General Perspectives on the Law of Energy Transition in France

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A. Introduction

There is no legal definition of energy transition in France, not even in the law that is specifically dedicated to it, which is the "Energy Transition for Green Growth Act" adopted in 2015.[1] It only gives a definition of green growth, but not of the energy transition needed to achieve it.[2] Nevertheless, it is usually said in France that the energy transition is a transition from a society based on high energy consumption and especially high consumption of fossil fuels to a more energy and carbon efficient society, promoting energy savings and low-carbon energy, especially renewable energies. There are some well-accepted elements in this definition, such as the development of renewable energies, but one may say that there is still some ambiguity about the exact meaning of this transition in France. This ambiguity concerns the question of whether it is a question of promoting renewable energies, or low-carbon energies, including therefore nuclear energy. If there is perhaps a French particularity in what the energy transition means and implies, it is certainly about the place that nuclear energy must have in the process, and we will see in this study the hesitations that existed in France in this regard and recent developments that provide a clearer answer.

Before coming to that, it has to be said that France has long been involved in the energy transition process and in the fight against climate change. In some respects, France benefits from significant advantages. Especially, France benefits from largely carbon-free electricity production. As of 2021, only 7.8 % of electricity generation comes from fossil fuels (coal, oil

1 Loi n° 2015–992 du 17 août 2015 relative à la transition énergétique pour la croissance verte.

2 Green growth is defined "as a mode of economic development that respects the environment, is low-energy and resource and carbon-efficient, socially inclusive, supports the potential for innovation and guarantees the competitiveness of businesses" (article L. 100–1 of the French Energy Code, resulting from the Energy Transition Act of 17 August 2015).

and natural gas).[3] It should be added that a very small proportion comes from coal, less than 1 % of total electricity production. France has also one of the lowest per capita emissions of advanced economies, well below the European average, thanks mainly to the role of nuclear energy.

But at the same time, France remains very dependent on fossil fuels in certain sectors such as transport, and fossil fuels still account for a very large share of the French total energy supply (47 %).[4] Furthermore, it appears that France faces difficulties in reaching some of its energy transition targets. France has failed to meet its 2020 target for energy efficiency and, even more significantly, its target for the development of renewable energies. Therefore, the situation is not unequivocal in France.

For this reason, a number of important texts have recently been adopted, aimed at speeding up the process. Two laws are worth mentioning, both adopted in 2023, just a few months apart. The first is the Renewable Energy Acceleration Act, adopted in March 2023.[5] The second is the Nuclear Acceleration Act, adopted in June 2023.[6] In both cases, the aim is essentially to speed up the procedures for setting up new low-carbon energy production facilities, whether renewable or nuclear. Only time will tell whether these new measures will produce significant results, but their very existence reflects the need to remedy certain shortcomings in order to accelerate the achievement of France's decarbonization objectives.

Before looking at these recent developments in more detail, we will provide an overview of the legal framework for the energy transition in France and of the objectives that France has set itself for the coming years (B). We will continue this overview by distinguishing between the efforts made to reduce the production and consumption of fossil fuels (C), the efforts made to develop renewable energies and energy savings (D), and the central place still occupied by nuclear energy in the French energy transition (E).

3 RTE, 'Bilan électrique' <https://bilan-electrique-2021.rte-france.com> accessed 30 October 2023.

4 Total energy supply in France, as of 2020: Oil 28 %, Natural Gas 15 %, Coal 4 %, Nuclear 41 %, Biofuels/waste 8 %, Hydro 2 %, Wind/solar 2 % (see International Energy Agency, 'France 2021 Energy Policy Review' 19 <https://iea.blob.core.windows.net/assets/7b3b4b9d-6db3-4dcf-a0a5-a9993d7dd1d6/France2021.pdf> accessed 20.08.2024).

5 Loi n° 2023–175 du 10 mars 2023 relative à l'accélération de la production d'énergies renouvelables.

6 Loi n° 2023–491 du 22 juin 2023 relative à l'accélération des procédures liées à la construction de nouvelles installations nucléaires à proximité de sites nucléaires existants et au fonctionnement des installations existantes.

B. The French Legal Framework for the Energy Transition

The French legal framework is largely based on the Energy Transition for Green Growth Act, adopted in 2015.[7] Several previous texts had already laid some foundations, notably in promoting renewable energies and energy savings.[8] Some subsequent texts have also made some changes,[9] but it can be said that the Energy Transition Act is the cornerstone of the French energy transition.[10] This text, and to a certain extent the other laws mentioned before, have enabled France to set clear objectives and put in place a wide range of tools to achieve them (even if experience shows that they are not always sufficient).

The main objectives of French energy policy arising from these laws have been codified in the preliminary part of the Energy Code. Most of them date from the Energy Transition Act, but some have been modified since then. These objectives, as listed in article L. 100–1 of the Energy Code, are essentially to ensure security of energy supply, maintain competitive energy prices, protect human health and the environment, and ensure a right of access to energy for all people. In addition to these general objectives, article L. 100–4 of the Energy Code sets out a host of quantified targets for different timeframes.

7 Loi n° 2015- 992 du 17 août 2015 relative à la transition énergétique pour la croissance verte.

8 In particular the 2005 law on energy policy guidelines (Loi n° 2005–781 du 13 juillet 2005 de programme fixant les orientations de la politique énergétique) and the two "Grenelle Acts" of 2009–2010 (Loi n° 2009–967 du 3 août 2009 de programmation relative à la mise en œuvre du Grenelle de l'environnement; Loi n° 2010–788 du 12 juillet 2010 portant engagement national pour l'environnement).

9 In particular the 2019 Energy and Climate Law (Loi n°2019–1147 du 8 novembre 2019 relative à l'énergie et au climat) and the 2021 Climate and Resilience Law (Loi n°2021–1104 du 24 août 2021 portant lutte contre le dérèglement climatique et renforcement de la résilience face à ses effets).

10 The process leading to the Energy Transition Act initially started with the organization of a national energy transition debate, an intensive stakeholder consultation (which was not usual in France at the time), aiming to establish a comprehensive and pluralist analysis of long-term challenges for the energy transition in France. The objective was to prepare the subsequent legislative process through the identification of consensual objectives and measures. Next, an arduous parliamentary debate took place and extended over 12 months to reach a final text.

Article L. 100–4 of the Energy Code states that

"I.-To respond to the ecological and climatic emergency, the national energy policy aims:
1° To reduce greenhouse gas emissions by 40 % between 1990 and 2030 and to achieve carbon neutrality by 2050 by dividing greenhouse gas emissions by a factor of more than six between 1990 and 2050 (…);
2° To reduce final energy consumption by 50 % by 2050 compared to the 2012 baseline, with intermediate targets of around 7 % in 2023 and 20 % in 2030 (…);
3° To reduce the primary energy consumption of fossil fuels by 40 % by 2030 compared with the reference year 2012, modulating this target by fossil fuel according to the greenhouse gas emission factor of each (…);
4° To increase the share of renewable energies to 23 % of gross final energy consumption by 2020 and to at least 33 % of this consumption by 2030; by this date, to achieve this objective, renewable energies must account for at least 40 % of electricity production, 38 % of final heat consumption, 15 % of final fuel consumption and 10 % of gas consumption (…);
4° bis To encourage the production of hydroelectric power, in particular small-scale hydroelectric power, taking care to maintain energy sovereignty, guarantee the safety of hydroelectric installations and encourage the storage of electricity;
4° ter To encourage the production of electricity from installations using mechanical wind energy located at sea, with the aim of gradually increasing the rate at which installed production capacity is allocated following competitive tendering procedures;
4° quater To encourage the production of electricity from agrivoltaic installations, within the meaning of article L. 314–36, by reconciling this production with agricultural activity, giving priority to food production and ensuring that there are no negative effects on agricultural land and prices;
5° (Repealed)[11]
6° To contribute to achieving the objectives for reducing atmospheric pollution (…);
7° To have a housing stock in which all buildings are renovated to meet "low energy building" or similar standards by 2050, by implementing

11 Until the law of 22 June 2023 this provision provided for the objective "To reduce the share of nuclear power in electricity production to 50 % by 2035" (see *infra* Section D).

a policy of thermal renovation of housing mainly for low-income households;
8° To achieve energy autonomy and an electricity production mix composed of 100 % renewable energies in the local authorities governed by Article 73 of the Constitution by 2030;
9° To multiply by five the quantity of renewable and recovered heat and cooling delivered by heating and cooling networks by 2030.
10° To develop low-carbon and renewable hydrogen and its industrial, energy and mobility uses, with a view to achieving approximately 20 to 40 % of total hydrogen and industrial hydrogen consumption by 2030;
11° To promote the management of electricity production, with the aim of achieving a demand-side response capacity of at least 6.5 gigawatts by 2028.

The Energy Code requires Parliament to review these targets every five years. Other planning instruments complement and specify these legislative targets, especially the multiannual energy plan, which is adopted by the government, and which specifies the objectives in more detail and over shorter periods. For example, it contains detailed targets for reducing the consumption of each fossil fuel and development targets for each renewable energy source. The current plan was adopted in 2020[12] and is due to be amended in the coming months. The multiannual energy plan, together with the national low-carbon strategy,[13] form the basis for the national energy and climate plan.

In light of these objectives, we can now assess the efforts made by France on the most important aspects of its energy transition policy, concerning

12 Décret n° 2020–456 du 21 avril 2020 relatif à la programmation pluriannuelle de l'énergie. On French energy policy objectives and the multiannual energy plan, see Marie Lamoreux, *Droit de l'énergie* (2nd ed., LGDJ, 2022), n° 117 ff.

13 The national low-carbon strategy is France's roadmap for climate change mitigation. It specifies emissions reduction targets by sector and provides for five-year carbon budgets. France was not able to meet the targeted reductions of its first 2015–2018 carbon budget. Therefore, in July 2021, the Council of the State requested the government to adopt all measures necessary to meet its greenhouse gas emission reduction commitments for 2030 (Conseil d'État, 1er juillet 2021, n° 427301, *Commune de Grande-Synthe*). In a second decision, the Council of the State noted that important measures had been adopted, but that they were still insufficient to consider that the first decision had been implemented. Consequently, the Council of the State issued a ruling requiring the government to take additional measures before June 30, 2024 (Conseil d'État, 10 mai 2023, n° 467982, *Commune de Grande-Synthe*).

the reduction in the use of fossil fuels, the development of renewable energies and energy savings, and the role assigned to nuclear energy.

C. The Path Towards Decreasing the Production and Consumption of Fossil Fuels

The French energy code provides for an objective to reduce the consumption of fossil fuels by 40 % by 2030 compared to the reference year 2012. This is notable because many national legislations do not include such a target. They usually include a target for the development of renewable energies and a target for the reduction of greenhouse gas emissions, which can of course be understood as involving a reduction in the use of fossil fuels, but there is not necessarily a quantified target for fossil fuels as such.

Beyond this objective, measures have been adopted in recent years directly targeting fossil fuels. It is not necessary to list them all here, but a few are worth mentioning. One of the most symbolic ones is the decision taken in 2017 to ban all activities of exploration and production of hydrocarbons on the French soil, either on its mainland or overseas territories. Some activities were already prohibited in France for several years regarding the oil and gas sectors, especially since the adoption in 2011 of a statute law that prohibited the use of fracking techniques and, consequently, prohibited the exploration and production of unconventional oil and gas, especially shale gas[14]. But more recently, the French legislation made a step further and a law adopted in December 2017 provided for the phasing out of all hydrocarbon and coal exploration and exploitation activities[15]. The law stipulates that no more hydrocarbon exploration permits can be granted, so it is no longer possible to initiate such activity on French soil. Nevertheless,

14 Loi n° 2011–835 du 13 juillet 2011 visant à interdire l'exploration et l'exploitation des mines d'hydrocarbures liquides ou gazeux par fracturation hydraulique. The constitutionality of this law was challenged, in particular by companies that had previously obtained research permits, but the Constitutional Court rejected their appeals: Conseil constitutionnel, 11 oct. 2013, n° 2013–346 QPC, *Sté Schuepbach Energy LLC*.

15 Loi n°2017–1839 du 30 décembre 2017 mettant fin à la recherche ainsi qu'à l'exploitation des hydrocarbures. The constitutionality of this law, like that of 2011 concerning shale hydrocarbons, was challenged, but the appeal was unsuccessful: Conseil d'État, 27 juin 2018, n° 419316, *Stés EGFEP & TEPGF*. See also Conseil d'État, 18 décembre 2019, n° 421004, *Sté IPC Petroleum France SA*.

an operating licence can still be issued to companies holding an exploration licence, but production activities must cease in 2040.[16]

At the time the law was passed, it was said that France was the first big industrial country to dare to take this commitment. But it has to be admitted that it looks more like a symbolic gesture, since France produces very little fossil energy: it no longer produces coal, and oil and gas production is very limited (around 1 % of national consumption). However, this has led to certain projects being put on hold.[17]

In any case, it is above all efforts to reduce fossil fuel consumption, rather than production, that must now be focused on. Action must therefore be taken in the sectors that consume the most fossil fuels, for example in the field of mobility or in the field of power generation.

As far as electricity production is concerned, France's is already very low-carbon. France uses relatively little fossil fuel for its electricity generation, but it can still be noted that some decisions have been taken to go a little further. Especially, there has been a drastic decline in coal-fired electricity generation over the last 10 years,[18] which today represents less than 1 % of French electricity production, and France has decided in 2019 to close its last coal-fired power stations.[19] However, in 2022 and 2023 France had to temporarily reverse this decision in order to cope with the unforeseen unavailability of part of the nuclear fleet due to necessary maintenance operations, which led to a temporary shutdown of a larger number of reactors than expected. But this is just a temporary measure to deal with an exceptional situation.[20]

16 By exception to the general principle that the concessions granted and the renewal of existing concessions cannot exceed the deadline of January 1st 2040, the permit may exceed this deadline when the licensee demonstrates to the administrative authority that the deadline does not allow to cover its research and exploitation costs, in order to achieve the economic equilibrium. When the law was passed, 33 exploration licences and 63 operating licences were in force.

17 This was particularly the case overseas, where projects were abandoned, notably in French Guiana.

18 – 81 % in the period 2010–2020.

19 Energy Code, art. L. 311–5–3, II, created by the 2019 Energy and Climate Law (Loi n°2019–1147 du 8 novembre 2019 relative à l'énergie et au climat). The purpose of this text is to set a cap on greenhouse gas emissions applicable to the activity of fossil-fuelled power stations, with the result that coal-fired power stations, which emit the most, could only operate for a few hours a year, leading to their closure.

20 In 2022, for the first time in a very long time, France was a net importer of electricity, whereas for years it had been a net exporter, and even a major exporter of electricity. This was mainly due to the unavailability of a large proportion of the nuclear

On the other hand, much remains to be done in other sectors, such as the mobility sector. On this point, in France, the decarbonization of mobility will mainly involve the development of electromobility. A policy to support the development of electric vehicles and the deployment of charging infrastructure has been put in place and is beginning to produce results.

At present only about 13 % of new passenger car sales are of electric cars, but this rate is increasing rapidly.[21]

At the same time, and given that the primary actor in the reduction of fossil fuel consumption is the consumer himself, various measures have been adopted concerning practices likely to influence his behaviour, such as advertising. For example, the law provides for a ban on advertising related to fossil fuels.[22] It also provides for a ban on advertising for new cars that emit too much greenhouse gas,[23] which paves the way for the future ban on the sale of new fossil fuel cars that has been decided in France for 2040.[24]

France is also one of the countries that have decided to withdraw from the Energy Charter Treaty. The main reason for this was that the rules set

fleet, partly as a result of scheduled maintenance operations (the maintenance of certain nuclear power plants had fallen behind schedule in 2020–2021 because of the Covid-19 pandemic) and partly because of an unexpected corrosion problem detected in certain power plants, leading to the unavailability of a larger number of reactors than expected. To deal with this situation, France has increased the production of its thermal power stations and has increased its imports.

21 France has ambitious targets and incentives, such as a bonus-malus system, a conversion bonus to support the switch to electric cars, subsidies for the purchase of electric vehicles and for the installation of charging stations. The Law on the Orientation of Mobility adopted in 2019 (Loi n° 2019–1428 du 24 décembre 2019 d'orientation des mobilités) require all sales of new passenger cars to be zero emission in 2040, and it introduced a wide range of measures to boost the role of alternative fuels (electricity, hydrogen, biogas).

22 The law states that "advertising relating to the marketing or promoting fossil fuels is prohibited" : article L. 229–61 of the Environment Code, created by the 2021 Climate and Resilience Act (Loi n°2021–1104 du 24 août 2021 portant lutte contre le dérèglement climatique et renforcement de la résilience face à ses effets).

23 Article L. 229–62 of the Environment Code, created by the 2021 Climate and Resilience Act (this provision will enter into force in 2028).

24 The 2019 Law on the Orientation of Mobility provides for "the end of the sale of new passenger cars and light utility vehicles using fossil fuels by 2040" (Loi n° 2019–1428 du 24 décembre 2019 d'orientation des mobilités, art. 73).

out in the treaty were likely to hinder the energy transition, particularly because of the protection offered to investments in the fossil fuel sector.[25]

It should be noted, however, that the energy crisis we have been experiencing since the end of 2021, leading to a very sharp rise in prices, has in some respects made it more difficult to achieve the targets. Indeed, some consumer support measures have led to increased subsidies for fossil fuels, particularly for the purchase of motor fuels. This is not in line with the decarbonization policy, but it shows how difficult it can sometimes be to combine the energy transition with the need for access to energy and the fight against energy poverty. On the other hand, the same crisis has led to greater emphasis being placed on the importance of energy savings and has produced significant results in this area as we will see below.

D. Efforts To Improve the Development of Renewable Energies and Energy Savings

The share of renewable energies in the French energy mix has risen significantly in recent years. For example, over the past decade, wind and solar photovoltaic electricity generation have largely increased, driving the share of renewables in electricity generation from 14 % in 2010 up to 24 % in 2020. Hydropower generation had long been significant, accounting for around half of renewable electricity production in 2020.

But it cannot be denied that there is still a lot of progress to be made. This is even more apparent now that France has failed to reach its 2020 renewable energy development target. By 2020, the target was a 23 % share of renewables in gross final energy consumption, and France only achieved around 19 %. Obviously, there is a gap between ambition and implementation. Moreover, the distance to the 2030 targets is increasing. For 2030, the current target is to increase the share of renewable energies to at least 33 % of gross final energy consumption, whereas France is currently at around 20 %. The law specifies the targets to be achieved in different sectors (electricity production, gas consumption, heat consumption, etc.) in order to reach this overall target. For example, the law specifies that renewable

25 On 1 December 2022, the French Minister for Europe and Foreign Affairs officially notified Portugal of France's withdrawal from the Energy Charter Treaty. Portugal, as depositary of the Treaty, acknowledged receipt of this notification on 7 December 2022. In accordance with the Treaty, this withdrawal will take effect one year later.

energies must account for 40 % of electricity production by 2030, whereas at present they only account for 24 %.[26] In other words, this production must be almost doubled. What's more, this target is set to rise even further, as France will have to revise its ambitions upwards as a result of changes in EU law.[27] Major progress will have to be made in the coming years.

It is therefore important to ask why the 2020 objective was not achieved. We will not go into detail here, as this will be covered in the chapter specifically devoted to renewable energies, but we will simply point out that the difficulties are essentially due to the following reasons. In terms of energy policy, it may be thought that France did not feel as much pressure as others to develop renewable energies on a massive scale because it already benefited from largely decarbonized energy, at least in the field of electricity production, due to the major role of nuclear energy. But the problem is also one of implementation, and from that point of view the main difficulties identified concern:

- the local acceptability of certain projects, particularly in the field of wind power;
- the excessive duration of permitting procedures, since the average duration of these procedures in France is significantly longer than the average for European countries;[28]
- lengthy litigation;
- a certain legal uncertainty, due to some retroactive reforms of support mechanisms that have undermined investors' confidence.

The legislature is gradually trying to resolve these difficulties. It recently took action by adopting, in March 2023, the Renewable Energy Acceleration Act, one of whose aims is to halve the time taken to complete administrative procedures.[29] Time will tell whether this objective will be achieved.

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26 And 38 % of final heat consumption, 15 % of final fuel consumption and 10 % of gas consumption: Energy Code, art. L. 100–4 (see supra Section A).

27 Particularly in view of the new target for the development of renewable energies at Union level, raised to a minimum of 42.5 % of final electricity consumption by 2030 by the "RED III" directive: Directive (EU) 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] OJ L 2023/2413.

28 For example, an average of 8 years for the commissioning of a wind farm.

29 Loi n° 2023–175 du 10 mars 2023 relative à l'accélération de la production d'énergies renouvelables. Several of the measures contained in this law are in line with the Euro-

Regarding energy savings, French law sets a target of halving final energy consumption by 2050 and to reduce it by 20 % by 2030, which is very ambitious. Many measures have been adopted in this area, although the results are not sufficient for the moment. Total final consumption in France decreased by around 5 % over the past decade, mainly thanks to improvements in the building and industry sectors. Significantly better results were achieved in 2022. However, they can be explained by a context of crisis. In response to it, the French State drew up an "energy sobriety plan", encouraging individuals and companies to reduce their energy consumption in a context of risk to security of supply and very high energy prices.[30]

But there is no guarantee that these good results will continue over time. Therefore, strong measures are still needed. The field of the energy performance of existing buildings is a good example of the evolution of French law. Originally, the measures were primarily of an incentive and informative nature: for example, the energy performance diagnosis which must be drawn up at the time of the sale or rental of the building, and which allows the buyer or the tenant to be informed of the building's level of energy performance. Today, it is much stricter measures that must be implemented. For example, the rents of housing with poor energy performance are frozen and the worst-performing units are considered indecent housing, which prohibits them from being rented.[31] Therefore, if the owner wants to rent his property, he is obliged to carry out energy renovation work. Significant public subsidies have been introduced to promote the implementation of these energy renovation works.

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pean Council Regulation 2022/2577 of 22 December 2022 laying down a framework to accelerate the deployment of renewable energy and Directive (EU) 2023/2413 of the European Parliament and of the Council of 18 October 2023 amending Directive (EU) 2018/2001 ("RED III"), particularly with regard to the presumption of overriding public interest applicable to certain plants and installations for the production of energy from renewable sources. Other measures include developing and supervising agrivoltaics, speeding up the development of offshore wind power, which is lagging far behind in France, promoting the development of "corporate power purchase agreements", extending the obligation to install photovoltaic panels on certain buildings, and so on.

30 French Government, 'Plan de sobriété énergétique' (2022) < https://www.ecologie.gouv.fr/sites/default/files/dp-plan-sobriete.pdf> accessed 30 October 2023.

31 The 2019 "Energy and Climate Law" has made it mandatory to renovate the most energy-intensive residential buildings from 2028. Even before this date, to encourage landlords to carry out the work without delay, the law provides for a freeze on rents, followed by a ban on renting out the most energy-intensive dwellings.

E. The Continuing Central Role of Nuclear Energy

France is in a rather specific position regarding nuclear energy, which is the focus of much of the debate on the future of French energy policy. Indeed, France is mainly known as a nuclear country. France made the choice during the 70s to massively develop the nuclear industry in order to become self-sufficient and to offer to citizens low-cost electricity. The result is that nuclear power still represents around two thirds of French power production.[32] Therefore, it could be said that in the French context the real dilemma is not between fossil fuels and renewable energies, but between nuclear energy and renewable energies.

Nevertheless, ten years ago, following the Fukushima accident, there were many discussions about the future of nuclear power. Doubts were raised about whether the French energy transition involved questioning the role of nuclear power in the French energy mix. A kind of response was given by the Energy Transition Act adopted in 2015, which transcribed a form of compromise by keeping the nuclear option open while providing for a reduction in the share of nuclear power in national electricity production. The aim in 2015 was, therefore, to diversify energy sources, with less nuclear power and more renewable energy. In its original version, the Energy Transition Act provided for a target to bring the proportion of nuclear energy in electricity generation down to 50 % by 2025.[33] At the time, the share of nuclear power was around 70 %. In addition, the Energy Transition Act introduced a cap on installed nuclear capacity, which represented the current installed capacity at the time the law was passed (63,2 GW). In other words, the law provided for a ban on the creation and operation of new reactors, unless old reactors were first shut down.

But it was not a death sentence for nuclear energy in France, and subsequent events have largely confirmed this, even if it can be said that the issue has lacked clarity for a few years due to political hesitations.

Firstly, the law was amended to postpone the deadline. The original target date was 2025, but this was later extended to 2035, because it became apparent that a significant and rapid reduction in the share of nuclear power would entail major risks, particularly in terms of security of supply

32 69 % in 2021, RTE, 'Bilan électrique' (n 3).

33 2015 Energy Transition for Green Growth Act, article 1 (Loi n° 2015- 992 du 17 août 2015 relative à la transition énergétique pour la croissance verte).

and in terms of greenhouse gas emission levels.[34] It was found that the pace of development of renewable energy was too slow to allow for the rapid closure of a significant number of nuclear reactors. This is why the law was also amended to specify that any decision to shut down a nuclear reactor must take into account the requirements of security of supply and reduction of greenhouse gas emissions.[35]

Secondly, and even more clearly, the law was recently amended to repeal the target for reducing the share of nuclear power in electricity generation. The Nuclear Acceleration Act, adopted in June 2023,[36] once again promotes nuclear energy, as was the case before the 2015 law on energy transition. More precisely, the Nuclear Acceleration Act has two objectives. The first is to extend the operating life of existing nuclear power plants, as long as safety requirements are met.[37] The second is to simplify and accelerate procedures for the creation of new nuclear reactors, provided they are built within the perimeter of existing nuclear sites or nearby, with a view to facilitating the implementation of the nuclear energy recovery plan. At present, the construction of 14 new reactors is planned for the next few years. The means provided for this mainly consist of simplifying the administrative procedures required for the creation of nuclear reactors, whether under town planning law, environmental law or energy law. But this also meant repealing the provisions relating to energy policy objectives that were likely to prevent such a revival of the nuclear industry. This is why the law repealed the target for reducing the share of nuclear power in electricity generation, as well as the cap on installed nuclear capacity that had been set in 2015.

34 2019 Energy and Climate Law, article 1 (Loi n°2019–1147 du 8 novembre 2019 relative à l'énergie et au climat).

35 Energy Code, article L. 100–4, I bis, created by the 2021 Climate and Resilience Act (Loi n°2021–1104 du 24 août 2021 portant lutte contre le dérèglement climatique et renforcement de la résilience face à ses effets).

36 Loi n° 2023–491 du 22 juin 2023 relative à l'accélération des procédures liées à la construction de nouvelles installations nucléaires à proximité de sites nucléaires existants et au fonctionnement des installations existantes.

37 The nuclear power fleet is ageing in France, since many nuclear power plants were commissioned in the 1980s and were originally designed to operate for 40 years. Therefore, it is now a question of extending their lifetime. *Electricité de France* (EDF), which operates all of France's nuclear power stations, is currently engaged in a vast programme of refurbishing its nuclear reactor fleet and preparing it for operation beyond 40 years. The French regulatory system does not set a plant lifetime but requires the licensee to perform an in-depth safety review every 10 years. The Nuclear Acceleration Act amended certain provisions governing safety reviews.

This recent development confirms, if confirmation were needed, that the energy transition is not seen in France as involving giving up nuclear power. This was also very clear in the debates on the EU taxonomy for sustainable activities, in which France argued strongly for nuclear energy to be recognized for its contribution to climate change mitigation.[38]

The French legal framework for hydrogen further confirms this. Most of the measures put in place in France aim to promote not just "green" hydrogen, but low-carbon hydrogen more generally. For example, in 2020 France adopted a "national strategy for the development of low-carbon hydrogen"[39], and the objectives of the national energy policy, as set out in the Energy Code, include the aim of "developing low-carbon and renewable hydrogen and its industrial, energy and mobility uses, with a view to achieving approximately 20 to 40 % of total hydrogen and industrial hydrogen consumption by 2030".[40] In 2021, France adopted a text laying the foundations for the legal regime applicable to renewable hydrogen and low-carbon hydrogen.[41]

The aim is to promote low-carbon hydrogen as well as renewable hydrogen, and therefore to include hydrogen produced from electrolyzers using nuclear energy.[42] As a result, public support schemes benefit both low-carbon and renewable hydrogen (in the form of operating aid or investment

38 Nuclear activities have finally been included in the taxonomy: Commission Delegated Regulation (EU) 2022/1214 of 9 March 2022 amending Delegated Regulation (EU) 2021/2139 as regards economic activities in certain energy sectors and Delegated Regulation (EU) 2021/2178 as regards specific public disclosures for those economic activities [2022] OJ L 188/1.

39 French Government, 'Stratégie nationale pour le développement de l'hydrogène décarboné en France' <https://www.entreprises.gouv.fr/files/files/secteurs-d-activite/industrie/decarbonation/dp_strategie_nationale_pour_le_developpement_de_l_hydrogene_decarbone_en_france.pdf> accessed 30 October 2023.

40 Energy code, article L. 100–4, 10°.

41 2021 Ordinance on Hydrogen (Ordonnance n° 2021–167 du 17 février 2021 relative à l'hydrogène). The main provisions of this text have been codified in the Energy Code: articles L. 811–1 et seq.

42 The legislative definitions are as follows: "Renewable hydrogen is hydrogen produced either by electrolysis using electricity from renewable energy sources as defined in article L. 211–2, or by any other technology that uses exclusively one or more of these same renewable energy sources and does not conflict with other uses allowing their direct recovery (…). In all cases, its production process emits, per kilogram of hydrogen produced, a quantity of carbon dioxide equivalents less than or equal to a threshold.

Low-carbon hydrogen is hydrogen whose production process generates emissions less than or equal to the threshold for the qualification of renewable hydrogen,

aid granted following a tendering procedure),[43] and the same applies to the "guarantees of origin" and "traceability guarantees" provided for in these texts.[44] Once again, we see that the objective in France is to develop the use of low-carbon energies, including nuclear energy, and not just renewable energies.

F. Conclusion

In France, the objective of the energy transition is above all to contribute to the decarbonization of the economy by promoting the use of renewable and low-carbon energies. As a result, France is promoting renewable energies and nuclear energy as well. Concerning nuclear energy, after a few years of hesitation, France has returned to a very clear position in favour of nuclear energy, as evidenced by the adoption of the Nuclear Acceleration Act in June 2023. As for renewable energies, while they are indeed progressing in France, the pace of development does not appear to be fast enough and significant efforts remain to be made to achieve the targets set for 2030. Although it may not be enough to solve all the difficulties, the Renewable Energy Acceleration Act, which was adopted in March 2023, shows that the French authorities are aware of this necessity.

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without being able, however, to receive the latter qualification, because it does not meet the other criteria" (article L. 811–1 of the Energy Code).

43 Energy Code, art. R. 812–1 et seq. (created by Décret n° 2023–854 du 1er septembre 2023 relatif au dispositif de soutien à la production de certaines catégories d'hydrogène).

44 According to article L. 821–2 of the energy code, "if the renewable or low-carbon hydrogen produced is not mixed with another type of hydrogen or another gas between the stage of its production and that of its consumption and the guarantee issued is sold at the same time as the hydrogen produced, this guarantee attests to its physical traceability. It is called a 'traceability guarantee'". According to article L. 821–3 of the energy code, "if the renewable or low-carbon hydrogen produced is likely to be mixed with another type of hydrogen or another gas between the same stages or if the guarantee issued during its production is likely to be sold independently of the hydrogen produced, this guarantee attests to its origin. It is called a 'guarantee of origin'".

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