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Dear Ladies and Gentlemen,

The UK government plans to construct a new nuclear power plant in Hinkley Point C by 2023. However, this is only possible with the help of massive state funding. The UK government guarantees the operators of Hinkley Point C a fixed Strike Price of £92.5 (109 €) per megawatt hour over a period of 35 years. This tariff is twice the amount of the market price of £49 in 2012. This represents a guaranteed price for nuclear electricity of 10.6 Cent per kilowatt hour. Hence, the British tax payers will subsidise the nuclear power plant with billions of pound over several decades. In addition, the British government reduces the risk of funding with guarantees because the tax payers vouch for 65 percent of the construction costs.¹

¹ „When the reference price at which the electricity is sold is lower than the Strike Price, the Secretary of State will pay the difference between the Strike Price and the reference price, ensuring that NNBG will ultimately receive a fixed level of revenue based on the Strike Price and its level of output.“ See: European Commission (2013): State aid SA. 34947 (2013/C) (ex 2013/N) - United Kingdom Investment Contract (early Contract for Difference) for the Hinkley Point C New Nuclear Power Station, C(2013) 9073 final, Brussels, p. 8.



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According to the British government, the two planned nuclear reactors of Hinkley Point C are meant to achieve security of supply, diversity of generation and decrease CO₂-emissions.

The European Commission notified the UK in its written communication "State aid SA. 34947 (2013/C) (ex 2013/N) – United Kingdom Investment Contract (early Contract for Difference) for the Hinkley Point C New Nuclear Power Station" of December 18th 2014 of its decision to initiate the procedure laid down in Article 108(2) of the Treaty on the Functioning of the European Union concerning the above mentioned measure. The written communication 2014/C 69/60 states that all "Interested parties may submit their comments within one month of the date of publication of this summary and the following letter."²

Public authorities and the general public in Germany now have the opportunity to comment on the measure according to Article 108(2) TFEU until April 7th 2014. I would like to make use of this opportunity to comment on the Investment Contract for the construction and operation of Hinkley Point C with the following statement.

1. Introduction

The funding for Hinkley Point C is meant to be raised under a private law treaty between the UK and the Investor NNB Generation Company Limited (NNBG), a wholly-owned subsidiary of Electricité de France (EDF). The aim is to provide the investor with income security and a credit guarantee. The necessary state aid is believed to amount up to £17.6 billion.

This measure, especially the Contract for Difference (CfD) advocated by the British government, is, according to the European Commission, state aid under Article 107(1) TFEU "since the measure does not involve a genuine Service of General Economic Interest and favours an undertaking selectively, threatening to distort competition and affect trade between Member States."³ Furthermore, approval by the European Commission for

² European Commission (2014): Procedures relating to the implementation of Competition policy, (2014/C 69/60), p. 1.

³ Ibid. p. 2



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this particular case of state aid is not to be expected. The European Commission seriously doubts "whether the measure can be deemed to pursue the common objective of security of supply, and that it can pursue decarbonisation."⁴

In addition, the European Commission questions the idea that nuclear energy requires state aid and that the combination of CfD and credit guarantee represents an appropriate instrument. The combined state aid measures are disproportionate to the marginal potential positive effects of the aid. Moreover, the Commission is certain that the measure has "the potential to distort competition and affect trade between Member States"⁵ and Fouquet sees a "competitive advantage"⁶ through the CfD, substantially favouring NNBG.

I agree with the evaluation of the Commission and advocate against granting state aid for the construction of Hinkley Point C by the British government. I fear for the security and well-being of my community, future generations and everyone I hold dear, if Hinkley Point is constructed. In addition, Hinkley Point seriously threatens the integrity of the environment, water and food supply.

I comment in more detail on the planned construction of Hinkley Point C as follows:

⁴ Ibid.

⁵ European Commission (2013): State aid SA. 34947 (2013/C) (ex 2013/N) - United Kingdom Investment Contract (early Contract for Difference) for the Hinkley Point C New Nuclear Power Station, C(2013) 9073 final, Brussels, p. 29.

⁶ Fouquet, Dörthe/ Thomas, Steve (2013): The New UK Nuclear Programme – A Fit for Nuclear and a Blueprint for Illegal State Aid?, Brussels, p. 21.



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2. Existence of state aid under Art 107(1) Treaty on the Functioning of the European Union (TFEU)

The UK claims that the Investment Contract does not constitute aid according to Art 107(1) TFEU⁷, primarily since the compensation would not grant an advantage to an enterprise based on the ‚Altmark‘ criteria. These criteria clarify under what conditions aid provided by a public authority for the performance of a Service of General Economic Interest (SGEI) provided by a company qualifies as State aid under Art 107(1) TFEU. For a measure to be in accordance with the principles of Art 107(1) TFEU, it has to comply with all four Altmark criteria. I strongly believe that the Investment Contract does not meet the Altmark criteria and hence does constitute aid according to Art 107(1) TFEU, a position the European Commission supports.⁸

2.1 Assessment of the first Altmark criterion

The first Altmark criterion states that „the recipient undertaking must actually have public service obligations to discharge and the obligations must be clearly defined“.⁹

The UK believes that NNBG has a public service obligation to discharge because the service provided by the company “is required to achieve the combined general economic interest objectives of i) security of supply, ii) diversity of generation, iii) decarbonisation and iv) electricity price stability/affordability.”¹⁰ In my opinion these objectives cannot be met with the presented measure but can only be achieved by the use of renewable energies.

⁷ „Article 107(1) TFEU provides that ,any aid granted by a Member State or through State resources in any form whatsoever which distorts or threatens to distort competition by favouring certain undertakings or the production of certain goods, shall, in so far as it affects trade between Member States, be incompatible with the common market.“ See: European Commission (2013): State aid SA. 34947 (2013/C) (ex 2013/N) - United Kingdom Investment Contract (early Contract for Difference) for the Hinkley Point C New Nuclear Power Station, C(2013) 9073 final, Brussels, p. 16.

⁸ Ibid., p. 26

⁹ European Commission (2011): Commission Staff Working Paper. The Application of EU State Aid rules on Services of General Economic Interest since 2005 and the Outcome of the Public Consultation, Brussels, SEC(2011) 397, p. 3.

¹⁰ European Commission (2013): State aid SA. 34947 (2013/C) (ex 2013/N) - United Kingdom Investment Contract (early Contract for Difference) for the Hinkley Point C New Nuclear Power Station, C(2013) 9073 final, Brussels, p. 17.



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2.1.i Security of supply

The United Kingdom claims that they are going to face a power supply shortage which would force the government to build not only Hinkley Point C but also additional new reactors throughout the country. This argument does not hold, since Hinkley Point C will not be operational before 2023 but the energy shortage in the UK will already materialise in 2020.¹¹ In any case, the long construction periods of nuclear power plants stand against a quick solution of the insecurity problem in the UK. In this context it should be mentioned that we are facing a uranium shortage anyway and that uranium deposits will be depleted by 2070. Hinkley Point C is supposed to operate until 2083. It is unclear how the British Government will cope with this problem, which would inevitably threaten their energy supply generated by nuclear power.

The United Kingdom's desire to keep the lights on and ensure energy security is, however, understandable. The supply insecurity could be dealt with by renewable energy systems in a quicker and more cost-effective way. In the long run, the decision to use renewable energies will pay off. The annual costs decrease with a simultaneous long usage of the systems. Additionally, high costs for climate and environment damages, as well as for energy imports, will be avoided. On the contrary, new nuclear power stations mean high costs during the entire operation and of course, in the case of a nuclear accident with its tragic consequences.

The German Green Party has the following proposition for the power generation by renewables in the future. First of all, there is a need to reorganise the electricity market design. Secondly, in times of low sun or wind power generation, highly efficient and flexible gas power plants, as well as electricity storage technologies, will secure the energy supply. In such an electricity system, renewables will be connected with efficient grids. New and innovative technologies should be developed further, i.e. new batteries and storage facilities, Power-to-gas or e-mobility. Additionally, it is necessary to reduce energy consumption.

¹¹ Assuming the construction, and hence, the operation will not be delayed in any way.



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2.1.ii Diversity of generation

As the Commission explains, “diversity of supply can be seen as one of the facets of security supply, as it contributes to the ability on the part of a Member State to withstand external shocks, and essentially to the resilience of its energy system.”¹² Besides the risks that nuclear energy presents in any case, there is also a systemic risk if the energy generation is concentrated on one type of generation. This is especially relevant for nuclear power as the systems cannot be started and shut down flexibly. Related to this, nuclear power is not very compatible with the use of renewable energy, which is, in fact, an important argument against the expansion of nuclear power. Indeed, nuclear power is highly compatible with fossil fuel-fired power plants. If the UK government is going to support and expand nuclear power, they will, at the same time, support climate damaging forms of power production such as coal. This aspect contrasts the UK’s argument below, that nuclear power will reduce CO₂ emissions in the future.

Diversity of generation can be achieved by a mix of solar, wind and hydropower, geothermal energy, biomass and tidal power. With this energy mix, a secure around-the-clock energy supply can be guaranteed within a few years. Additionally a continuous dependence on uranium imports could be avoided. This is quite important since uranium, as indicated in the previous section, is going to be depleted by 2070.

2.1.iii Decarbonisation

The British government claims that nuclear energy will help with decarbonisation in the UK. In my opinion, this is not the case. First of all, their argument fails to recognize the emissions that are produced throughout the entire nuclear cycle, meaning for example the mining for uranium, the construction of the plant and also the transportation of fuel assemblies. Secondly, the UK ignores the huge risks which are associated with uranium mining. It destroys the landscape, contaminates the soil, air and the water in the mining regions, and also exploits human rights of the indigenous communities in many respects. Overall, as the uranium reserves will decrease by an increase of new nuclear power plants, the

¹² European Commission (2013): State aid SA. 34947 (2013/C) (ex 2013/N) - United Kingdom Investment Contract (early Contract for Difference) for the Hinkley Point C New Nuclear Power Station, C(2013) 9073 final, Brussels, p. 39.



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mining process will get more difficult which will cause even higher amounts of CO₂ emissions than today. The less the quality of the uranium is the higher the emissions. Therefore, CO₂ emissions won't be reduced but increased by the use of nuclear energy.

As the Munich Environmental Institute (Umweltinstitut München) states, is the saving potential of CO₂ emissions due to nuclear power very small in any case. To save 2 to 3 billion tonnes of CO₂ emissions we would need a capacity of 1000 to 1500 gigawatt generated by nuclear power. That would mean a massive build-up of nuclear power reactors between 1000 and 1500 plants which is completely unrealistic (today there are 435 operating reactors). Climate change scientists recommend, however, that emission savings about 17 tonnes until 2050 are needed to prevent dangerous anthropogenic climate change. This is a goal that will never be met by nuclear energy.¹³

Overall, the full nuclear cycle – from mining uranium to the operation of a power plant – is not an advantage but rather a high risk to the environment. Thus, the argument which is employed by the UK is irresponsible. Not only for the people living in uranium mining areas but also for the British population and its neighbours. The tragic nuclear accidents of Chernobyl and Fukushima showed us that nuclear power is everything else but eco- or environment-friendly. Even after 28 years regions in Ukraine or Belarus are highly contaminated and people will never return to their homes. The use of renewable energy such as hydroelectric power, wind and solar energy neither cause huge CO₂ emissions, nor do they risk the lives of people if there ever were a technical or human failure.

2.1.iv Electricity price stability/affordability

The measure, as the Commission clearly states, is hardly contributing to affordability, but will instead, and most likely, contribute to an increase in retail prices.¹⁴ In this context I would like to mention that such an intense investment mechanism crowds out other alternatives to generate electricity, including

¹³ Umweltinstitut München e. V.: AKW – Kein Klimaretter. Atomkraft und globale Erwärmung. Available online at URL: http://umweltinstitut.org/download/radi/WEB_AtomundKlima.pdf (July 2013).

¹⁴ European Commission (2013): State aid SA. 34947 (2013/C) (ex 2013/N) - United Kingdom Investment Contract (early Contract for Difference) for the Hinkley Point C New Nuclear Power Station, C(2013) 9073 final, Brussels, p. 19.



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renewable energy sources. Additionally, it is to say that renewable energy – unlike nuclear energy – has become substantially cheaper in only ten years. Thus, renewable energy is a much more efficient and affordable generation of electricity than nuclear power. In terms of affordability one might not forget the rising, but not yet estimated, costs for i.e. the disposal of radioactive waste and, of course, the follow-up costs in the event of a nuclear accident. If you only take these costs into account, nuclear power is everything else but an affordable energy resource. As renewable energy is considerably more desirable, electricity price stability is also more easily achieved.

To sum it up, renewable energy is much more cost-effective, sustainable, available more quickly and safer than nuclear power.

In my opinion, the arguments of the United Kingdom are not appropriate to identify NNBG's service as a public service obligation and therefore it is no exception under the European state aid guidelines. Moreover, I think that the service provided by NNBG could also be provided under normal market conditions. There is no need for state aid.

But even if NNBG had a public service obligation, the obligation is not clearly defined. The Investment Contract does indeed limit the amount of aid given to NNBG by requiring the company to pay back the difference between the Strike Price and the reference price. Also, the maximum contracted capacity is a device that could limit the amount of aid. However, these mechanisms do not guarantee that NNBG will not sell the generated electricity on the market at market price. Therefore, as the Commission declares, it does not amount to an SGEI obligation.¹⁵

Another troubling aspect of the Investment Contract is the fact that NNBG can withdraw from the Investment Contract at any time without being penalised. NNBG has no obligation to build the power plant, nor is it obliged to finish construction by a certain date. The Commission therefore considers that the Investment Contract does not represent a sufficiently specified entrustment act.

¹⁵ European Commission (2013): State aid SA. 34947 (2013/C) (ex 2013/N) - United Kingdom Investment Contract (early Contract for Difference) for the Hinkley Point C New Nuclear Power Station, C(2013) 9073 final, Brussels, p. 21.



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2.2 Assessment of the second Altmark criterion: Parameters used to set the compensation level

The second Altmark criterion requires that the “parameters on the basis of which the compensation is calculated must be established in advance in an objective and transparent manner, to avoid it conferring an economic advantage which may favour the recipient undertaking over competing undertakings.”¹⁶ The parameters of the Investment Contract have not all yet been set and many of the terms being offered to NNBG are still unclear. This is particularly the case with respect to the Contract for Difference mechanism and its terms on which the difference will be calculated, prominently the reference for the market price.

At this point it is still unclear what the reference price will be and potential modifications of the Strike Price are still being negotiated. Based on these inadequate agreements, the Commission cannot “verify that the negotiated parameters will be established in an objective and transparent manner.”¹⁷ Thus, the arrangements between NNBG and the UK in the Contract for Difference confer an economic advantage which favours NNBG over competing undertakings. This represents a clear violation of the second Altmark criterion.

2.3 Assessment of the third Altmark criterion

The third Altmark criterion states: “the compensation cannot exceed what is necessary to cover all or part of the costs incurred in the discharge of public service obligations, taking into account the relevant receipts and a reasonable profit for discharging those obligations.”¹⁸ As has already been elaborated under 2.1.i–2.1.iv, NNBG has not been allocated with any public service obligation. Even if this were the case, the CfD mechanism would not comply with the required compensation level in the third Altmark criterion. To ensure that the compensation does not exceed the amount necessary to

¹⁶ Ibid., p. 16.

¹⁷ Ibid., p. 22.

¹⁸ Ibid., p. 16.



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cover all or parts of the costs, it should be limited to the costs resulting from constructing and operating the nuclear plant, or from supplying a set amount of electricity.

Notwithstanding, the British government has not signaled what the costs of the public service obligation would be. In addition, the UK has not yet indicated that the compensation resulting from the differences between Strike Price and reference prices would not go beyond these costs. Further, the Commission notes that the level of profit was negotiated with NNBG and it doubts that the amount of capital return is within the limits of the return of capital required by a regular undertaking. This aspect not only questions compliance with the third Altmark criterion but also compliance with the alleged SGEI.

In addition, the CfD does not ensure that the compensation is limited to that level of profit over the duration of the project. Depending on the evolution of electricity prices in the UK after the CfD period, the profits made by NNBG might be considerably higher than the negotiated rate of return. Since the plant has a life span of 60 years and the CfD only applies for 35 years, NNBG can expect market price profits of 25 more years without any correction. It is impossible to foresee what the amount of profit for NNBG will be, considering the CfD and post CfD period. Hence, if the CfD were considered as a SGEI compensation mechanism, "it does not ensure that the compensation will not exceed a reasonable rate of return."¹⁹ The Commission points out that over the entire period of the project, NNBG can expect a „super-normal rate of return“²⁰, which would be allowed through State aid.

Another uncertainty in the CfD is related to the discounting of fixed costs. The UK claims that NNBG's estimate of the weighted average cost of capital of the plant is a reasonable value to assess the project. However, even a small change in the rate would cause major changes in the project results. The CfD does not possess any correction mechanisms, therefore it does not account for this uncertainty and cannot even ensure a reasonable rate of capital return over the duration of the Investment Contract.

¹⁹ Ibid., p. 23.

²⁰ Ibid.



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2.4 Assessment of the fourth Altmark criterion

The fourth Altmark criterion states: "where the undertaking which is to discharge public service obligations, in a specific case, is not chosen pursuant to a public procurement procedure which would allow for the selection of the tenderer capable of providing those services at the least cost to the community, the level of compensation needed must be determined on the basis of an analysis of the costs which a typical undertaking, well run and adequately provided with the necessary means, would have incurred in discharging those obligations, taking into account the relevant receipts and a reasonable profit for discharging the obligations."²¹ NNBG was not chosen pursuant to a public procurement procedure, which the UK does not deny. However, the British government claims that the level of compensation was determined on the basis of an analysis of the costs a regular undertaking would face. Furthermore, it considers NNBG as well-run, the rate of return of the Investment Contract as reasonable, and the Strike Price was supposedly calculated on the basis of NNBG's costs of construction and operation.

The Commission and I refute the position of the British government. The Strike Price will be substantially higher than the estimated average market price (reference price), which is the best benchmark for such calculations. The reference price, however, will, according to the British authorities, be too low and would not have attracted enough investment within the envisaged time frame. Nonetheless, a lack of investment does not excuse an unreasonable rate of return and hence profit. Thus, the CfD does not determine the amount of compensation on the basis of a typical undertaking.

According to the Commission, the calculations by the UK "do not ensure that the Strike Price does not exceed the average cost structure of efficient and comparable undertakings in the sector under consideration and do not ensure that the service is provided at the least cost for the community."²² Fouquet agrees with this assessment by pointing out: "that the strike price will be set at a level that allows EDF [NNBG] to make unreasonable profits. Thus, State support would not be limited to the amount strictly necessary."²³ Furthermore, the Commission and Fouquet, repudiate the idea that the technology of the Hinkley Point C reactor might be a reason to justify an unreasonable

²¹ Ibid., p. 16-17.

²² Ibid., p. 25.

²³ Fouquet, Dörte/ Thomas, Steve: The New UK Nuclear Programme – A Fit for Nuclear and a Blueprint for Illegal State Aid?, p. 24.



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compensation. The reactor of Hinkley Point C is not a new invention as it remains within the traditional nuclear reactor technology.

To put it in a nutshell, none of the four Altmark criteria are being met by the measure. Fouquet comes to the conclusion: "the proposed CfD scheme would constitute State aid within the meaning of Article 107(1) TFEU [and] neither under the current framework for the assessment of the compatibility of State aid with the internal market nor under possible future frameworks could the CfD scheme for nuclear generators be declared compatible with European State aid rules."²⁴ In accordance with this view, the Commission states it cannot exclude that the Investment Contract will provide NNBG with a "selective advantage."²⁵ This means that the notified measure does qualify as State aid under Article 107(1) TFEU, which means that it distorts competition by favouring the undertaking and, in so far affects trade between Member States. Therefore it is incompatible with the common market and contradicts European law.

3. Conclusion

Nuclear energy has been used for commercial power generation for 60 years. Still, it is not possible to build a new nuclear power station without state aid or in this matter, a fixed Strike Price. A technology that does not pay off without subsidies after such a long time is economically not viable. It is highly questionable why such a form of power generation should still be aided and promoted by the state.

Although there is a wide field of research areas, huge problems with nuclear energy remain unsolved. Worldwide, there is no repository for high-level radioactive waste available. Also, the United Kingdom has no plan for the disposal of their high-level radioactive waste in the future. And even though, a few countries, including Germany, are at the very beginning of the search for a disposal site it will take decades to develop it. Nevertheless, the risks of the millions of years that the radioactive waste has to be contained will remain. A problem further generations will have to cope with.

²⁴ Ibid., 29.

²⁵ European Commission (2013): State aid SA. 34947 (2013/C) (ex 2013/N) - United Kingdom Investment Contract (early Contract for Difference) for the Hinkley Point C New Nuclear Power Station, C(2013) 9073 final, Brussels, p. 26.



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Even though the United Kingdom claims that the reactor type²⁶ they want to use is safer than older reactors, there will never be a 100% security when it comes to nuclear power. There is no such thing as complete nuclear safety. The costs of a nuclear accident, not only the financial aspect but especially the personal tragedies, are difficult to estimate. What is clear, however, is that there will be huge costs when it comes to compensation, decontamination and decommissioning of the nuclear power plant – for which the operators are not being held accountable for.

In my opinion, it is clear that the new construction of nuclear power plants cannot be aided by a long-term and guaranteed feed-in rate. The British plan to subsidise Hinkley Point C is not compatible with the State aid rules of the European Commission. I am strongly opposed to nuclear energy, which I consider to be expensive and a high risk technology which causes huge environmental damage in case of a nuclear accident.

Since we share the same environment which does not recognise borders, I am asking the Directorate-General Competition of the European Commission to reject the British plan to promote more nuclear power in Europe. An accident anywhere is an accident everywhere!

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²⁶ The planned reactor is called European Pressurized Reactor (EPR). Currently there is no operating EPR. The first projects, Olkiluoto in Finland and Flamanville in France, have faced ongoing problems since the very beginning of their construction. The constructions have been delayed several times and the costs have overrun the projects. Investors have withdrawn from the projects.