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# THE PHASE-OUT OF NUCLEAR POWER IN GERMANY

*Over the past 20 years, political attitudes in Germany towards the nuclear industry have been characterised less by consistency than by some major policy shifts, and the same can be said for the legislation that emerged from these attitudes. Although a number of these about-turns were predictable, others were less so because of their dependence on external factors.*

*What now looks likely to be the final[1] decision to phase out the civil use of nuclear power in Germany by 31 December 2022[2] raises a whole host of legal questions. In particular, the procedure followed to implement this phase-out provides ample material for debates on questions of constitutionality. Further matters of jurisprudential interest include the agreements concluded with the nuclear industry before the final phase-out decision was taken and the chronologically close political about-face themselves. Finally, a degree of legal uncertainty still surrounds not only the as-yet still unresolved issue of final repositories but also the resurgent debate over the source of funding for the dismantling of nuclear power plants. After providing an overview of the initial situation and the problems arising in connection with Germany's phasing out of the civil use of nuclear energy, this paper will place these issues in their proper legal context before evaluating them and highlighting the connection between these points of nuclear law and the current upheaval in German energy policy.*

**Key words:** nuclear power, Atomic Energy Act Germany, Fukushima power plant accident, German nuclear phase-out decision.

[1] Given that the last Conservative/Liberal (CDU/CSU and FDP) coalition also reneged on its commitment on nuclear power, a further policy reversal in this area is extremely unlikely even in the event of another change of government and would not gain the support of the majority of the public unless other sources of energy were affected by unexpected shortfalls in supply.

[2] The last nuclear power plants to be taken offline pursuant to section 7(1)(a)(6) *Atomgesetz* (AtG) (Atomic Energy Act) will be the reactors Isar 2, Emsland and Neckarwestheim 2.

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**A. Legal developments up to the 2011 phase-out decision**

Industrial policy considerations were a decisive factor driving the civil use of nuclear energy in Germany from the outset (Di Fabio, 1999, Radkau, 1983, Becker, 2011), even though the energy industry itself initially opposed the use of nuclear power to generate electricity (Radkau, 1983) on grounds of cost. The country's nuclear generation programme only got off the ground with the help of huge state subsidies and the introduction of a liability cap for energy producers (Becker, 2011). These initial problems are indicative of the fact that nuclear power has always aroused a great deal more political interest than other sources of energy,[4] and it should come as no surprise that the nuclear policy U-turns of the past 15 years have been primarily motivated by the differing energy agendas of the respective political camps in government.

***I. The first phase-out decision (2000) and the lifespan extensions (2010)***

In 2000, after decades of government funding for the nuclear industry (Funding for nuclear power was initially given first place among the stated aims of the Act) (Bundestag, 1959, Becker, 2011), the SPD/Green coalition in power at the time and the relevant energy companies reached an agreement on a gradual phasing out of the use of nuclear power, known as the "Nuclear Consensus I" (Federal Government, 2000). The Nuclear Phase Out Act (Bundestag, 2002) adopted in 2002 codified the implementation of this agreement. Key features of the amendments made at the time to the Atomic Energy Act included: first, a ban on new nuclear plants and, second, provisions limiting the residual electricity volumes of the 20 existing nuclear plants to a total of 2 623 TWh (Federal Government, 2000, Schneehain, 2005, Fillbrandt and Paul, 2012). The volumes were initially determined on an individual basis for each nuclear plant, but the option was given to transfer them in order to encourage early

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[4] It should, however, be noted that funding for the coal industry under the "Century Contract" and the switch to renewables under the Renewable Energies Act were also largely driven by state energy policy.

decommissioning of individual plants (De Witt, 2012, Mann, 2009). The last nuclear power plant was expected to go offline in 2021 on the basis of these provisions (Kloepfer and Bruch, 2011).

The "Energy Concept 2050" presented in September 2010 by the Conservative/ Liberal coalition, which subsequently came to power, referred to nuclear power as a "bridging technology" that could be used to reduce CO2 emissions on a transitional basis until such time as renewables provided the bulk of the country's energy (Federal Government, 2010, Fillbrandt and Paul, 2012). The 11th Amendment to the AtG accordingly increased the residual electricity volumes for the nuclear power plants, thus extending their lifespans by an average of 12 years (Bundestag, 2010). This amendment, known as the "Nuclear Consensus II" (Federal Ministry for Economic Affairs and Energy, 2010), was again preceded by negotiations with the energy industry. In a draft paper (the "Development Fund Agreement"), the nuclear industry and the Federal Government reached an arrangement that some of the additional revenues resulting from these lifespan extensions should go towards an "Energy and Climate Fund" (The Fund was set up by the Act on the Creation of a Special Energy and Climate Fund of 8 December 2010, BGBl 2010 I, p. 1807, later amended by Article 1 of the Act of 29 July 2011, BGBl 2011 I, p. 1702). The Federal Government also introduced a nuclear fuel tax (Bundestag, 2010), even though the parties had failed to reach a final agreement on this issue.[5] The 12th Amendment to the AtG (Bundestag, 2010) tightened up safety procedures for nuclear power plants in view of the length of time they had been in operation.[6]

***II. The legal problems posed by "done deal" legislation***

Negotiations therefore took place between the Federal Government and the energy industry in advance of both the "first" phase-out decision taken by the SPD/Green coalition in 2000 and the life extensions adopted by the Conservative/Liberal coalition in 2010. In each case, the Bundestag (the lower chamber of the German Parliament) was involved only after an agreement had been reached, and its role was limited to adopting parliamentary acts to lend legislative force to the substance of these agreements. From a legal point of view, this begs the question of why the concerned governments obtained prior consent from the energy industry, and whether "done deal" legislation of this kind can be reconciled in any way with rule-of-law principles.

The answer to the first question differs according to the case being discussed. Back in 2000, the big four energy suppliers still generated over 80% of Germany's electricity, and so a sustainable energy policy could be developed

[5] See the provisions of section 2 of the Development Funds Agreement, which provide for a reduction in funding if a nuclear fuel tax or similar tax exceeding an annual sum of EUR 2.3 billion is levied.

[6] For very informative points on the effectiveness of these directives in relation to the actual greater need for safety improvements and the risk associated in particular with older nuclear power plants, see Renneberg, W. (2011). *Laufzeitverlängerung und nukleare Sicherheit – zum rechtlichen und technischen Zusammenhang von 11. und 12. AtG Novelle* [Lifespan extensions and nuclear safety – on the legal and technical context of the 11th and 12th Amendments to the AtG]. ZNER. Vol. 15. Ponte Press Verlag, Bochum. p. 106 et seq.

only in co-operation with these companies rather than in opposition to them. The Federal Government was keen to avoid the avalanche of appeals which the energy providers would otherwise have lodged in response to the planned phase-out of nuclear power. A consensus was also intended to bridge the deep divisions within German society over the issue of nuclear power. By way of contrast, the life extensions for currently operational nuclear power plants granted under the second Nuclear Consensus in 2010 were, on the whole, good news for the energy providers thanks to the additional revenues they could expect to receive from power plants which, in most cases, had already been written off the balance sheet, regardless of the fact that some of these revenues would be siphoned off by the Federal Government to fund the development of renewables. The Nuclear Consensus II thus essentially consisted of little more than a *quid pro quo* for the lifespan extensions.

Doubts about the compatibility of this approach with the dictates that the rule of law stems from the principle of democracy (Article 20(1) and (2) of the Basic Law (*Grundgesetz*) (GG)) and the separation of power (GG Article 20(2) sentence 2). In order to ensure that public authority emanates from the people as a principle of democracy, the people must be able to endorse or reject particular policies in elections and referenda, and speeches held for and against the policies in Parliament must make it clear who is responsible for specific political decisions so that this right can be exercised effectively. Every citizen must also be granted an equal opportunity to influence political decisions. Prior arrangements with parties likely to be affected by a future piece of legislation place these parties in a privileged position compared to average citizens who are unable to influence specific legal provisions (Kloepfer, 2012, Sauer, 2004). Holding these negotiations behind closed doors also results in a lack of transparency over political positions, and this is particularly true in cases where the Federal Government presents Parliament with a delicately balanced set of regulations that has emerged from negotiations, in order for them to be made into law with as few amendments as possible. This significantly curtails Parliament's constitutionally guaranteed power of discretion (Schorkopf, 2000), as well as infringes on the "theory of essentiality" and violates the principle of the separation of power (Morlok, 2003, Sauer, 2004).

Each government took steps to avoid these accusations of unconstitutionality by painstakingly ensuring that the agreements with the nuclear power plant operators could not be deemed legally binding contracts (Schorkopf, 2000, Hellfahrt, 2003, Schoch, 2005; for a different view, see Frenz, 2002) which refers to a binding obligation on the grounds of the detail and accuracy of the agreement, the way it was presented to the public and the political confidence established on this basis.), since an unamended contractual agreement made into law by the parliamentary majorities backing the Government would have been problematic for the aforesaid constitutional reasons. Criticism on grounds of unconstitutionality is accordingly unfounded if it is assumed that the outcome of the consensus falls under the heading

of "informal state action" (Langenfeld, 2000, Schorkopf, 2000) and that Parliament was theoretically able to amend the details of the agreement when making it law.

**B. The 2011 "nuclear phase-out"**

Only a few short months after Germany's nuclear power plants were granted life extensions, the same Conservative/Liberal coalition led by Chancellor Angela Merkel made an about-face on nuclear policy. In the aftermath of Japan's Fukushima Daiichi nuclear power plant accident on 11 March 2011, and in response to the public uncertainty fuelled by this disaster, the Federal Chancellor announced an initial "moratorium" on 14 March 2011. This moratorium involved a three-month suspension of operation of Germany's seven oldest nuclear power plants[7] and the permanent decommissioning of the Krümmel plant, which had already been taken offline. The Reactor Safety Committee was also tasked by the Federal Government with carrying out a comprehensive safety assessment of all of the country's 17 nuclear power plants (CDU/CSU and FDP groups, 2011). At around the same time, the Ethics Committee led by the former federal environment minister, Prof. Dr. Klaus Töpfer, delivered an energy strategy for the Federal Republic of Germany ("A Safe Energy Supply") that gave absolute priority to the issue of nuclear safety (Ziehm, 2012). This strategy formed the basis for the 13th Amendment to the AtG (Bundestag, 2011) adopted on 6 June 2011, which rescinded the previous increases in residual electricity volumes, permanently decommissioned the nuclear power plants shut down under the moratorium and set a date for the final shutdown of each of the nine remaining power plants[8].

The plant operators E.ON and RWE, and later also Vattenfall, responded by lodging appeals with the Federal Constitutional Court.[9] Vattenfall also sought recourse from the Washington-based International Centre for Settlement of Investment Disputes.[10] The legality of the moratorium imposed in March 2011 has been challenged, and doubts have been raised regarding the future applicability of the Energy and Climate Fund Act. These legal issues will be examined below.

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[7] The reactors in question were Neckarwestheim I, Philllipsburg I, Biblis A and B, Isar I, Unterweser and Brunsbüttel, all of which were commissioned before 1980.

[8] Compare AtG section 7(1a) in conjunction with Annex 3 Column 2.

[9] By way of contrast, the power plant operator EnBW Energie Baden-Württemberg AG (EnBW) cannot cite the infringement of fundamental rights and is thus not entitled to lodge a constitutional appeal with the Federal Constitutional Court due to the fact that it is now a fully state-owned company.

[10] There is some controversy over the issue of whether Vattenfall is entitled to lodge an appeal with the Federal Constitutional Court as a foreign legal person, given that its parent company is fully owned by the Swedish State. In this respect, see Kloepfer, M. (2011), "13. *Atomgesetznovelle und Grundrechte*" (13th Amendment to the Atomic Energy Act and Fundamental Rights) in *Deutsches Verwaltungsblatt* (DVBl.), Vol. 126, Heymanns Verlag, Cologne, p. 1439; Schneehain, A. W. (2005), *supra* note 8, p. 177; or, for an alternative view, see Bruch, D. and H. Greve (2011), "*Atomausstieg 2011 als Verletzung der Grundrechte der Kraftwerksbetreiber?*" (The 2011 nuclear phase-out as an infringement of the fundamental rights of the power plant operators?), DÖV, Vol. 64, W. Kohlhammer GmbH, Stuttgart, p. 794 (796); Wallrabenstein, A. (2011), "*Die Verfassungsmäßigkeit des jüngsten Atomausstiegs*" (The constitutionality of the latest nuclear phase-out) in *Humboldt Forum Recht [HFR]*, Vol. 11, available at: www.humboldt-forum-recht.de, p. 113. For similar conclusions, see also Ziehm, C. (2012), *supra* note 22, p. 222.

***I. Underlying factors***

The Fukushima Daiichi disaster was undoubtedly the de facto trigger for the decision to rescind the life extensions, which had only been recently granted. According to the explanatory statement for the 13th Amendment to the Atomic Energy Act: "Despite the tragic events in Japan, considerations relating to security of supply, climate protection and the availability of reasonably priced energy mean that it is not yet possible to stop using nuclear power immediately and completely. At the same time, however, the events in Japan mean that the risks associated with nuclear power must be reassessed." (CDU/CSU and FDP groups, 2011 (draft).

This paper is unable to assess the extent to which the events in Japan did in fact alter the safety profile of German nuclear power plants, and whether it was in fact Fukushima that caused the Federal Government to reassess the situation and revise its opinion, or whether this decision was instead made with one eye on the forthcoming electoral campaign, as supposed by many.[11] What can be stated with a degree of certainty is that a substantial majority of Germans were opposed to the continued use of nuclear power in Germany in the immediate aftermath of the Fukushima disaster (Tagesschau.de, 2011). In the opinion of the Federal Government and the Ethics Committee, an immediate phase-out was incompatible with the three basic axioms of German energy supply, namely: security of supply, appropriate pricing and climate protection (Ethics Committee, 17/6070). Detailed preparations were therefore made for an "energy revolution", which would allow the use of nuclear power to be phased out in the medium term. As well as a gradual phase-out of nuclear power, the package of measures adopted to implement this "energy revolution" provided for an even more ambitious use of electricity generated from renewables.

***II. The moratorium of March 2011***

A first step towards the phasing out of nuclear power was taken with the moratorium announced by Federal Chancellor Merkel on 14 March 2011. A number of minister-presidents of the federal states were consulted before the announcement,[12] but the Bundestag was not. The moratorium therefore raises a number of legal concerns that have been debated not only in expert commentary but also by the Higher Administrative Court in Kassel (Higher Administrative Court of Kassel, 2013) and, at second instance, the Federal Constitutional Court (Federal Administrative Court, 2013).

[11] This was at least the view held by the majority of Germans following the phase-out announcement. In a survey carried out by ARD-Deutschlandtrends on 9 June 2011, 57% of Germans stated that Federal Chancellor Merkel and her Government had decided to phase out nuclear power as a pre-election strategy. URL www.tagesschau.de/inland/deutschlandtrend1342.html.

[12] These were the minister-presidents for Bavaria, Schleswig-Holstein, Baden-Württemberg, Hessen and Lower Saxony; see the statements made at the Federal Government press conference on 15 March 2011. URL: www.bundesregierung.de/ContentArchiv/DE/Mitschrift/Pressekonferenzen/2011/03/2011-03-15-statement-nutzung-kernenergie.html.

*1. Background information*

The Federal Government's announcement indicated that the recently adopted statutory lifespan extensions would be suspended under the moratorium and that the oldest nuclear power plants would consequently have to be taken offline. A few days later, AtG section 19(3), sentence 2, No. 3, was cited as the legal basis for this (at the time temporary) decommissioning order, and, on the orders of the Federal Ministry of the Environment pursuant to GG Article 85(3), the competent federal state ministries issued operating bans on this basis to the nuclear power plants concerned.[13] All of the plant operators complied with these decommissioning orders.

*2. Legal considerations*

Questions can, however, be raised about the very idea behind the moratorium. The announcement by the Federal Chancellor made it clear that the life extensions granted to German nuclear power plants under the law adopted on 8 December 2010 would be rescinded by the moratorium (Bundeskanzlerin.de, 2011), and the Federal Government believed that this would result in the seven oldest nuclear power plants being forced to stop operating on the basis of the previously adopted provisions on lifespans, given that they would have used up all of their residual electricity volumes (Kloepfer, 2012, Kloepfer and Bruch, 2011). In fact, however, all of the power plants except for Neckarwestheim I would have had sufficient residual electricity volumes to continue operating, meaning that the power plants could still have remained online under the regulations previously adopted by the Conservative/Green coalition (Kloepfer, 2012). On its own, therefore, the "disapplication" of the formerly adopted 11th Amendment to the AtG would not have delivered the desired consequences in law.

The moratorium as a first step towards the phasing out of nuclear power was furthermore manifestly unconstitutional. The mere "disapplication" of the 11th Amendment to the Nuclear Act by the executive violates the principle of the primacy of law (GG Article 20(3)) (Kloepfer, see above), since a formally adopted parliamentary law cannot be annulled by means of a simple decree, let alone a mere declaration of political intent by the Federal Government, at the very least as a basic principle of the separation of powers (Ewer and Behnsen, 2011,

[13] See Rebentisch, M. (2011) "*Kraftwerks-Moratorium versus Rechtsstaat*" (Power plant moratorium versus the rule of law), NVwZ, Vol. 15, C.H. Beck Verlag, Munich, p. 533; according to Ewer, W. and A. Behnsen (2011), "*Das 'Atom-Moratorium' der Bundesregierung und das geltende Atomrecht*" (The "nuclear moratorium" of the Federal Government and the applicable nuclear law), *Neue Juristische Wochenschrift* (NJW), Vol. 64, C.H. Beck Verlag, Munich, p. 1183, instructions were not issued by the Federal Environment Ministry; instead, a consensus was negotiated between the Federal Chancellor and the minister-presidents. In its ruling, the Higher Administrative Court of Kassel assigned responsibility to the federal state authority on the basis of AtG section 24 and section 2 sentence 1 No. 6 of the Ordinance on Responsibilities in the Area of Nuclear and Radiation Protection, irrespective of any instructions that may have been issued.

Kloepfer M. see above). One of the fundamental dictates of the democratic rule of law is the executive's compliance with the law (Huster, and Rux in Epping and Hillgruber, 2013, Sachs in Sachs, 2011, Ewer and Behnsen, 2011), and so it can be concluded without doubt that the Chancellor's announcement of a purportedly binding moratorium was unconstitutional (in the same vein, see also Kloepfer and Bruch, 2011, Papier, 2011).

Given that the legal basis for the temporary suspension was cited several days after the Federal Chancellor's announcement as AtG section 19(3), sentence 2, No. 3, and reference was made to the regulatory grounds for the measure (Schmale H., 2011), the decommissioning orders issued by the relevant state ministries on this legal basis could also be deemed unlawful in that they met neither the formal nor the *de facto* requirements of the aforesaid AtG section 19(3)[14]. The operator of the Biblis A and B plants was not consulted during the proceedings before the Kassel-based Higher Administrative Court on formal grounds, for example, even though such consultations were neither superfluous nor remediable (VGH Kassel, supra note 27, p. 369). The key substantive requirement imposed by AtG section 19(3) is the presence of a risk to life, health or property due to the ionising radiation. As a basic principle, the term "risk" is used in nuclear law, as in other legal contexts, to refer to a situation in which there is an adequate likelihood of objective harm to legal interests in the foreseeable future if no counter-measures are taken (Schoch in Schmidt-Aßmann and Schoch, 2008; Mann, 2012). Factual indications that a suspected risk may exist are sufficient to meet the definition of a risk (Federal Administrative Court, 1985; Schoch, 2008; Mann, 2012); in the same vein, see also the grounds put forward by the competent Federal Minister for the Environment and Reactor Safety on 18 March 2011, who regarded "the abstract prevention of risks and the mere suspicion of risk" as sufficient to establish that the requirements set out in AtG section 19(3) have been met.), but the risk must be concrete rather than abstract (VGH Kassel, supra note 27, p. 371; Kloepfer and Bruch, supra note 9, p. 386). The abstract "residual" risk invariably associated with a nuclear power plant has already been deemed to provide inadequate grounds for a decommissioning order pursuant to AtG section 19(3) in the Kalkar ruling by the Federal Constitutional Court (Federal Constitutional Court, 1978). Instead, specific systemic safety concerns must exist in relation to the power plant in question (BVerfGE, 1989, VGH Kassel, supra note 27, p. 371). The broad based "reassessment of risk" announced by the Federal Government in response to the "events in Japan" did not meet these

[14] VGH Kassel, *supra* note 27, p. 368, notes correctly that the real legal basis is AtG section 19(3) sentence 1 and that sentence 2 No 3 determines only the consequences in law. In formal terms, this means that the basis for the claim is no longer valid; in the same vein, see also Rebentisch, M. (2011), *supra* note 31, p. 534.

criteria (VGH Kassel, supra note 27, p. 373), since the fact that both earthquake and flood risks had already been accounted for in the permits granted to German power plants under the Atomic Energy Act (VGH Kassel, supra note 27, p. 373; Battis and Ruttloff, 2013) meant that the disaster in Japan provided no new grounds for a reassessment. The explanatory statement for the 11th Amendment to the AtG even made specific reference to the particularly high safety standards maintained by German nuclear power plants as justification for the life extensions granted thereby (VGH Kassel, see above), and the existence of a tangible suspected risk, let alone a risk within the meaning of AtG section 19(3), can accordingly be ruled out.

A final point worthy of criticism relates to the authorities' failure to exercise discretion in relation to the decommissioning order, the deliberations behind which were not explained in any way by the very brief and formulaic statement of grounds (Rebentisch, 2011, Battis and Ruttloff, 2013). Detailed explanations justifying the proportionality of the measure are particularly important in cases where plants are suspended on an *ultima ratio* basis (see above), and a simple reference to "the events in Japan" or the age of the plants neither demonstrates the need for the measure nor clarifies the considerations that led to it (VGH Kassel, supra note 27, p. 374).

*3. Interim conclusion concerning the moratorium of March 2011*

The manifest unconstitutionality of the moratorium announced by Federal Chancellor Merkel is compounded by the fact that the decommissioning orders issued by the federal ministries on the basis of AtG section 19(3) were unlawful in both procedural and substantive terms. The Kassel Higher Administrative Court consequently ruled in favour of RWE, the operator of Biblis A and B, in proceedings on this issue.

***III. The 13th Amendment to the Atomic Energy Act***

The 13th Amendment to the AtG adopted on 31 July 2011 had two main aims. One aim was to withdraw the additional residual electricity volumes that had been granted to the nuclear power plants only eight months earlier by means of the 11th Amendment to the AtG, and the other was to set the first ever binding dates for the closure of each individual power plant, in order to prevent operational life being extended by residual electricity volumes being transferred between the power plants with the result that some could operate beyond their "proper" remaining lifespan (for a detailed examination of this possibility, see Mann T., 2009, supra note 8, p. 17 et seq.). This brought about only a small change in the final phase-out date, however, since the last power blocks will now be shut down on 31 December 2022 at the latest (Isar 2, Emsland and Neckarwestheim 2) (see AtG section 7(1a) sentence 1 No 6), whereas the assumed shut-down date for the last nuclear power plant had been 2021 under the first phase-out strategy.

The power plant operators were opposed to this flip-flop on nuclear policy and brought various legal actions[15] and, as was the case when the first nuclear phase-out was announced,[16] the constitutionality of the measure was debated in the jurisprudential literature. The legal arguments mainly focused on issues relating to the legislative process and compatibility with the power plant operators' fundamental rights, with particular reference to GG Articles 14, 12 and 3.

The author developed already in 2015 his opinion, that it can be concluded that the 13th Amendment to the AtG does not infringe GG Articles 14, 12 or 3 and would stand up to examination by the Federal Constitutional Court and that a ruling in favour of the applicants would be unlikely on the basis of this considerations (Mann/ Sieven, 2015). With its ruling from February 2016 the Federal Constitutional Court found a differentiated answer (see section C. III 2)

**C. Developments after the 13th Amendment to the AtG**

In response to the 13th Amendment to the Atomic Energy Act, the power plant operators pursued various remedies against the nuclear phase-out measures and legislation in order to establish the unconstitutionality of the 13th Amendment to the AtG or to claim compensation.

In procedural terms, a distinction should be made between the remedies pursued by the operators against the 13th Amendment on a primary basis and the compensation claims lodged on a secondary basis.

***I. Constitutional appeals***

E.ON, RWE and Vattenfall lodged a constitutional appeal to the Federal Constitutional Court in Karlsruhe against the 13th Amendment to the AtG (BvR 2821/11, BvR 321/12, BvR1 456/12). This "route to Karlsruhe" was, if nothing else, financially beneficial for the companies. The decommissioning and dismantling reserves that the power plant operators are obliged to hold under commercial law (See section 249 of the Commercial Code (Handelsgesetzbuch) (HGB), according to which companies must build up reserves for future liabilities.) are not taxed and are freely available to the companies, which means that they resemble interest-free loans (Ziehm, 2012). The reactors that have already been taken offline cannot be

[15] More details on this issue are provided below.

[16] In this respect, see also Schneehain, A.W. (2005), *supra* note 7; Di Fabio, U. (1999), *supra* note 1; Hellfahrt, D. (2003), *supra* note 3; Langenfeld, C. (2000), *supra* note 20; Koch, H.J. (2000), "*Der Atomausstieg und der verfassungsrechtliche Schutz des Eigentums*" [The nuclear phase-out and the constitutional protection of property] in *Neue Juristische Wochenschrift* [*NJW*], Vol. 53, Verlag C. H. Beck, Munich, p. 1529 et seq.; Kruis, K. (2000), "*Der gesetzliche Ausstieg aus der Atomwirtschaft und das Gemeinwohl*" (The legislative phasing out of the nuclear industry and the common good), DVBl., Vol. 115, Carl Heymanns Verlag, Cologne, p. 441 et seq.; Rebentisch, M. (2002), "*Rechtliche Zweifelsfragen der gesetzlichen Beendigung der Kernenergienutzung durch Strommengenregelungen*" (Legal questions regarding the statutory discontinuation of the use of nuclear power on the basis of residual electricity volume regulations), *Festschrift für Jürgen F. Baur*, Nomos Verlag, Baden-Baden, p. 623 et seq.; Wagner, H. (2001), "*Atomkompromiss und Atomausstiegsgesetz*" (Nuclear compromise and the Nuclear Phase-Out Act), NVwZ, Vol. 20, Verlag C. H. Beck, Munich, p. 1089 et seq.

dismantled until the constitutional appeals have been settled, and so the companies will continue to dispose of these reserves until a ruling is handed down by the Federal Constitutional Court.

***II. Settlement proceedings before the ICSID***

The Swedish parent company Vattenfall AB also lodged an application for investment settlement proceedings against the Federal Republic of Germany on 20 December 2013 (ICSID Case No. ARB/12/12) with the International Centre for Settlement of Investment Disputes (ICSID) in Washington. The legal basis cited was Article 26 of the Energy Charter Treaty, which provides for the possibility of settlement proceedings between an investor and a contracting party (Energy Charter Treaty, 1994), Buntenbroich D. and M. Kaul, 2014). In its application for proceedings, Vattenfall submitted that the German nuclear phase-out and the resulting loss of its investments in the nuclear power plants it owns (Brunsbüttel and Krümmel) and in which it has shares (Brokdorf) represent an infringement of its investment rights (Buntenbroich and Kaul, 2014). No details have been made public regarding the exact provisions of the Energy Charter Treaty which Vattenfall claims have been infringed or the amount of compensation it has demanded[17]. The company's application is, however, generally believed to have a higher chance of success than the appeals before the Federal Constitutional Court, since an infringement of investor trust could conceivably have been committed on the basis of the criteria used in the settlement proceedings (Winter, 2013, Buntenbroich and Kaul, 2014).

***III. Compensation claims***

There are various aspects of the nuclear phase-out that can be used as a basis for the enforcement of compensation claims by the nuclear power plant operators.

*1. Moratorium*

In chronological terms, the first grounds for compensation arose in connection with the temporary operating bans imposed by the federal state environmental authorities under the three-month moratorium. After an appeal by the operator RWE was initially allowed in an interim ruling by the Higher Administrative Court of Kassel on the grounds that there was a genuine intention to pursue a subsequent compensation claim with a reasonable chance of success against the Federal State of Hessen through the civil courts (VGH Kassel, supra note 27, p. 634), the unconstitutionality of the moratorium in formal and material terms was established in two judgments by the Higher Administrative Court concerning the power plants Biblis A and B[18]. These judgments became legally binding after the Federal Administrative Court dismissed the appeals lodged by the Federal State of Hessen[19]. According to figures quoted in the press, RWE AG suffered losses of approximately EUR 187 million as a result

[17] Ibid. at p. 3, also for a more detailed examination of the issues relating to the transparency of proceedings before the ICSID.

[18] Ibid. at p. 367 et seq.

[19] Ibid. at p. 236 et seq.

of being forced to shut down Biblis A and B (Legal Tribune Online, 2013). In 2014, E.ON also lodged a claim for compensation of some EUR 250 million in connection with the unlawful decommissioning of its power plants Isar 1 and Unterweser (Frankfurter Allgemeine Zeitung, 2014.

Public liability claims (BGB section 839 in conjunction with GG Article 34) and claims of encroachment equivalent to expropriation are potential grounds for these compensation demands (VGH Kassel, supra note 27, p. 634 et seq., Battis and Rutloff, 2013), but the key criterion for both, as already established by the legally binding judgment of the Higher Administrative Court of Kassel, is the performance of an unlawful action by the state. As demonstrated above (section C. II) that the authorities did directly encroach upon the owners' right of use within the meaning of GG Article 14. The encroachment furthermore constitutes a "special sacrifice" for the power plant operators, such that encroachment equivalent to expropriation should provide suitable grounds for a compensation claim. Public liability claims can be enforced alongside claims relating to an encroachment equivalent to expropriation and would have a good chance of success, although they also require the establishment of fault. In spite of the fact that the Federal Environment Ministry issued "*de facto* instructions" to the federal state authorities in connection with the moratorium, the Higher Administrative Court of Kassel found that the Hessen-based nuclear regulatory body was responsible for the operating bans (VGH Kassel, supra note 27, p. 373 et seq.). Questions can therefore be raised regarding the extent to which the Federal State of Hessen would be indemnified by the Federal Government in the event that the Court ruled against it[20].

*2. 13th Amendment to the Atomic Energy Act*

As indicated above, the 13th Amendment to the AtG contains no provisions concerning financial compensation for the curtailment of remaining lifespans. Since the reductions cannot be deemed expropriation within the meaning of GG Article 14(3), any compensation demands would again be based on claims relating to an encroachment equivalent to expropriation or public liability claims (Wagner G., 2011), Durner W., U. Di Fabio and G. Wagner, 2011). As emerged from the analysis in section C. III above, however, the 13th Amendment to the AtG differs from the moratorium in that it can be deemed constitutional, and so any such claims would be dismissed due to the lack of any unlawful action by the authorities.

Irrespective of this fact, compensation claims have been pursued by E.ON, RWE and Vattenfall, whose management boards believed that legal action must be taken to avert the risk of the billion-euro losses which may result from the nuclear phase-out (Bruch D. and H. Greve, 2011), if only to discharge their duty of diligence under corporate law, namely the Stock Corporation Act, AktG (*Aktiengesetz*) section 93. E.ON and RWE have therefore lodged compensation claims of at least EUR 8 billion and EUR 2 billion respectively against the Federal

[20] The legal basis would be GG Article 104a(2) und (5) sentence 1.

Government (Spiegel-online, 2012), although these claims would be doomed to failure if the constitutional appeals against the 13th Amendment to the AtG are dismissed. It was expected that, in the event that the Federal Constitutional Court does find the 13th Amendment to the AtG unconstitutional, the legislator would have the option of adopting a compensation clause with retrospective effect in order to maintain the proportionality of the nuclear phase-out (Battis and Ruttloff, 2013), supra note 43, p. 824.).

In 2016 the Federal Constitutional Court came to a decision on the 13th Amendment to the AtG (Federal Constitutional Court, 2016). He did not complain about the intent of the legislator to phase-out of nuclear energy production, because the judges accepted a leeway in decision-making for the parliament. The accident in Fukushima was, in that perspective, a reason to strengthen the efforts in protecting the resident population and the environment by phasing-out of nuclear technology faster. But on the other hand, according to the Court, the 13th Amendment did violate property rights, as far as the energy supply companies had confidence in the guaranteed residual electricity volumes, which were given to them in 2010 ("frustrated investment"). The Federal Constitutional Court called upon the legislator to make a compensation law. This law was enacted in 2018 (Bundestag, 2018).

*3. Nuclear fuel tax*

By way of contrast, the nuclear power plant operators have a very good chance of successfully claiming back the nuclear fuel tax first imposed in 2010 by the 11th Amendment to the AtG, and appeals to this effect were lodged by E.ON, RWE and EnBW with the fiscal courts. Following rulings by the Fiscal Courts of Hamburg and Munich, which questioned the constitutionality of the nuclear fuel tax (Fiscal Court of Hamburg, 2011, Fiscal Court of Munich, 2011), the Fiscal Court of Hamburg finally deemed the tax unconstitutional and referred the case first to the Federal Constitutional Court and second to the ECJ on the grounds of possible infringements of EU law (Fiscal Court of Hamburg, 2013). The Fiscal Court of Hamburg granted the power plant operators interim relief in a number of rulings handed down on 11 April 2014 (Fiscal Court of Hamburg, 2014), since serious doubts had emerged as to the constitutionality and EU-law compliance of the Nuclear Fuel Tax Act. In the court's opinion, the nuclear fuel tax was not a tax on the consumption of nuclear fuels or electricity, but a stand-alone tax that levied the profits of the power plant operators, which meant that the Federal Government was wrong to cite its legislative competence in the area of taxes on consumption. The Fiscal Court of Hamburg furthermore regarded the tax as incompatible with EU law on the grounds that the principle of "output taxation" enshrined in the EU Energy Taxation Directive prohibits any extra taxation of energy products on top of the taxation of the electricity itself. This ruling issued in summary proceedings means that the power plant operators that lodged the appeal must be paid over EUR 2.2 billion in reimbursed nuclear fuel tax before the legal situation is finally resolved.

**D. Conclusions**

The legislative steps taken by Germany to implement its nuclear phase-out are, in many respects, a counter-example of good law-making, and the moratorium imposed by the Federal Government in 2011 represents a particularly blatant infringement of the Basic Law. By way of contrast, it can, in the author's opinion, be concluded that the 13th Act Amending the Atomic Energy Act, which laid down the legal framework for the nuclear phase-out, is constitutional since it balances the interests of the energy industry and consumers against public welfare concerns. Although there are various controversial points of detail, the legislator must ultimately be granted a broad prerogative on key issues where legal matters must take second place to political considerations. Having recognised the socially controversial nature of the debate on final repository sites, the Bundestag has also adopted a legal framework in the form of the Repository Site Act that safeguards greater public involvement while, at the same time, deliberately accepting the curtailment of legal redress for citizens brought about by aspects of the "planning by law" process.

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15. *Twelfth Amending Act of 8 December 2010 – Zwölftes Änderungsgesetz vom 8. Dezember 2010, BGBl* 2010 I, p. 1818 [in German].

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19. Schorkopf, F. (2000), *supra* note 22, 1112; Hellfahrt (2003), *supra* note 3, p. 102; Schoch, F. (2005). *Entformalisierung staatlichen Handelns" [The deformalisation of state action]*:

*Handbuch des Staatsrechts [Handbook of Constitutional Law]* / Isensee, J. and P. Kirchhof. Heidelberg : F. Müller Verlag [in German]; for a different view, see Frenz, W. (2002). Atomkonsens und Landesvollzugskompetenz [Nuclear consensus and the federal states' enforcement competencies]. NVwZ Vol. 21, p. 562 [in German], which refers to a binding obligation on the grounds of the detail and accuracy of the agreement, the way it was presented to the public and the political confidence established on this basis.

20. Langenfeld, C. (2000). Die rechtlichen Rahmenbedingungen für einen Ausstieg aus der friedlichen Nutzung der Kernenergie [The legal framework for a phase-out of the peaceful use of nuclear power]. *Die öffentliche Verwaltung (DÖV)*. Vol. 53, p. 936 [in German]; Schorkopf F. (2000), *supra* note 22, p. 1112.

21. Motion for a resolution by the CDU/CSU and FDP coalition of 16 March 2011 [Beschlussantrag der Koalition CDU / CSU und FDP vom 16. März 2011]. *BT-Drs*. 17/5048, p. 2 [in German].

22. Draft of the 13th Act Amending the Atomic Energy Act [Entwurf des 13. Gesetzes zur Änderung des Atomgesetzes]. *BT-Drs*. 17/6070, p. 5 [in German]; Ziehm, C. (2012). *Atomausstieg und Energiewende [The Nuclear Act and the Energy Revolution]. ZNER*. Vol. 16. P. 221 [in German].

23. 13th Act Amending the Atomic Energy Act of 31 July 2011 [13. Gesetz zur Änderung des Atomgesetzes vom 31. Juli 2011]. *BGBl*. 2011. I. P. 1704 [in German].

24. Draft law by the CDU/CSU and FDP groups [Gesetzesentwurf der CDU / CSU- und FDP-Gruppen]. BT-Drs. 17/6070, p. 5 [in German].

25. 54% of those questioned in the same survey believed that a phase-out by 2022 was a good idea, and 27% wanted the date to be even earlier. Retrieved from: www.tagesschau.de/inland/deutschlandtrend1342.html.

26. Final report of the Ethics Committee, A Safe Energy Supply, p. 18 et seq.; *BT-Drs*. 17/6070, *supra* note 28, p. 5.

27. The rulings of the Higher Administrative Court of Kassel of 27 February 2013 [Die Urteile des Oberverwaltungsgerichtshof Kassel 27. Februar 2013] – 6 C 824/11 and 6 C 825/11. *Zeitschrift für Umweltrecht (ZUR)*. 2013, 367 et seq. in the actions brought by RWE AG (as operator of the switched-off nuclear power plants Biblis A and B) against the Federal State of Hessen. See also the interim judgment of the Higher Administrative Court of Kassel of 4 July 2012 – 6 C 824/11.T, ZUR 2012, 632 et seq [in German].

28. Federal Administrative Court [BVerwG], ruling of 20 December 2013 – 7 B 18.13, ZUR 2014, p. 236 et seq [in German].

29. We will suspend the recently adopted lifespan extensions for German nuclear power plants. This is a moratorium, and it will last for three months. [Wir werden die kürzlich verabschiedeten Verlängerungen der Lebensdauer deutscher Kernkraftwerke aussetzen. Dies ist ein Moratorium, das drei Monate dauern wird]. *bundeskanzlerin.de*. Retrieved from: www.bundeskanzlerin.de/nn_683698/Content/DE/Mitschrift/Pressekonferenzen/2011/03/2011-03-14bkin-lagejapan-atomkraftwerke.html [in German].

30. Kloepfer, M. (2012), *supra* note 21, p. 45; Kloepfer, M. and D. Bruch (2011), *supra* note 12, p. 378.

31. Kloepfer, M. (2012), *supra* note 21, p. 45; Rebentisch, M. (2011), *supra* note 40, p. 536.

32. Ewer, W. and A. Behnsen (2011), *supra* note 40, p. 1183; Kloepfer, M. (2012), *supra* note 21, p. 45.

33. Huster, S. and J. Rux (2013). *Grundgesetz Kommentar* [Commentary on the Basic Law]: in Epping, V. and C. Hillgruber. Munich: C. H. Beck Verlag, [in German]; Sachs, M. (2011). *Grundgesetz Kommentar* [Commentary on the Basic Law]: in Sachs. Munich: C. H. Beck Verlag [in German]; Ewer, W. and A. Behnsen (2011), *supra* note 40, p. 1183.

34. Kloepfer, M. and D. Bruch (2011), *supra* note 12, p. 386; Papier, H. J., *Die Zeit* dated 17 March 2011.

35. This is a regulatory measure. This is not a deal, this is not an agreement, this is nothing of the sort. This is the application of the Atomic Energy Act in a new context." Schmale, H. (17 March 2011), Die Atomwendekanzlerin – Kein Mangel an Chuzpe [The nuclear revolution Chancellor – no shortage of chutzpah], *FR-Online*. Retrieved from: www.fr-online.de/politik/die-atomwende-kanzlerin-kein-mangel-an-chuzpe.1472596,8238158.html [in German].

36. VGH Kassel, *supra* note 38, p. 369.

37. Schoch, F. (2008). *Besonderes Verwaltungsrecht [Special administrative law]*: in Schmidt-Aßmann, E. and F. Schoch. Berlin: De Gruyter Recht [in German]; Mann, T. 2012. *Besonderes Verwaltungsrecht [Special Administrative Law]*: in Tetinger, P.J., W. Erbguth, and T. Mann. Heidelberg : C. F. Müller Verlag[in German].

38. Federal Administrative Court, judgment of 19 December 1985 – 7 C 65.82 – *Amtliche Entscheidungssammlung [Reports of Judgments and Decisions]* (BVerwGE), Vol. 72, p. 300 [in German]; Schoch, F. (2008), *supra* note 51, chapter 2, recital 95; Mann, T. (2012), *supra* note 51, recital 478; Rebentisch, M. (2011), *supra* note 40, p. 534; in the same vein, see also the grounds put forward by the competent Federal Minister for the Environment and Reactor Safety on 18 March 2011, who regarded "the abstract prevention of risks and the mere suspicion of risk" as sufficient to establish that the requirements set out in AtG section 19(3) have been met.

39. VGH Kassel, *supra* note 38, p. 371; Kloepfer, M. and D. Bruch, *supra* note 12, p. 386.

40. Federal Constitutional Court, ruling of 8 August 1978 – 2 BvL 8/77 – *Amtliche Entscheidungssammlung [Reports of Judgments and Decisions]* (BVerfGE), Vol. 49, p. 89 (142 f.) [in German].

41. BVerfGE, ruling of 5 April 1989 – 7 B 47/89, NVwZ 1989, p. 1170; VGH Kassel, *supra* note 38, p. 371.

42. VGH Kassel, *supra* note 38, p. 373.

43. VGH Kassel, *supra* note 38, p. 373; Battis, U. and M. Ruttloff (2013). Vom Moratorium zur Energiewende – und wieder zurück [From the moratorium to the energy revolution – and back again]. *NVwZ*. Vol. 32 p. 819 [in German].

44. See VGH Kassel, *supra* note 38, p. 373.

45. Rebentisch, M. (2011), *supra* note 40, p. 535; Battis, U. and M. Ruttloff (2013), *supra* note 57, p. 819.

46. VGH Kassel, *supra* note 38, p. 374.

47. Mann, T. (2009), *supra* note 11, p. 17 et seq.

48. In this respect, see also Schneehain, A.W. (2005), *supra* note 10; Di Fabio, U. (1999), *supra* note 3; Hellfahrt, D. (2003), *supra* note 3; Langenfeld, C. (2000), *supra* note 25; Koch H. J. (2000). Der Atomausstieg und der verfassungsrechtliche Schutz des Eigentums [The nuclear phase-out and the constitutional protection of property]. *Neue Juristische Wochenschrift [NJW] – New legal weekly*. Vol. 53, Verlag C. H. Beck, Munich, p. 1529 et seq. [in German]; Kruis, K. (2000). *Der gesetzliche Ausstieg aus der Atomwirtschaft und das Gemeinwohl" [The legislative phasing out of the nuclear industry and the common good]*. Gologne: Carl Heymanns Verlag [in German]; Rebentisch, M. (2002). Rechtliche Zweifelsfragen der gesetzlichen Beendigung der Kernenergienutzung durch Strommengenregelungen [Legal questions regarding the statutory discontinuation of the use of nuclear power on the basis of residual electricity volume regulations]. *Festschrift für Jürgen F. Baur*, Nomos Verlag, Baden-Baden, p. 623 et seq.'[in German]; Wagner, H. (2001). Atomkompromiss und Atomausstiegsgesetz [Nuclear compromise and the Nuclear Phase-Out Act]. *NVwZ*. Vol. 20, Verlag C. H. Beck, Munich, p. 1089 et seq. [in German].

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53. Buntenbroich, D. and M. Kaul (2014), *supra* note 157, p. 2.

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63. Battis, U. and M. Ruttloff (2013), *supra* note 57, p. 824.

64. Federal Constitutional Court ruling of 6 February 2016 – 1 BvR 2821/11, 1 BvR 321/12, 1; BvR 1456/12 –, BVerfGE, Vol. 143, p. 246.

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Proceedings are pending before the Federal Constitutional Court under case number 2 BvL 6/13 and before the ECJ under case number C 5/14 [in German].

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## ПОСТУПОВА ВІДМОВА ВІД ЯДЕРНОЇ ЕНЕРГЕТИКИ В НІМЕЧЧИНІ

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*У зв'язку з намірами Німеччини припинити цивільне використання ядерної енергетики виникає ціла низка правових питань, пошук відповідей на які потребує ретельного теоретичного обґрунтування.*

***Метою** дослідження є висвітлення законодавчих кроків, які вжила Німеччина для відмови від ядерної енергетики. Зокрема, стосовно аналізу прийнятих законодавчих актів на предмет відповідності Основному Закону ФРН.*

***Методи дослідження.** Методологічною основою дослідження є сукупність загальнонаукових та спеціально-юридичних методів і прийомів наукового пізнання. Їх застосування зумовлюється доцільністю системного підходу для досягнення єдності соціального змісту та форми. У роботі використані методи наукового пізнання, методи аналізу, синтезу, узагальнення, порівняння, абстракції.*

***Основні результати дослідження**. Державна програма в галузі ядерної енергетики країни передбачала величезні державні субсидії та запровадження суттєвих обмежень відповідальності виробників енергії. Прийнятий у 2002 році Закон про ядерне припинення запровадив не тільки заборону відкриття нових атомних електростанцій, а й ввів обмеження на залишкові обсяги електроенергії наявних атомних станцій, що мало на меті припинення роботи всіх атомних електростанцій до 2021 року. «Енергетична концепція 2050» підтримала діючий політичний рух, обґрунтовуючи це скороченням викидів CO2 на перехідній основі до тих пір, поки відновлювані джерела енергії забезпечують основну частину енергії країни.*

*Автором звернено окрему увагу на те, що зміни до Закону про атомну енергію не були сприйняті керівництвами електростанцій. Останні вживали різних засобів захисту проти застосованих заходів, а також намагались встановити неконституційність прийнятих змін до законодавства про припинення ядерної енергії і вимагати компенсації.*

***Висновки.** На думку автора, 13-й Закон про внесення змін до Закону про атомну енергію, який створює законодавчу базу для припинення ядерної енергетики, є конституційним, оскільки він врівноважує інтереси енергетичної галузі та споживачів послуг. Попри це, автор наголошує на існуванні правової невизначеності, зокрема, в контексті використання сховищ для відпрацьованого ядерного палива та джерел фінансування ліквідації атомних електростанцій.*

**Ключові слова:** ядерна енергетика, Закон про атомну енергію ФРН, аварія на електростанції Фукусіма, рішення про припинення ядерної енергетики Німеччини.