiciary), only the scope of judicial review will vary. It will take the constitutional functions of each branch into account, the margin of discretion, but also the degree to which basic rights are infringed.[103] These considerations are coagulated in proportionality's three-step test: suitability, necessity, and proportionality *stricto sensu*.[104] To climate-proof buildings, three aspects are particularly relevant to proportionality. (1) Time: the addressee must have enough time to ad-

and the building can still be used for the same purpose after realizing the mandatory adjustments to the building.

100 The *Sonderopfertheorie* was spelled out by the Federal Supreme Court (*Bundesgerichtshof*) in 1952 as part of its jurisprudence about state liability (for more details, see Fritz Ossenbühl and Matthias Cornils, *Staatshaftungsrecht* (6th edn, C.H. Beck 2013) 325ff.

101 This is the ratioale of the so-called *Schweretheorie* as spelled out by the Supreme Administrative Court (Bundesverwaltungsgericht) which puts an emphasis on the material requirements set by the secondary act, and evaluates the 'proportionality'.

102 It reads: 'Content and limits [of property] are determined by the laws' in German: 'Inhalt und Schranken [des Eigentums] werden durch die Gesetze bestimmt'.

103 Then, the review is more thorough and the bar to motivate the measure is set higher.

104 BVerfG decision of 22 May 1990, BVerfGE 81, 310: (1) The measure must pursue a legitimate public policy and must be apt to achieve the pursued goal. (2) The measure must be necessary in the sense that no less intrusive measure is available to achieve the same goal. (3) The measure must be appropriate in the sense that the measure taken in particular case must be proportionate to the goal pursued. Thus, in fact, these criteria are equivalent to Art. 5 EU Treaty and the ones used by the European Court of Human Rights (ECtHR): (1) lawfulness, (2) a legitimate aim, and (3) a fair balance between the public interest in the control of use and the interests of the owner.

just, therefore transitional periods are key. (2) Social justice: less well-off citizens may not be 'overburdened'. (3) Availability of less intrusive means if they are equally effective in achieving the pursued policy goal. The last aspect is a central element of the proportionality test, not only for the CJEU in European law, but also for the constitutionality for German courts. As a matter of principle, informational tools and incentives deserve priority over command-and-control measures.

These three considerations have shaped German climate-proof building policies over time, and guided the design of regulations. At the beginning, only new buildings, commercial entities, and buildings owned by the were tackled. While technical standards may have been questioned as far as they can be attributed to public authority, no judicial procedure has become known which challenged the lawfulness of the general building norms. Two developments unfolded. On the one hand, standards have become progressively tightened. On the other hand, new trigger points such as refurbishment, renovations and, most recently, the transfer of title activated the obligation to comply with modern standards (see sub-section 4.2 below). Yet, private homes remained exempt until most recently, understood as an expression of social justice,[105] under federal[106] and State laws.[107] Subsidies were the central policy tool to incentivize voluntary modernization.

4.2 Proportionality of Obligations to Climate-Proof Buildings

Suitability and Necessity

The necessity test, which scrutinizes possible alternatives with a less intrusive impact on freedoms is the core of proportionality. Typically, incentives, information provision, and private standardization are perceived as less intrusive.

In Germany, technical standardization for energy efficiency has a long history (see sub-section 2.3 above); they are legally non-binding but made binding by subsidy contracts. As to concrete public law obligations, Germany on the federal level had no debate about a duty to connect to the district heating system. Municipal district heating was limited to few municipalities (see sub-section 2.4 above). However, the German *Bundestag* found the individual duty to employ 65 % renewable

105 Encapsulated in the formula of the protection of the 'old lady's home', who would be overburdened if the law required her to replace the heating system.

106 In Germany, so-called protected assets such as the family home are protected by law (§ 90 of the Social Security Code SGB XII).

107 cf, for instance, the duties to install solar panels in Baden-Württemberg (n 40) see sub-sections 2.4 and 3.3.

heating energy, in the media discussed as a duty to install a heat pump, only proportionate and, in particular, necessary once the municipal district heating planning is finalized. The rationale is that (private) investments into individual heating systems should not be in vain. If a less expensive alternative is available, the obligation to individually produce heat would not be proportionate. This reasoning has two consequences. Municipalities will become obliged to decide about municipal district heating plans,[108] which leaves municipalities the option to decide against this form of energy supply though. The new § 71b GEG will, in most of the cases, most likely equal an obligation to install a renewable energy-based heating system in the future (in many cases a heat pump).

Proportionality stricto sensu *in general*

The proportionality test *stricto sensu* requires – from all branches of government – the scrutiny of a fair balance of the case-specific obligation in relation to its aim within a specific context. Whereas mere incentives and substitutes come under the umbrella of the necessity test, proportionality *stricto sensu* may weigh the measure against adaptation times, return on investment by energy savings, available financial schemes, the respect for physical characteristics,[109] the uses of the building, and the specific situation of the owner (specifically, age, finance, education and duration and intensity of construction works).

The most important aspect appears to be the adaptation time, coupled with continuously growing standards, which mirror the CO_2 reduction goals committed to on the EU and the international level. In fact, if coupled to the next transfer of title, the duty will only directly bind the next owner. By this legal technique, only the general housing market is affected, but no single owner will legally have less than before. Owners of commercial, non-residential and, often, state-owned buildings[110] are subjected to stricter deadlines and standards, compared to private homes owners.[111] A tricky category are owners of commercial buildingss such as office buildings, large residential housing operators, and hotels. To them renovation is a

108 The Federal government presented a draft for municipal heat planning (Federal Heat Planing Act, BT-Drs. 20/8654).

109 For instance, for monuments, § 105 GEG.

110 To which German public law's property protection does not apply, not even to municipalities, § 55 GEG 2020. Regulation is in place for the 'public hand' to be 'a good example'.

111 See, *e.g.*, Baden-Württemberg: the commercial use affects (a) the timely applicability of the duty to install solar panels (compare § 8a(1) No 1 and No 2 KlimaschutzG BW as amended in 2021), (b) the applicability of the administrative regulation (PVPfV) of 11 Oktober 2021.

business case. As a matter of principle, costs are amortized over time, and energy savings help to have returns on investments. Therefore, the return has become part of proportionality concerns.[112] Yet, for rental buildings, it is a social question, how much and in which timeframes landlords are allowed to pass on the costs to tenants (see sub-section 4.3.3 below).

Available subsidies for owners, as a means for proportionate balancing, only play a role for private homeowners and only came into sight rather recently with the debate about the duty to replace the heating system. Prior, financial schemes were conceptualized as incentives (see sub-sections 3.2 and 4.1 above). And, in the tradition of constitutional protection as freedom and autonomous choices,[113] those considerations have been primarily discussed under suitability. Yet, under the pressure of evident climate change, the financial support shifted from an incentive, which renders the duty unnecessary and thus disproportionate, to a measure that renders the hardship proportionate in the individual case. As explained above, where legislative hardship results in non-enforcement in practice, the legislator will re-define what hardship may mean. The financial aspects are discussed in sub-section 4.3 below.

Exceptions are another expression of balancing, for example where cost-effective renovation or the grid connection is impossible or disproportionate. Technically, exceptions can be generally applicable, depending on the specific application by the competent authority or depending on an application to be exempted by the addressee.[114] The law of Hamburg imposes a duty that does not apply to small buildings, buildings covered from the sun, and – limited to construction works started before 2.1.2023 – when the cost ratio is above 70 % of the PV costs (defined as 'economic reasonableness' in § 4(2) of the amending regulation to the Hamburg Climate Protection Act).[115] The duty also lapses where the owner faces severe tax disadvan-

112 The duty under § 47(4) GEG does not emerge if 'für eine Nachrüstung erforderlichen Aufwendungen durch die eintretenden Einsparungen *nicht innerhalb angemessener Frist erwirtschaftet* werden können'. 'Angemessene Frist' is less than 'the lifetime of the windows and insulation'.

113 For example, BVerfG (First chamber) decision of 29 September 2022-1 BvR 2380 and 1 BvR 2449/21 (suitability).

114 § 55 GEG 2020 (exceptions).

115 § 4(2) HmbKliSchUmsVO reads: 'It is not economically justifiable within the meaning of Section 16 (4)(1)(c) HmbKliSchG to fulfill the obligations under Section 16(2) and (3) HmbKliSchG if:

1. the amortization period of the costs of the photovoltaic system calculated using the parameters specified in Annex 1 at the most suitable location on the building roof in terms of annual solar irradiation with the best possible orientation and inclination of the photovoltaic modules is more than 20 years;

2. for buildings with a gross floor area of up to 150 m2, the annual amount of solar irradiation on the photovoltaic modules at the most suitable location on the building roof in terms of this amount of irradiation with the best possible orientation and inclination of the photovoltaic modules due to the

tages. It is the owner of the building who must bring evidence that the duty does not apply (§ 5).

§ 7 of the Baden-Württemberg Solar-Duty Regulation (*Photovoltaik-Pflicht-Verordnung*) defines 'economic unreasonableness' and sets thresholds for the relation of the costs for the panels and the overall construction costs. If the ratio is exceeded, the building owner can request an exemption from the duty. It does not provide for a defence or a basis for a compensation claim. As to district heating systems, conditions for exemptions and unreasonableness are defined in the constitutive act.[116]

In principle, hardship clauses are designed as exceptions for unforeseeable circumstances.[117] Examples applicable in the context of climate-proofing buildings can be the health or age of the owner, or the prospect of demolition in the near future. Yet, the law must be as clear as possible. Under the test of proportionality *stricto sensu*, broadly framed legislation with unspecific safeguarding clauses are submitted to strict scrutiny. The compensation case must be reflected by the legislator, and – ideally, for the sake of public finance – be limited to unforeseeable, individual hardship.

4.3 The Financial Impact of the Obligation and Compensation for Owners

As discussed, available loans and subsidies can alleviate the financial burden and thus render a measure proportionate. Where financial support is available, com-

orientation, inclination and shading of the photovoltaic modules is more than 30 percent (%) lower than the highest annual amount of solar irradiation on an optimally oriented and unshaded photovoltaic system in the area of the Free and Hanseatic City of Hamburg;

3. for buildings where construction begins before January 2, 2023 and where roof renovation within the meaning of Section 16 (3) HmbKliSchG begins after January 1, 2025, the share of other system costs that would be necessary to meet the obligation exceeds 70 percent of the costs of the photovoltaic system;

4. obligated parties would experience considerable tax disadvantages in relation to their other business activities if a photovoltaic system were installed on their building and third parties are not prepared to install and operate a photovoltaic system instead of the obligated parties.'

116 *E.g.*, *Fernwärmesatzung Rostock* of 27 February 2021; *Fernwärmesatzung Tübingen Güterbahnhof* of 17 February 2014. *Fernwärmesatzung Stadt Schleswig* of 29 June 2009 (<www.schleswig.de/media/custom/3075_220_1.PDF?1527840635> accessed 8 January 2024.

117 Hardship clauses are exceptions, for example under § 49(3) of the Lower Saxony Building Code (NdsBauO) or § 1568 BGB.

pensation is precluded.[118] *Vice versa*, where subsidies are insufficient, compensation might be possible. Yet, in the context of energy-saving investments, cost-effectiveness is another argument that plays into the balance exercise of proportionality. The argument may block compensation (sub-section 4.3.1), be a condition for compensation (4.3.2), or require substantiation, such as in the case of landlords (4.3.3).

4.3.1 No Compensation for Cost-Effective Adjustments

Renovations can increase the value of the buildings and/or be compensated by energy savings. Those gains must be considered in the equation. Therefore, regulations categorize cost-effectiveness, for private homeowners and for commercial owners. Commercial buildings have a relatively high energy demand, rendering investments in energy efficiency generally cost-effective. By contrast, energy performance standards do not apply to buildings with a small energy demand, such as buildings with agricultural functions.[119] Where expenses exceed the maximum amount of energy savings, a disproportionate burden can emerge. As a rule of thumb, measures such as insulation or the installation of solar panels will generally be cost-effective. By contrast, the assumption is inverse for the (premature) replacement of heating systems. This replacement is expected to be cost-effective only if taxes and energy costs rise. Where the expenses cannot be recovered fully, owners can limit adjustments to those that can be earned back within a set period, such as ten years.[120] Beyond that, disproportionate hardships might emerge. However, these again can be buffered by subsidies and loans.[121] In practice, more important than economic reasonings are timeframes that allow citizens to get prepared in due time.

118 BVerfG decision of 15 July 1981, BVerfGE 58, 300.

119 § 2 II Federal Buildings Energy Act, Exceptions for agricultural buildings according to § 2(2) No 9 GEG.

120 These calculations are considered to be extrapolated predictions, not hard yardsticks for reasonableness. Thus, where lower returns occur, no legal remedy will be available (regardless of any limitation periods).

121 Subsidies are capped at a maximum of 70 % of the costs. Recently, a new risk emerged: these funds must be appropriately endowed. Journalistic evidence suggests that this is often not the case. Some programmes were exhausted two hours after opening. In those situations, funds are reduced to incentives only, but cannot cushion economic distress to render an otherwise 'disproportionate' burden 'proportional', see Julia Löhr, 'Die Politik setzt falsche Anreize' *Frankfurter Allgemeine Zeitung* (23 October 2023) 15.

4.3.2 Compensation for Inevitable Losses

Yet, even where financial burdens are caused by regulation, compensation is not always warranted. Democratically legitimized regulation may define the social obligations of property. As indicated earlier, compensation is only due when the owner faces a specific sacrifice (*Sonderopfer*). In this regard, the distinction between general regulations and administrative decisions re-emerges. As a matter of principle, the State may regulate in the public interest if everyone bears the same chances of being burdened to the same extent. In contrast, when an individual suffers individual and excessive burdens, then equality demands compensation.

The line is difficult to draw and the case law is highly case-specific. It shows that property as a central societal institution is always exposed to regulation.[122] Yet, where specificities, such as geographic differences are not duly considered,[123] or previous particularly high investments in good faith of the current legal situation create a hardship that goes beyond an acceptable burden,[124] then compensation is due.

4.3.3 Obligations for Landlords to Climate-Proof

Climate-proofing of residential rental buildings has economic and non-economic effects. Both are to be considered in the proportionality analysis.

In theory, energy efficiency can positively affect tenants and landlords. Tenants may benefit from lower energy bills, landlords from a value increase. Legally, the landlord is allowed to pass the investments costs on to the tenants by raising the rent (§ 559 BGB). In theory, decreasing energy bills might compensate the tenant. However, there are central differences between (highly regulated) residential and (less protective) commercial leases.

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122 According to Art. 14(1) Sentence 2 GG, the legislature has the task of determining the content and limits of property. BVerfG decision of 19 October 1993, BVerfGE 89, 237 (1 BvR 1620/92 – *Eigenbedarfskündigung* [cancellation of contract based on the owner's own needs]).

123 In the case of housing standards, geographical differences need to be taken into consideration (a policy aim pursued by the currently discussed revision of the building efficiency Directive).

124 A recent case as to 'qualified trust' is the phase-out of nuclear power plants decision by the Merkel administration in 2011, in reversal of the previous administration's extending the permits. BVerwG decision of 21 January 2021, ECLI:DE:BVerwG:2021:210121U7C4.19.0.

For residential housing, rent increases are capped (§ 559(1) BGB[125]), and efficiency rationales may not even affect the tenant's duty to tolerate.[126] The argument of energy savings may only qualify as one single element that influences the weighing exercise to determine a personal hardship (§ 555d(2) BGB).[127] No further negotiations between landlord and tenant are foreseen. Considering the capped rent increases, only the violation of the landlord's assets must be considered under the proportionality test *stricto sensu*. Extreme cases of mandated cost-ineffective adjustments may be justified by subsidies.

Residential rent control is not applicable to commercial, non-residential buildings leases.[128] In most cases, commercial leases are time-limited, and it is for this reason that tenants' rights are rather limited. However, if the landlord requires a higher pre-payment due to rising energy costs and the contract does not include a respective clause for dynamic increases, the landlord has no claim.[129]

In addition, residential tenants are more sensitive towards disturbances such as noise and dust, and may even have to leave their home temporarily. The renovating owner must respond to those needs (§ 559d BGB). The law reverses the burden of proof for violations of the duty to keep burdens limited to what is objectively necessary (§ 559d No 3 BGB).

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125 § 559(1) BGB: 'Hat der Vermieter Modernisierungsmaßnahmen im Sinne des § 555b Nummer 1, 3, 4, 5 oder 6 durchgeführt, so kann er die jährliche Miete um 8 Prozent der für die Wohnung aufgewendeten Kosten erhöhen.' § 559(3a): 'Bei Erhöhungen der jährlichen Miete nach Abs. 1 darf sich die monatliche Miete innerhalb von sechs Jahren, von Erhöhungen nach § 558 oder § 560 abgesehen, nicht um mehr als 3 Euro je Quadratmeter erhöhen. Beträgt die monatliche weniger als 7 Euro pro Quadratmeter Wohnfläche, darf sie sich abweichend von Satz 1 nicht mehr als 2 Euro je Quadratmeter Wohnfläche erhöhen.' Sub-s (3a) was inserted by Law of 18 December 2018 (BGBl. I, 2648), and has been in effect since 1 January 2019.

126 § 555d(2) sentence 2 BGB says: 'Die zu erwartende Mieterhöhung sowie die voraussichtlichen künftigen Betriebskosten bleiben bei der Abwägung im Rahmen der Duldungspflicht außer Betracht; sie sind nur nach § 559 Absatz 4 und 5 bei einer Mieterhöhung zu berücksichtigen.'

127 § 555d(2) sentence 1 BGB says: '(2) Eine Duldungspflicht nach Absatz 1 besteht nicht, wenn die Modernisierungsmaßnahme für den Mieter, seine Familie oder einen Angehörigen seines Haushalts eine Härte bedeuten würde, die auch unter Würdigung der berechtigten Interessen sowohl des Vermieters als auch anderer Mieter in dem Gebäude sowie von Belangen der Energieeinsparung und des Klimaschutzes nicht zu rechtfertigen ist.'

128 Contracts are governed by general private law (residential tenant protection is not applicable; see explicitly § 578 BGB) and commercial law.

129 § 560 BGB does not apply to commercial leases. BGH decision of 5 February 2014, Az. XII ZR 65/13.

5. Enforcement

Obligations under the Federal GEG are controlled by authorized district chimney sweeps, private entities traditionally endowed with public power to ensure the security of chimneys.[130] Since the regulation of 1978, the classic security control (gas explosion; toxic gas leakages) was amended by energy quality control. The chimney sweep has no power to close down the building, but may order a service provider to do what is needed to meet the standard.[131] In practice, the administrative fines will be the primary sanctions.[132] For example, energy pass related violations can run up to 10,000 Euros.[133]

State obligations to install solar panels (for heating or electricity generation) on new houses or for rooftop refurbishment are enforced by the responsible construction supervision agencies (regulated in state laws, for example § 31 of the 2023 Climate Protection Act of Baden-Württemberg).

As these are administrative laws, the opportunity principle applies. Where enforcement capacities are limited, the control measures can be prioritized, subject to the principle of proportionality. Where renovations cannot be performed for objective reasons, such as a lack of certified materials or installers, enforcement will not be lawful.[134] This lack was a recurring theme during the public debate about the Buildings Energy Act (GEG) in 2023. Proportionality was finally safeguarded by coupling of the replacement duty to municipal planning.

Offences through rent increases that aim at inducing tenants to cancel their rental contracts are penalized under § 6 Economic Penal Code,[135] and can be sanctioned with an administrative fine of up to 100,000 Euros.

130 § 97 GEG.

131 §§ 95, 97 GEG.

132 § 108 GEG.

133 § 108(2) GEG.

134 Regulations that cannot be implemented can be an error that leads to invalidity according to § 44 I VwVfG.

135 § 6 Economic Penal Code (*Wirtschaftsstrafgesetz*), entitled 'Durchführung einer baulichen Veränderung in missbräuchlicher Weise', reads: '(1) Any person who, with the intention of causing a tenant of residential property to terminate or cooperate in the termination of the tenancy, carries out or has carried out a structural alteration in such a way that it is likely to lead to considerable, objectively unnecessary burdens on the tenant shall be deemed to have committed an administrative offense. (2) The administrative offense may be punished with a fine of up to one hundred thousand euros'.

6. Concluding Observations

With the youth rebellion ('Fridays for Future', 'Extinction Rebellion') and the Russian war in Ukraine, the political pressure has risen to push the energy transition. We have been observing the following shifts: (1) Monetary support for obligations is not only discussed as an incentive, which transforms non-binding standards into contractual obligations, they have also become measures to secure proportionality. This indicates a gradual shift in the policy mix from incentives to compensated restrictions. (2) The reform of the GEG (2020) has changed the legal reference technique. Technical standards are not only referred to as 'state of the art' (good engineering practice in commercial and industrial sectors) and 'best available technique' (BAT, as in pollution control). The GEG directly links the standard with two consequences: the reference is 'static'; this technique might be evaluated by the courts under the necessity test as less intrusive compared to a dynamic standard that obliges an owner to meet the standard applicable at the time they start renovation. The standard is now directly binding by law. (3) Technological openness has evolved along the way. While the development for carbon neutrality was pushed by concrete duties under municipal and state regulation ("solar-panel duty"), once the Federal regulations have become stricter, technological openness became a growing issue. Besides the heat pump, other technologies came into sight such as geothermal energy, district heating and hydrogen. Whether municipalities and the State will recapture political influence (or become recipients of Federal planning commands) remains to be seen.