

Energy

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Germany's Energy Strategy between the EU Green Deal Targets and Economic Freedom

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Taking into consideration that the production and use of energy causes more than 75% of the EU's greenhouse gas emissions,¹ the Green Deal identified the decarbonisation of the EU's energy system as being critical to achieve carbon neutrality by 2050. In 10-year Integrated National Energy and Climate Plans, the EU Member states had to outline their strategies to contribute to this target. These strategies and legislation, at both EU and national level, have to keep a balance between an effective tackling of climate change and competition.

This paper aims to explore Germany's strategy to achieve a carbon-neutral energy market. In particular, measures adopted to increase energy efficiency and to expand the use of renewable energy sources will be discussed in light of the questions: how effectively do they incentivise players in the energy markets to behave in a climate friendly way; and to what extent is economic freedom, as a fundamental principle of competitive market structures, still guaranteed?

1. Green Deal targets and their relevance for the electricity sector

In 2019, the Green Deal was announced by the European Commission to achieve climate neutrality.² A roadmap stipulates instruments by which the Green Deal targets are to be achieved.³ Those instruments are to be found in the Regulation (EU) 2021/1119, the European Climate Law that establishes a "framework for the irreversible and gradual reduction of anthropogenic greenhouse gas emissions by sources and enhancement of removals by sinks

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1 European Commission, The European Green Deal, COM(2019) 640 final, p. 6.

2 European Commission, The European Green Deal, COM(2019) 640 final, p. 2.

3 European Commission, Annex to the Communication from the Commission, The European Green Deal, COM(2019) 640 final, p. 2.

regulated in Union law”⁴ This objective of climate neutrality is legally binding, as well as the target of a net domestic reduction in greenhouse gas emissions by at least 55 % (compared to 1990 levels) by 2030, as set out in Article 4 of the European Climate Law. To achieve the 2030 and 2050 objectives, the EU has adopted new legislation, as well as amendments to existing climate, energy and transport-related legislation, together called the “Fit for 55 package”. This legislative initiative aims to achieve 40 % of energy from renewable sources in the overall energy mix by 2030. Therefore, Member states now have to increase their national contributions set in their integrated national energy and climate plans in order to collectively achieve this target. In the building sector, the share of renewable energies should amount to at least 49% by 2030.

The energy sector, in particular electricity production, is of high relevance for the successful achievement of the Green Deal 2030 and 2050 targets. In regard to the emissions caused by the production and the use of electricity, which account for more than 75% of the EU’s greenhouse gas emissions,⁵ the Commission therefore aims to decarbonise the EU’s energy system to reach CO₂-neutrality. This will have an effect on the whole value chain of the electricity sector, which includes the production of electricity, the transmission and distribution of electricity, as well as its supply and consumption by the end-user. The primary energies used for electricity production heavily affect the greenhouse gas emissions caused by the energy system. Therefore, the achievement of the Green Deal targets requires prioritising the usage of renewable energies, such as wind, solar, geothermal energy, ambient energy, tide, ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas, and biogas⁶ over the use of fossil fuels, such as gas and coal. Furthermore, an improvement in energy efficiency will also have a positive effect on the reduction of greenhouse gas emissions. Energy efficiency is regarded as the ratio of output of performance, service, goods or energy, to input of energy⁷ and is thus relevant for all levels of the value chain. Current legislation aims to reduce end-consumption. To increase energy efficiency,

4 Art. 1 of the Regulation (EU) 2021/1119.

5 European Commission, The European Green Deal, COM(2019) 640 final, p. 6.

6 Art. 2 (1) of the Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources.

7 Art. 2 (4) of the Directive (EU) 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency.

final energy consumption⁸ at EU should be decreased by 36% and by 39% for primary energy consumption⁹ by 2030.

2. The potential dilemma between the achievement of Green Deal targets and competition

The constitutional objectives of the European Union are set out in Art. 3 of the Treaty on the European Union. These include the establishment of an internal market and “work[ing] for the sustainable development of Europe based on (...) a high level of protection and improvement of the quality of the environment”. The internal market is based on both market freedoms¹⁰ and competition.¹¹ The term “competition” has not been defined in legislation. This is supported by the idea that competition consists in a complex anthropological phenomenon, which is ultimately based on a “fundamental competition between people”.¹² Competition is of high legal value since it increases welfare.¹³ This results in price and innovation competition.¹⁴ Consumers and other market participants benefit from prices that are determined by the market mechanisms of supply and demand, as well as from innovation.¹⁵ Undistorted competition is characterised by the existence of a number of market players on both the demand and supply side, who enjoy economic freedom.¹⁶

To achieve the protection of the environment, which is an objective of the European Union under Art. 3 (3) TEU that is of equal value to the

8 Energy consumption by end-users.

9 Energy used for the production and supply of energy.

10 Art. 26 of the Treaty of the Functioning of the European Union.

11 Protocol (No 27) on the internal market and competition.

12 Dreher/Kulka, Wettbewerbs- und Kartellrecht, no. 5 and 6; Sosnitza, in: Münchner Kommentar, Grundlagen des Lauterkeitsrechts, no. 13; Köhler, in Köhler/Bornkamm/Feddersen, UWG Einl. no. 1.6; Beater, § 1 no. 4.

13 Säcker, in: Münchner Kommentar, Grdl. no. 1 and 100; Mestmäcker/Schweitzer, Wettbewerbsrecht, § 3 no. 53.

14 Säcker, in: Münchner Kommentar, Grdl. no. 100; Mestmäcker/Schweitzer, Wettbewerbsrecht, § 3 no. 15 et seq.

15 CJEU, C-277/20, 12 May 2022, no. 45 and 46; Säcker, in: Münchner Kommentar, Grdl. no. 4.

16 Leistner, in: Gloy/Loschelder/Danckwerts, Wettbewerbsrecht, § 4 no. 1; Sosnitza, in: Münchner Kommentar, Grundlagen des Lauterkeitsrechts, no. 16; Leistner, in: Gloy/Loschelder/Danckwerts, Wettbewerbsrecht, § 4 no. 21.

completion of the internal market,¹⁷ the legislator implements a variety of instruments, e.g. planning regulations as well as direct and indirect behavioural control instruments, which take the aforementioned principles into account. The implementation of instruments to achieve environmental protection is based on the economic concept of *homo economicus*, the person who acts exclusively economically. This is a simplified model, according to which people strive for the greatest possible benefit at the lowest possible cost.¹⁸ If the *homo economicus* is faced with the decision to undertake an environmentally protective action that entails costs or to undertake an action that is potentially harmful to the environment without incurring these costs, the decision will be to the detriment of the environment. In the past, without a corresponding legal framework, the environment was available as a free good from the perspective of *homo economicus*.¹⁹ However, as knowledge and evidence about climate change and the associated costs, including for individuals, advances, changes to the model may be forthcoming. At present, it can still be assumed that the market participants do not base their economic decisions on the foreseeable costs of climate change. The *homo economicus* is therefore unlikely to make his contribution to the achievement of climate neutrality in the EU by 2050.

The legislator thus adopts instruments to change the behaviour of the *homo economicus* for the achievement of the Green Deal targets. The instruments differ in their mode of action vis-à-vis the addressees. With the instruments of environmental planning, spatial environmental problems are dealt with in a planning manner, in which causal relationships are recorded and dangers to the environment are recognised at an early stage and prevented.²⁰ In this respect, environmental planning is characterised by the precautionary principle.²¹

Instruments of direct behavioural control are norms or measures that require a person to act.²² These take the form of prohibitions and obligations. Behaviour can also be enforced; violations are usually sanctioned. To this extent, direct instruments very effectively contribute to the achievement of the intended behaviour. The flip side of the coin, however, is that they limit

17 Scholz, Die Rechtfertigung von diskriminierenden umweltpolitischen Steuerungsinstrumenten, p. 220.

18 McKenzie/Tullock, *Homo oeconomicus, Ökonomische Dimensionen des Alltags*, 1984; Schünemann, ARSP 1986, p. 502; Zintl, *Analyse und Kritik* 11 (1989), p. 52.

19 Winter, GAIA 9 (2000) volume 3, p. 196.

20 Köck, in: Voßkuhle/Eifert/Möllers, *Grundlagen des Verwaltungsrechts*, § 37 no. 22.

21 Kloepfer, *Umweltrecht*, § 4 no. 22.

22 Kloepfer, *Umweltrecht*, § 5 no. 166.

the exercise of fundamental rights guaranteed by both European Union and German law, such as the freedom of action, freedom of occupation and freedom of property.

Instruments of indirect behavioural control²³ allow the addressee freedom of decision-making and are designed to steer his decision in the direction intended by the legislator and to motivate him to take this action. These include environmental information, warnings and recommendations. Financial incentives are set in a "positive" respect through financial subsidies; in a "negative" respect through possible payment obligations in the form of environmental levies, such as taxes, fees, contributions and special charges. A further instrument of indirect behavioural control consists of tradable certificates, such as emission allowances.²⁴ Indirect instruments leave full autonomy to the addressee and do not limit the exercise of fundamental rights on the one hand, albeit do not fully ensure the achievement of an intended behaviour, on the other. A degree of uncertainty for the achievement of goals exists.

3. Germany's energy strategy

This chapter outlines Germany's strategy to contribute to the achievement of climate neutrality of the EU by 2050 in the energy sector, in particular the aims as set out in its National Energy and Climate Plan. It explores how Germany generally incentivises participants in the energy markets to behave climate friendly and to which extent economic freedom is still guaranteed.

The Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action constitutes the legal basis for the national energy and climate plans. The final and current version of the German National Energy and Climate Plan (NECP) was adopted on 10 June 2020 in compliance with this Regulation.²⁵ According to the German NECP, at least 80

23 Franzius, *Die Herausbildung der Instrumente indirekter Verhaltenssteuerung im Umweltrecht der Bundesrepublik Deutschland*, p. 5 et seq.

24 Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a system for greenhouse gas emission allowance trading within the Union and amending Council Directive 96/61/EC, which is itself going to be amended: European Parliament, 2019-2024, Provisional Agreement resulting from interinstitutional negotiations, 8 February 2023.

25 *Integrierter Nationaler Energie- und Klimaplan* (online: https://www.bmwk.de/Redaktion/DE/Downloads/I/integrierter-nationaler-energie-klimaplan.pdf?__blob=publicationFile&v=1). Member states have to amend adopt integrated national energy and climate plans (NECPs).

percent of the electricity consumed in Germany is to be produced from renewable energies. After the phase-out of coal, the electricity supply in Germany is going to be greenhouse gas neutral. Furthermore, by 2030 a 65 % share of electricity consumption from renewable energy sources and a 30 % reduction in gross inland consumption, compared to 2008, should be achieved. Consequently, a climate neutral energy sector requires an implementation of instruments in the Renewable Energy Law and in the Energy Efficiency Law.

a) *Renewable Energy Law*

The renewable energy law is based on the Directive (EU) 2018/2001 on the promotion of energy from renewable sources at EU level and the German Renewable Energy Sources Act (Erneuerbare-Energien-Gesetz) at German level.

The Directive (EU) 2018/2001 sets out an EU-wide target of 32% for the usage of renewable energies in all sectors.²⁶ In the last two years, this target has been increased twice. First, in 2021, as part of the “Fit for 55-Package”, the Commission proposed a revision of the Directive which aimed to increase the share of renewables to 40% (up from 32%). In 2022, the Commission proposed an increase to 45% by 2030 to reduce the dependency on imports of primary energy sources and to achieve security of supply. In the end, this has led to a target for 2030 of at least 42.5%, aiming for 45%.²⁷ To achieve the EU-wide target, Member states can implement support schemes according to Art. 4 of the Directive (EU) 2018/2001:

*In order to reach or exceed the Union target (...) Member States may apply **support schemes**. Support schemes for electricity from renewable sources shall provide incentives for the integration of electricity from renewable sources in the electricity market in a **market-based and market-responsive** way, while avoiding unnecessary distortions of electricity markets as well as taking into account possible system integration costs and grid stability.*

The choice of the instruments is generally left to the Member states. Although the wording of Art. 4 gives preference to incentives, which are regarded as indirect instruments, the implementation of direct instruments is not prohibited under EU law. EU law, for instance, generally allows states to

²⁶ Art. 3 Directive (EU) 2018/2001.

²⁷ Council, Council and Parliament reach provisional deal on renewable energy directive (Press release) 30 March 2023 (online: <https://www.consilium.europa.eu/en/press/press-releases/2023/03/30/council-and-parliament-reach-provisional-deal-on-renewable-energy-directive/>).

oblige suppliers to have a certain proportion of electricity in their electricity mix which has been produced from renewable primary sources; or to oblige persons to install solar panels on the roofs of their houses or premises; or to prohibit the production of electricity from certain primary energy sources, such as coal, in compliance with primary EU law such as market freedoms and state aid rules.²⁸ In spite of the preference given to indirect instruments in Art. 4, the choice of indirect instruments has to take into account a market-based approach and it has to avoid unnecessary distortions of electricity markets. The European legislator thereby expresses the importance of the functioning of the internal market, including competition.

For the German electricity sector and its transition towards the use of renewable energy sources, the German Renewable Energy Sources Act is the governing piece of legislation. It contains statutory obligations between the operator of a plant based on renewable energies and the relevant grid operator. These include both grid-related and financial instruments. The integration of plants into the network is ensured by obliging grid operators to connect them to the grid of shortest linear distance²⁹ and to distribute and transmit the electricity fed into the grid.³⁰ From the perspective of the grid operator, this constitutes a direct instrument. However, it leaves full discretion to the plant operators as an indirect instrument.

Whereas the German Renewables Act was based on feed-in tariffs as the only financial instrument, when it came into force more than twenty years ago, it now stipulates a variety of financial instruments dependent on the installed capacity. First, the plant operator, who directly markets the electricity, receives a market premium from the relevant grid operator under section 20 of the Renewables Act. The market premium is either stipulated by the Act itself³¹ or determined in a tender procedure.³² In these auctions, potential plant operators place their bids for support contracts.³³ Projects with the lowest prices are awarded contracts.³⁴ Second, feed-in tariffs are still a financial instrument, as set out by section 21, but generally limited to

28 Scholz, *Die Rechtfertigung von diskriminierenden umweltpolitischen Steuerungsinstrumenten*, p. 100 et seq.

29 § 8 German Renewables Act (Erneuerbare-Energien-Gesetz, EEG). In detail: Scholz in: Säcker/Steffens, *Berliner Kommentar zum Energierecht*, vol. 8, § 8 EEG.

30 § 11 German Renewables Act (Erneuerbare-Energien-Gesetz, EEG). In detail: Scholz in: Säcker/Steffens, *Berliner Kommentar zum Energierecht*, § 11 EEG.

31 §§ 40 to 49 German Renewables Act (Erneuerbare-Energien-Gesetz, EEG).

32 § 22 German Renewables Act (Erneuerbare-Energien-Gesetz, EEG).

33 § 30 German Renewables Act (Erneuerbare-Energien-Gesetz, EEG).

34 § 7 Verordnung zu den gemeinsamen Ausschreibungen für Windenergieanlagen an Land und Solaranlagen (Verordnung zu den gemeinsamen Ausschreibungen - GemAV).

plants with an installed capacity of 100 kilowatts. They guarantee long-term payments to plant operators at fixed rates for the electricity they generate. Feed-in tariffs and market premiums are generally above market prices and make renewable energy investment financially attractive. The rates depend on the technology type, the installed capacity and the year of installation. They are to be paid by the grid operator for a period of twenty years and thus ensure a predictable return on investment.³⁵ Third, plant operators are entitled to receive a so-called “tenant electricity surcharge” for electricity from solar installations on, at or in a residential building, insofar as it has been supplied by the installation operator for consumption by a third party or an end consumer.³⁶

These financial instruments in the Renewables Act contribute to the achievement of renewable targets in an indirect manner. With the limitation of feed-in tariffs to small installations, and the introduction of market premiums including price determination based on auctions, competitive elements are now an integral part of the German renewables support scheme.³⁷ This ensures a certain level competition, despite the existence of financial assistance which is regarded as market intervention. The achievement of the renewable targets depends on the investment decisions of private entities. A general obligation addressed to electricity producing companies to exclusively use renewable energies, and an obligation addressed to electricity supply companies to have a certain proportion of electricity in their mix, which has been produced from renewable sources, are not in place in Germany. Direct instruments exist in form of prohibitions addressed to producers of electricity to achieve the nuclear³⁸ and the future coal phase out.³⁹ These instruments create a demand for alternative primary energies, which include renewable energies.

In a number of states in Germany new commercial and residential buildings are now required to install and operate a solar-power system. This partly also applies to the roof renovation of existing buildings. In the state of Berlin, for instance, owners of non-public buildings with more than 50 square metres have to ensure that photovoltaic systems are installed on their

35 § 25 German Renewables Act (Erneuerbare-Energien-Gesetz, EEG).

36 §§ 19 and 21 German Renewables Act (Erneuerbare-Energien-Gesetz, EEG).

37 Steffens in: Säcker/Steffens, Berliner Kommentar zum Energierecht, Einl. EEG, no. 22.

38 § 7 of the Act on the Peaceful Use of Nuclear Energy and Protection against its Hazards (Act on the Peaceful Use of Nuclear Energy and Protection against its Hazards).

39 So far in § 40 of Act on the Reduction and Termination of Coal-fired Power Generation (Gesetz zur Reduzierung und zur Beendigung der Kohleverstromung).

buildings.⁴⁰ The legal framework varies in the individual federal states. At federal level, the legislator has not yet taken action, although according to the present government's coalition agreement, all suitable roofs are going to be used for solar energy in the future.⁴¹ This is intended to become mandatory for new commercial buildings and also apply to new private buildings.

b) Energy Efficiency Law

Legislation at both EU and national level also aims to increase energy efficiency with the objective to reduce CO₂ emissions. The value chain in the energy sector is generally affected by energy efficiency law at the levels of production, supply and consumption. The current EU Energy Efficiency Law originates in the Directive 2012/27/EU (Energy Efficiency Directive). It obliges Member States to contribute to the achievement of an EU-wide target to reduce energy consumption. In 2021 and as part of the 'Fit for 55' package, the Commission proposed to increase the binding energy savings targets to 39% by 2030. Member States had to publish their national energy efficiency action plans.

At the level of production, energy efficiency legislation addresses the technologies used, such as the co-generation of electricity and heat. According to the Energy Efficiency Directive, updated in 2018, Member States are obliged to assess the potential of high-efficiency cogeneration, district heating and district cooling and to carry out a cost-benefit analysis based on climatic conditions, economic feasibility and technical suitability, and notify this to the Commission.⁴² To increase energy efficiency at the production level, Germany has a Combined Heat and Power Act in place, with instruments very similar to those under the German Renewables Act. Grid operators must immediately connect high-efficient combined heat and power installations to their grid and allow the feed-in, transmission and distribution of this electricity on a priority basis.⁴³ The plant operator has to directly market the electricity and can claim a market premium from

40 Berlin Solar Act (Solargesetz Berlin).

41 2021 Coalition Agreement between SPD, Bündnis 90/Die Grünen and FDP, p. 56.

42 Art. 14 Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC.

43 § 4 of the Act for the Preservation, Modernisation and Expansion of Combined Heat and Power (Gesetz für die Erhaltung, die Modernisierung und den Ausbau der Kraft-Wärme-Kopplung). Scholz, *Die Rechtfertigung von diskriminierenden umweltpolitischen Steuerungsinstrumenten*, p. 52 et seq.

the relevant grid operator under § 5 of the Combined Heat and Power Act. These grid-related and financial instruments do not directly influence investments co-generation.

A focus of energy efficiency law has also been upon the consumption level in the building sector. For this sector, the updated Directive (EU) 2010/31 on energy performance of buildings aims to ensure that each Member state has a highly energy efficient and decarbonised building stock by 2050.⁴⁴ In a roadmap, Member states shall include their milestones for 2030, 2040 and 2050 to achieve this target. They have to ensure that buildings must achieve specified building standards, which apply to public and private buildings, new and existing buildings, as well as for residential and non-residential buildings. Instruments are to be found in the German Building Energy Act.⁴⁵ These include, for instance, the following obligations and prohibitions: Persons who construct a building shall construct it as a low-energy building.⁴⁶ For existing buildings, exterior components must not be changed in such a way that the energy quality of the building deteriorates.⁴⁷ Under § 60 of German Building Energy Act, components that have a significant influence on the efficiency of heating, cooling, ventilation and hot water supply systems, or on other equipment, must be regularly serviced and maintained by the operator. If a central heating system is installed in a building, it is to be equipped with central automatic devices for reducing and switching off the heat supply and for switching electrical drives on and off in dependence on the outdoor temperature and the time.⁴⁸ For the installation of new heat distribution and hot water pipes, the heat emission of the pipes has to be limited.⁴⁹ Owners must no longer operate boilers charged with a liquid or gaseous fuel, which were installed before 1991, and must cease operating such boilers, where installed after 1991, after the expiry of 30 years.⁵⁰ The owner of a new building is obliged to have an energy performance certificate on the basis of the energy characteristics of the completed building.⁵¹

44 Art. 2a Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings.

45 Act on the Saving of Energy and the Use of Renewable Energies for Heating and Cooling in Buildings (Gesetz zur Einsparung von Energie und zur Nutzung erneuerbarer Energien zur Wärme- und Kälteerzeugung in Gebäuden).

46 § 10 of the German Building Energy Act.

47 § 46 of the German Building Energy Act.

48 § 61 of the German Building Energy Act.

49 § 69 of the German Building Energy Act.

50 § 72 of the German Building Energy Act.

51 § 80 of the German Building Energy Act.

These direct instruments are accompanied by numerous financial support programmes, including investments grants or the provision of low interest bank loans. In contrast to the production of energy, its consumption is therefore affected by direct instruments, which ensures the achievement of the energy efficient targets.

4. Choice of instruments in the energy sector and conclusion

To conclude, the German Renewables Act provides indirect instruments and leaves full flexibility to market participants at the production and supply levels of the value chain. Producers and suppliers are not addressed by an obligation to produce or supply electricity from renewable energies. It can thus be argued that the law, which affects the production of electricity and the choice of primary energy, reveals the German legislator's preference for indirect instruments. Obligations addressed to electricity producing companies to support the choice of renewable energies are absent. The market participants affected by German legislation still enjoy economic freedom, with the exception presented by the nuclear and coal phase-out.

In contrast to this, energy efficiency law at the level of consumption shows a preference for mainly direct instruments. Consumers of electricity, including house owners, are covered by a number of obligations. Their fundamental rights, which guarantee liberty, are limited to effectively reduce electricity consumption and to ensure the achievement of the Green Deal targets.

It has to be taken into account that most of the aforementioned obligations in Energy Efficiency Law have their legal basis in the current versions of the Directive 2012/27/EU and of the Directive (EU) 2010/31, which determine energy efficient standards to be implemented in national law. To this extent, the freedom of the German legislator was limited. The Directive (EU) 2018/2001 for the expansion of renewable energies, however, does not limit the legislative freedom of the Member states. It does not oblige Member states to implement direct instruments affecting the production, but rather respects each Member state's right to determine its choice between different energy sources and the general structure of its energy supply, as ensured by Art. 194 TFEU. Considering the degree of legislative freedom which the Directive (EU) 2018/2001 for the use of renewable energies, on the one hand, and the Directive 2012/27/EU and the Directive (EU) 2010/31 for energy efficiency, on the other, leave to the Member states, it can be argued that the German legislator still seems reluctant to implement direct instruments, if not obliged to do so under EU law. Here the legislative

freedom for the governance of the electricity sector, left to Member States by secondary EU law, is arguably not being exercised sufficiently by the German legislator to restrict the economic freedom of market participants so as to ensure the achievement of climate neutrality. A higher degree of market intervention at national level for the benefit of environmental protection seems to be required to effectively ensure the achievement of the Green Deal targets.

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