RESPONSE TO EUROPEAN COMMISSION CONSULTATION
LONDON UK
4.4.14

STATE AID 34947 (2013/C) (EX 2013/N) UK INVESTMENT CONTRACT (EARLY CONTRACT FOR DIFFERENCE) FOR THE PROPOSED HINKLEY POINT C NEW NUCLEAR POWER STATION

PROCEDURES RELATING TO THE IMPLEMENTATION OF COMPETITION POLICY EUROPEAN COMMISSION STATE AID — UK

Invitation to submit comments pursuant to Article 108(2) of the Treaty on the Functioning of the European Union (Text with EEA relevance) (2014/C 69/06)

1. Communal Response

1.1 This communal response from a very large set of key UK and pan-EU energy policy and civil society stakeholders, includes cross-party UK Members of Parliament serving on UK energy and environment Parliamentary Committees, high-level UK and pan-EU energy industry practitioners and experts, a very broad range of independent UK academics and consultants, and an element of UK and pan-EU Members of the European Parliament.

2. Context

2.1 Recent climate research confirms that, over the next few decades, there will be unprecedented global change affecting European human welfare and environmental systems. EU policy already seeks to mitigate this change through low-carbon policies but adaptation will clearly be necessary. Achieving this change and adaptation at the pace and scale required will not be straightforward, and future energy choices and trade-offs will play a critical role, with significant implications for Member State and EU energy policy. Creating a low carbon and resource efficient economy will involve major structural changes to the way EU States work and live, including how we source, manage and use our energy.

2.2 The challenge of achieving a transition to sustainable energy will involve different options. These options will vary in their acceptability to differing sections of EU policy and public energy stakeholders, and will also vary from Member State to Member State - given their differing cultural, industrial, and energy landscapes. So we are faced with collective choices - and the European Commission Consultation into whether UK subsidies for new build nuclear contravenes EC State Aid legislation will

directly inform these choices.

2.3 For example, an informal group of 12 EU countries 'interested in nuclear power generation' stated in their communiqué following their recent meeting in London in March 2013[1], that:

> A number of countries noted that they would continue to closely follow developments in the UK's Electricity Market Reform process in order to assess the applicability of this approach to their own countries[2].

2.4 The result of the state-aid investigation into HPC will therefore be an important precedent and will have consequences not just in UK but in a large number of other Member States. Taken across the full range of public and private actors engaged in energy systems, annual commitments worth many billions of pounds rest on the results of this EC policy appraisal.

2.5 Whilst the UK government had promised the UK public electorate that new nuclear plants will only be built on the condition that they receive no public subsidy, it later adapted its position by stating that State Aid for nuclear would not be considered a subsidy if it were available to other energy technologies. However, it remains true that the particular negotiations around the Investment Contract for Hinkley Point C (HPC) provides for extra support and special conditions for nuclear, exceeding any potential support for renewable energy.

2.6 Although the UK government now confirms that the Investment Contract, credit guarantee, and the establishment of a Strike Price with NNBG[3] would be financed by the State and from resources under control of the state - it now contends that these public subsidies are justified because new nuclear performs a Service of General Economic Interest (SGEI) under Art 107(1) TFEU.

2.7 As a further fall-back position, the UK government argues that even if their plans to subsidise new nuclear fail the criteria for a SGEI, then State Aid subsidies are necessary and proportionate under Art 107(3) (c) TFEU. There are 4 specific 'Altmark' criteria that need to be fulfilled in order to meet the requirements of a SGEI.

2.8 The UK government also contend that state subsidies for new nuclear development at HPC are aimed at the following shared EU objectives: security of supply, diversity of generation, decarbonisation, electricity price stability and affordability. However, along with the Commission, we doubt that the notified measures can be said to realistically address these issues in a timely manner, and question whether the Investment Contract can be viewed as demonstrating that NNBG should be entrusted with a SGEI.

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[1] Bulgaria, Czech Republic, Finland, France, Hungary, Lithuania, Netherlands, Poland, Romania, Slovakia, Spain and the UK.

[2] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/185076/draft_note_informal_ministerial_meeting_eu_countries_nuclear_power_gen.pdf

[3] A consortium currently led by EDF incorporating Chinese state-owned companies CGN and CNNC and the reactor vendor Areva.

3. Security of Supply

3.1 Putting aside the potential for significant construction cost and time over-runs, the two proposed HPC reactors will not make a timely contribution to UK security of supply, since the reactors are not projected to come on-stream until 2023 at the earliest - and as the Commission notes, the UK government states that any generation adequacy problem is forecast by Ofgem before 2020. Thus the real security of supply challenge occurs well before HPC could begin generation, and it is very likely that other less risky, more effective and sustainable options can be deployed to meet any energy gap.

3.2 There is a misconception that all except one of the UK's 8 operating nuclear power plants will be closed in 2023. EDF, the owner of these plants has said that the two oldest plants, Hinkley Point B and Hunterston B, will probably be closed in 2023 after 47 years of operation, to coincide with the proposed start-up of HPC. However, EDF has also said that it will apply for life extension for the other five plants with the expectation that their average life would be 42 years. This would mean that these five plants would continue in operation to 2027-31 and potentially longer if they were operated for 47 years. So the perception of a rapid reduction in UK nuclear generating capacity in 2023 is simply misplaced.

3.3 Furthermore, the European Pressurised Reactor (EPR) design planned for HPC is a high-value and high-risk construction project with a marked tendency for significant delay and delay claims, cost growth and investor risk. Taking into consideration the experience of the two EPR new-builds in Finland and France, there can be little confidence that the long-running time and cost over-runs in both countries will be will not be repeated at HPC. And in China, where oversight regulation may not be as thorough as in the UK, there are reported delays of between 15 and 13 months for the two EPRs under construction there. Areva currently refuse to explain what is behind these over-runs[4].

3.3 The Olkiluoto 3 EPR in Finland was originally planned to go online early in 2009, but the plant owners, TVO, do not give an expected completion date - although they now state it will not be before 2018. The 1.6 GW Areva designed EPR, originally priced at EUR 3 billion, was estimated at €8.5bn in 2012 and rising. This fixed price turn-key Contract is subject to ongoing legal dispute between the French and the Finns with the former claiming compensation of EUR 1 billion for alleged failures, and the latter demanding €2.4 billion in compensation for delays. Areva have reduced its workforce at the Olkiluoto site and by March 2014, it was not clear what construction work was still being carried out.

3.4 Similarly, in France, EDF have confirmed that their EPR new build at Flamanville is experiencing significant time and cost over-runs. Originally scheduled to start operating in 2012, EDF now hope that the reactor may be operational by 2016.

[4] http://www.energyintel.com/pages/articlesummary/841705/newbuild--taishan-s-delays-hinder-further-areva-epr-sales

Originally priced at €3.3 billion, the reactor completion is currently estimated at €8.5 billion.

4. Diversity of Supply

4.1 The energy landscape within Europe embraces choices and trade-offs over supply-side, demand-side, transmission and load-balancing infrastructure. European energy policy offers a relatively open and flexible framework in which Member States can develop collective action on energy issues. The development of sustainable and affordable low carbon energy remains a growing economic sector with huge potential for job creation. To seek to delimit this diversity through particular State Aid support of nuclear power at the expense of other, potentially more flexible, safe, productive and affordable technologies seems, at the very least, unwise.

4.2 The UK government state that HPC Contract will be signed on its behalf by a new 'counterparty body' yet to be established. This body will have a budget of about £1.5bn per year to spend on low-carbon projects up to 2020. Although no budget commitments have been made beyond that date, the British government will be contractually obliged to provide on-going State Aid to pay the Contract for HPC. The cost of this will depend on the prevailing electricity wholesale price - however, it is likely to be in the order £1.2bn for the two HPC reactors. Given the UK government hopes further nuclear capacity will follow on from HPC, even though the budget will be cumulative, it is likely that very little money will remain for other low-carbon sources - as the counter party body budget will have been largely pre-empted by commitments to nuclear.

4.3 We also agree with the Commission, that the Investment Contract and Loan Guarantee regimes are addressed specifically at supporting nuclear technology alone. As the Commission concludes:

> Nuclear energy generation has the capacity to crowd out alternative investments in technologies or combinations of technologies, including renewable energy sources, which are likely to emerge in the absence of specific UK State Aid subsidies for new nuclear at HPC.

4.4 The Commission, concerned at the failure to consider a purposeful energy efficiency stimulus as an alternative investment and decarbonisation strategy, also notes that:

> The UK considers that gains from demand side measures which go beyond those achieved through existing policies cannot be considered certain, in particular since the demand side market might take time before becoming effective.

4.5 As discussed, HPC will not be functioning until 2023 at the earliest. In contrast, serious energy efficiency policy scenarios show that the UK economy could flourish whilst using significantly less energy. There is no question that, with purposeful demand side policies, UK GDP can increase, whilst energy consumption can significantly decrease.

4.6 However, DECC seem unresponsive within their forward policy to the very real potential for significant returns from energy efficiency and demand side management measures. As the Commission states:

> It is unclear what impact the plant might have on commercial activities being undertaken on the demand side of the market… some of these activities, despite the current, relatively embryonic, state of the technology used, are the object of investment by private operators and can be profitable.

5. Decarbonisation

5.1 Reduction of carbon emissions either by energy efficiency measure or development of low carbon energy generation is imperative in a warming world. The key question is whether HPC will prove cost-effective in achieving this goal as compared to other routes.

5.2 We share the Commissions concern about balancing the twin imperatives of decarbonisation and the protection of the environment. Nuclear has been re-framed as a significant response to climate change. However, proposed new HPC reactors, together with radioactive waste stores including spent fuel, will be located on the coast, increasingly vulnerable to sea-level rise, flooding and storm surge associated with climate change. The UK Institute of Mechanical Engineers clearly state that nuclear sites based on the coastline may need considerable investment to protect them against rising sea levels, or even abandonment or relocation in the long term[5].

5.3 Given predicted sea level rise - shoreline erosion, coastal storms, floods, tidal surges and the evolution of 'nuclear islands' stand out as primary concerns at coastal locations. Thus, adapting nuclear power to climate change is likely to entail either greatly increased expense for construction, operation, waste storage and decommissioning - or the incurring of significant costs to the environment, public health and welfare. It is unsettling to note that future likelihood and consequences of flooding risk has not yet been fully assessed by UK regulators.

5.4 Nuclear life-cycle CO2 emissions also occur through uranium mining and milling, transport, fuel enrichment, plant construction, operation, plant decommissioning and waste management. Whilst the reported range of emissions for nuclear energy over the lifetime of a plant is from 1.4 g of carbon dioxide equivalent per kWh (g CO2e/kWh) to 288 g CO2e/kWh, the mean value is 66 g CO2e/kWh[6]. The contribution of nuclear power to decarbonisation may be further relativised, taking into account declining Uranium ore grades. Although emission values are still lower than those of coal or oil (600-1200 g/kWhel), they remain significantly higher than for wind (2,8-7,4 g/kWhel), hydropower (17-22 g/kWhel), photovoltaic (19-59

[5] Institution of Mechanical Engineers (2009): *Climate Change: Adapting to the Inevitable*, Institution of Mechanical Engineers, Westminster, London.
[6] Sovacool B.K. (2008): *Valuing the Greenhouse Gas Emissions from Nuclear Power*: A critical survey, Energy Policy 36, pp. 2940-2953.

g/kWhel), and energy efficiency measures (which are *circa* 10 times more cost-effective)[7].

5.5 The Commission states that it is unclear whether nuclear technology is immature enough to warrant State Aid. Given that the commercial history of nuclear power goes back more than 50 years and that the EPR is clearly evolved from existing designs (rather than being a revolutionary new design), there is no case to argue that the EPR is an 'infant' technology. By contrast, many of the alternatives, such as renewable technologies like solar power, are rapidly developing with significantly real cost reductions.

5.6 Thus, along with the Commission, we question how far UK State Aid for the proposed reactors at HPC really contributes to the sustainable decarbonisation of the UK electricity sector, and of its economy as a whole.

6. Affordability and Price Stability

6.1 It is difficult to comprehend how HPC might contribute to affordability, price stability and least-cost for the UK energy consumer - when the agreed strike price is overwhelmingly likely to contribute to significantly higher energy prices. However, it does remain true that, provided there are no major problems in construction, the deal would prove very profitable to NNBG during the lengthy 35-year Contract period. Very generous UK government proposals for 35-year inflation indexing of the Strike Price will also contribute to granting NNBG further significant returns

6.2 Several emergent renewable energy technologies may prove much more cost-effective than HPC. The HPC proposal is being offered a much longer Contract compared to large scale renewable energy (35 years as opposed to 15 years). In addition, the bulk of the financing of HPC will be afforded government Loan Guarantees which will not be available to most renewable energy schemes, putting renewable energy schemes at a considerable disadvantage.

6.3 The opportunity cost of the investment in HPC is investment in renewable energy generation. The UK government Levy Control Framework imposes a strict cap on additions to cross-incentives for low carbon energy sources financed from effective levies on the bills of energy consumers. Therefore, proposed investment in HPC will crowd out investment in renewable energy for the length of the Contract for Difference (CfD) - which is 35 years from around 2023 - regardless of whether renewable energy options are competitive in this very long-term policy window. In the process, progress towards achieving overall EU targets for renewable energy will be compromised.

6.4 A recent report by 'Carbon Connect', a UK cross-party think-tank chaired by former Conservative energy minister Charles Hendry, concludes that, if the plant is built to time and cost, returns for French utility EDF and other investors in HPC would be much higher than for other projects, with expected equity returns at around

[7] Wallner A., Wenisch A., Baumann M., Renner S. (2011): *Energy Balance of Nuclear Power Generation - Life-cycle Analysis of Nuclear Power: energy balance and CO2 emissions*, Österreichisches Ökologie-Institut, Austrian Climate and Energy Fund, Vienna.

19-21%. These returns are substantially higher than expected equity returns on Private Finance Initiative projects and regulated electricity network assets[8].

6.5 Further analysis suggests that NNBG could earn a return on equity well in excess of between 20-35%, with cash dividends of between £65-80 billion payable during the life of the CfD. It should also be noted that paying for these dividends would still allow EDF to pay off all construction cost debt within the terms of the CfD. Taking as read current construction costs at £8 billion per reactor, this translates to £5 per MW - making HPC the most expensive nuclear power station ever built[9].

6.6 We conclude that this cumulative significant financial over-compensation constitutes incompatible State Aid, and does not fit within the SGEI Framework.

7. Market Distortion

7.1 As the Commission points out, the role of State Aid control is increasingly important in EU electricity markets, and any investment in nuclear should be carried out in ways which do not distort competition.

7.2 We concur with the Commissions analysis that since nuclear power has been and is being considered a viable commercial activity - then HPC should not require special financial support from the UK government. In other words, the base-load electricity that HPC may generate could and should be provided through normal market mechanisms. In this context, Finland has announced a deal to build a reactor that will be paid a power price of less than €51 per MWh - in other words €60 per MWh less than that proposed for HPC. And French consumers are currently only paying €45/MWh for nuclear electricity.

7.3 Furthermore, we agree with the Commission that the CfD provides certainty of a stable revenue stream under lenient conditions by entirely eliminating market risks from the commercial activity of nuclear electricity generation for the 35-year Contract length. Rather than arriving at length of Contract through transparent and objective means, it seems clear that the Contract has been tailored to the requirements of NNBG. Proof of this is that these Contract lengths are not available to other CfDs - particularly those for renewable energy. In this sense, UK government dealings with NNGB seem deeply discriminatory.

7.4 The creation of targeted State financial structures such as the Investment Contract and the credit guarantee seem clearly specifically designed to develop HPC at the expense of other low carbon investments. Given this level of financial support is unavailable to other low carbon technologies, it is certain to significantly distort competition and strongly impact on trade between Member States. Here, we agree with the Commission that the Investment Contract and credit guarantee would have substantial repercussions on pan-EU trade and competition and involve State Aid within the meaning of Art 107(1) TFEU.

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[8] Carbon Connect, Leveque F and Robertson A (2014): *Future Electricity Series Part 3: Power from Nuclear*, Carbon Connect, Policy Connect, London.

[9] http://www.spectator.co.uk/features/9141142/why-has-britain-signed-up-for-the-worlds-most-expensive-power-station/

7.5 In order to facilitate the participation of renewable energy technologies in energy markets, the EU relies on price mechanisms rather than directly planning specific outcomes for specific technologies. For this approach to work it is essential that distorting subsidies are not allowed to appear, since a subsidy in one country may potentially impact across the whole EU in terms of access to the electricity market.

7.6 Given increased renewable energy pooling is very likely to allow for greater European-wide balancing between technologies such as solar in the south of Europe, hydro electric power in the north and wind in the west - then disproportionate nuclear subsidies are likely to reduce the size of the available market for these technologies to participate in, and increase the difficulty of establishing new renewable generation capacity across the whole EU, not just in the UK. If the precedent is accepted for nuclear specific subsidies in the UK, then other countries may follow the UK's lead - further reducing renewable energy participation across the EU market.

7.7 In this context, we agree with the Commission that UK State Aid for HPC is capable of severely distorting market dynamics, precisely because it shields the beneficiary from risks that other market operators are subject to. Thus, since there exists a competition failure in electricity generation in respect to planned UK State Aid for HPC, it cannot represent a genuine SGEI. Here, UK plans to provide operating State Aid through price support mechanism to guarantee profitability are not compatible with EU State Aid rules, and the proposed Investment Contract will provide NNBG with a clear selective advantage.

7.8 Along with the Commission, we also doubt that the level of profit used to set the Strike Price corresponds to the rate of return of a typical company for the whole duration of the period of entrustment, taking into account the level of risk.

8. Tail-End Risks

8.1 We concur with the Commission that nuclear is subject to unparalleled and extreme ‘tail-end risk’ involving low-probability but extreme high-impact risk under conditions of scientific uncertainty and technological complexity. Key to the interpretation of tail-end risk is the conceptual analytical modeling tool, Probabilistic Risk Assessment (PRA).

8.2 PRA modeling calculations are critically important to the regulatory nuclear ‘Safety Case’ for HPC, as they underpin the concept of ‘acceptable risks’ and ‘tolerable consequences’ under ‘fault conditions’ - whereby the risk of an accident must be acceptable, and the radiological consequences tolerable. However, given the degree of uncertainty and complexity attached to even the most tightly framed and rigorous modeled nuclear risk and liability assessment - attempts to weight the magnitude of accident by the expected probability of occurrence has proven problematic. This has significant implications for the HPC proposal, in that PRA failed to conceive or capture the cascade of unexpected ‘beyond design-base’ accidents that occurred in Fukushima and all other previous major nuclear accidents.

8.3 Given that the radiological inventory for each EPR at HPC is twice that of the largest nuclear reactor currently operating in the UK, it is unsettling to reflect that the NNBG ‘Safety Case’- based on their PRA - claims that for the very worst reasonably

foreseeable accident/incident at HPC (including terrorist attack), the maximum rate of release in the form of a containment bypass would not exceed 0.03% of the reactor core inventory per day[10]. In this context it is also unfortunate to note that all UK civil nuclear infrastructures are uniquely implicated in all four 'tier-one threats' identified in the UK National Security Strategy[11].

8.4 Probability of accident informs likelihood of occurrence and hence potential liability. However, costs relating to liability insurance are uncertain, since they are extremely difficult to forecast. Never the less, recent events at Fukushima support the conclusion that reactor accidents are the single largest financial risk facing the nuclear industry, far outweighing the combined effect of market, credit, and operational risks.

8.5 Currently, European nuclear accident liability for any one accident is capped at €169 million. The Paris Convention on Nuclear Third Party Liability and Brussels Convention aims to raise this to ensure that victims of a nuclear incident are compensated for resulting damage[12]. Under the proposals, nuclear operators would be liable for the first €700 million for any accident, with the national government having the option of adding a maximum of a further €500 million towards the company's liabilities. Collectively, other signatory states could contribute a further €300 million, bringing the total available to €1.5 billion for any one major nuclear accident if the Convention is eventually ratified. However, given that the Institut de Radioprotection et de Sûreté Nucléaire (IRSN – a French governmental radiation research institute), conclude that a serious accident would cost France about €120 billion euros, or 6% of its GDP[13], and that liability estimates for Fukushima vary between many tens of billions of euros and many hundreds of billions of euros - then even this new proposed level of pan-EU cover may not suffice, by a very large margin (many orders of magnitude), to account for liability in case of a major nuclear accident in Europe.

8.6 Actuarial analysis supports this view. Full insurance against nuclear disasters may increase the price of nuclear electricity by up to €2.36 per kilowatt hour (kWh)[14] - a sum that would significantly weaken the economic case for nuclear power compared to other low-carbon sources. Furthermore, to the extent that liability rules provide incentives for prevention, the financial limit on the liability of an operator may lead to under-deterrence - since, as a result of the financial cap on liability, the potential complementary function of liability rules in providing additional deterrence may be lost.

9. Waste

[10] NNBG Company Limited (2011): Radioactive Substances Regulation Environmental Permit Application, UK EPR, Hinkley Point C.
[11] HM Government (2010): *A Strong Britain in an Age of Uncertainty: The National Security Strategy*, Presented to Parliament by the Prime Minister, October 2010, Cm. 7953, London.
[12] Paris Convention (2011): Protocols to Amend the Brussels Supplementary Convention on Nuclear Third Party Liability, No. 26.
[13] http://www.irsn.fr/FR/Actualites_presse/Actualites/Documents/EN_Eurosafe-2012_Massive-releases-vs-controlled-releases_Cost_IRSN-Momal.pdf
[14] Versicherungsforen Leipzig GmbH (2011): *Calculating a Risk-Appropriate Insurance Premium to Cover Third-party Liability Risks that Result from Operation of Nuclear Power Plants*, Günther B, Karau T, Kastner E-M, Warmuth W, Leipzig.

9.1 We share the Commissions concerns about features of nuclear energy, which distinguish it from any other electricity generating technology or from any other technology. In particular, the Commission acknowledges that costs linked to the treatment and management of spent fuel and nuclear waste are difficult to estimate since they take place a long time in the future and there is still little real practical experience.

9.2 Recent estimates are that, once packaged, the UK has around 1,420 cubic metres of high-level radioactive waste, 364,000 cubic metres of intermediate-level radioactive waste, and 3,470,000 cubic metres of low-level radioactive waste[15]. The time-frame in question when dealing with radioactive waste ranges from 10,000 to 1,000,000 years[16]. Government officials estimate that the cost of managing this waste and decommissioning is currently around £80-100 billion (and rising). A recent report by the House of Commons Committee of Public Accounts and Nuclear Decommissioning Authority points out that DECCs nuclear legacy budget currently costs the UK over £2.5 billion a year (42% of DECC's total budget)[17], with the remaining financial burden discounted for very many years.

9.3 HPC would significantly add to the UK nuclear waste inventory. This is because NNBG propose to deploy 'High Burn-up Fuel' at the two EPR's at HPC - with significantly more enriched uranium used as reactor fuel to increase burn-up rate for longer periods and at higher temperatures, resulting in considerably hotter and more radioactive spent fuel.

9.4 Furthermore, under new proposals, the UK government would carry the full liability for major accidents from decommissioning. Paradoxically, given current UK nuclear accident liability arrangements, DECC explains that because of the nature of nuclear activities, the maximum figure for the potential liability is impossible to accurately quantify[18]. In practice, this new measure is likely to obtain for HPC decommissioning.

9.5 It also should be noted that UK radioactive waste policy is predicated on the disposal of very long-lived nuclear waste via a geological disposal facility (GDF). However, at present, there are no secure estimates for costing a UK GDF, and no GDF has been constructed or operated successfully anywhere in the world. Plans for siting a GDF in Cumbria have met with substantial opposition from the Cumbrian elected local authority.

10. Transparency and Accountability

10.1 EC Guidelines emphasise the need for transparency regarding State Aid measures - however Contract negotiations between the UK government and NNBG are simply not sufficiently transparent. Although DECC have provided press-release

[15] https://www.nda.gov.uk/ukinventory/the_inventory/2010-inventory.cfm
[16] US National Research Council (1995): Technical Bases for Yucca Mountain Standards, Washington, D.C. National Academy Press.
[17] http://www.parliament.uk/business/committees/committees-a-z/commons-select/public-accounts-committee/news/nuclear-decommissioning-authority-managing-risk-at-sellafield/
[18] https://www.gov.uk/government/speeches/contingent-liability-indemnification-by-the-nuclear-decommissioning-authority

summaries, key terms of the deal have not been made fully available to the public either in the UK or the EU, and there is insufficient detail to allow for considered expert examination.

10.2 In the context of openness, transparency and necessary accountability to the UK and EU public and policy-making communities, the UK government should provide full details of the terms of the Contract, and articulate how it explored alternative options, including other funding devices and mechanisms that may have the potential to achieve similar energy transition goals.

11. Conclusions

11.1 The EC Consultation into whether UK subsidies for new build nuclear contravenes EC State Aid legislation will directly inform the future direction of EU energy policy. Long-term decisions across the entire field of industrial strategy depend on the resulting pictures. Taken across the full range of public and private actors engaged in energy systems, annual commitments worth many billions of pounds rest on the results of this EU policy appraisal. The result of the investigation will therefore be an important precedent and will have consequences for a large number of other Member States.

11.2 The UK government contend that state subsidies for new nuclear development at HPC are aimed at security of supply, diversity of generation, decarbonisation, electricity price stability and affordability. However, there are substantive doubts that the notified measures can be said to realistically address these issue in a timely or cost effective manner.

11.3 The creation of targeted State financial structures such as the Investment Contract and Credit Guarantee have been specifically designed to develop HPC in the UK at the expense of other low carbon investments. This significant financial over-compensation is incompatible with State Aid legislation and does not fit within the SGEI Framework.

11.4 Given this level of financial support is unavailable to other low carbon technologies, it is certain to significantly distort competition and strongly impact on trade between Member States - precisely because it shields the beneficiary from risks that other market operators are subject to. And since there exists a competition failure in electricity generation in respect to planned UK State Aid for HPC, it cannot represent a genuine SGEI.

11.5 Here, we argue that it is essential that distorting subsidies are not allowed to appear, since a subsidy in one country may potentially impact across the whole EU in terms of access to the electricity market. Given increased renewable energy pooling is very likely to allow for greater European-wide balancing between technologies such as solar in the south of Europe, hydro electric power in the north and wind in the west - then disproportionate nuclear subsidies are likely to reduce the size of the available market for these technologies to participate in, and increase the difficulty of establishing new renewable generation capacity across the whole EU, not just in the UK. If the precedent is accepted for nuclear specific subsidies in the UK, then other

countries may follow the UK's lead - further reducing renewable energy participation across the EU market.

11.6 In addition, we agree with the Commissions initial view that even if NNBG were to be seen as entrusted with a SGEI, State Aid for the provision of a SGEI may not comply with the SGEI Framework. In fact, it would appear that the UK's main, indeed only, argument to claim the existence of a SGEI is that the Investment Contract will provide incentives for NNBG to build the nuclear plant under a specified time-frame - an unconvincing and insufficient argument.

11.7 It is difficult to comprehend how HPC may contribute to affordability, price stability and least-cost for the UK energy consumer - when the agreed strike price is overwhelmingly likely to contribute to significantly higher energy prices. However, it does remain true that the deal would prove very profitable to NNBG during the very lengthy 35-year Contract period.

11.8 Furthermore, we agree with the Commission that the proposed CfD would provide the utmost certainty of a stable revenue stream under lenient conditions by entirely eliminating market risks from the commercial activity of nuclear electricity generation for the very long 35-year Contract length. Rather than arriving at the length of Contract through transparent and objective means, it seems clear that the Contract has been tailored to the requirements of NNBG. Proof of this is that these Contract lengths are not available to other CfDs - particularly those for renewable energy. In this sense the UK government dealings with NNGB seem deeply discriminatory.

11.9 Thus, UK government plans to provide operating State Aid through price support mechanism to guarantee profitability are incompatible with EU State Aid rules, and the proposed Investment Contract will provide NNBG with a clear selective advantage. In addition, UK government claims that State Aid support is necessary in order to address 'market failure' seem deeply misplaced.

11.10 We share the Commissions concerns about other features of nuclear energy, which distinguish it from any other electricity generating technology or from any other technology, in particular the issue of very long-lived radioactive waste. And we concur with the Commission that nuclear is subject to unparalleled and extreme ‘tail-end risk’. Recent events at Fukushima support the conclusion that reactor accidents are the single largest financial risk facing the nuclear industry, far outweighing the combined effect of market, credit, and operational risks.

11.11 In short, proposed UK government State Aid for HPC is incompatible, does not represent a genuine SGEI, will distort the European energy market, is neither transparent nor proportionate, and unfairly discriminates in favour of nuclear.

11.12 The development of sustainable and affordable low carbon energy remains a growing economic sector with huge potential for job creation. To seek to delimit this diversity through particular State Aid support of nuclear power at the expense of other, potentially more flexible, safe, productive, cost-effective and affordable technologies seems, at the very least, unwise.

We hope that this submission is helpful and we would welcome the opportunity to discuss any issue it raises in greater detail.

CO-SIGNATORIES

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John McDonnell (UK Labour Member of Parliament, Member of the UK Parliamentary Justice Select Committee).

Mark Durkan MP (Northern Ireland Social Democratic and Labour Party Member of Parliament, served as Deputy First Minister of Northern Ireland, and former Leader of the Northern Ireland Social Democratic and Labour Party).

Kate Parminter, Baroness Parminter of Godalming (Liberal Democrat Peer in the House of Lords, Member of the House of Lords EU Committee, Member of the House of Lords EU Sub-Committee on Agriculture Fisheries Environment and Energy).

Jean Lambert (Green Member of the European Parliament for London).

Fiona Hall (Liberal Democrat Member of the European Parliament for North East England).

Claude Turmes (Green Member of the European Parliament, Vice-President of the European Parliament Greens/EFA Group, Coordinator of the European Parliament Committee on Industry Research and Energy, Coordinator on Energy Issues for the Green Group, Member of European Parliament Committee on Environment Public Health and Food Safety, Member of European Parliament Committee on Employment and Social Affairs).

Kathleen Van Brempt (Socialist Member of the European Parliament, Member of European Parliament Committee on Industry Research and Energy).

Corinne Lepage (Liberal Democrat Member of the European Parliament, Member of the European Parliament Committee on the Environment Public Health and Food Safety, former French Minister of the Environment, Founder of CAP 21).

Paul Rubig (Christian Democrat Member of the European Parliament, Member of the EU Committee on Industry, Research and Energy).

Ian Marchant (Chairman of Infinis, Chairman Designate of Wood Group, President of the Energy Institute, former Chief Executive of SSE).

Nick Mabey (Chief Executive of E3G).

Katherine Pygott (Associate Director of Infrastructure at Ove Arup).

Mark Anderson (Lead in Distributed Energy at Ove Arup).

Jonathon Porritt (Founder/Director and Trustee of the UK Forum for the Future, Co-Director of the Prince of Wales's Business and Sustainability Programme).

Andrew Warren (Director of the UK Association for the Conservation of Energy, Chair of the British Energy Efficiency Federation, Member of the European Climate Change Programme Working Group).

Prof Stephen Thomas (Professor of Energy Policy, University of Greenwich).

Jeremy Leggett (Founder and Chairman of Solarcentury and SolarAid).

Antony Froggatt (Senior Research Fellow, Energy Environment and Resources, Chatham House).

William Blyth (Associate Fellow, Energy Environment and Resources, Chatham House).

Dale Vince (Founder of Ecotricity).

Gustav Merlin (Chief Executive Officer, Swedish Bioenergy Association).

Howard Johns (Founder, SouthernSolar).

Oliver Tickell (Editor, The Ecologist).

Paul Thompson (Head of Policy, UK Renewable Energy Association).

Louise Wilson (Managing Director, Abundance Generation).

Charles Secrett (Member of the Board of London Development Agency, Chair of the Board of Triodos Bank Renewable Energy Fund, Member of the Advisory Board of Environmental Law Foundation, former Head of UK Friends of the Earth (FoE).

Andrew Mill (Chief Executive, National Renewable Energy Centre).

Paul Barwell (Chief Executive, Solar Trade Association).

Dr Tony Juniper (Independent sustainability advisor and author).

Gerry Wolff (Founder, Energy Fair).

Andrew Tanner (Founder, Plug into the Sun)

Richard Loyen (Managing Director, French Union of Professional Solar).

Toby Ferenczi (Co-Chief Executive Officer, Hanergy Solar).

Giannni Silvestrini (Scientific Director, Kyoto Club and QualEnergia).

Frans van den Heuvel (Chief Executive Officer, Solarcentury).

Sascha Müller-Kraenner (Partner, Ecologic Institute).

Svante Axelsson (General Secretary, The Swedish Society for Nature Conservation.

Dr Johan Swahn (Director, Swedish NGO Office for Nuclear Waste Nuclear Review).

Rainer Hinrichs-Rahlwes (President of the European Renewable Energies Federation and Board Member of the German Renewable Energies Federation).

Dr. Günther Bachmann (Secretary General, Council for Sustainable Development).

Pierre Tardieu (Regulatory Affairs Advisor, Stable Legislative Frameworks EWEA, The European Wind Energy Association asbl/vzw).

Adam Koniuszewski (Chief Operating Officer, Green Cross International).

Carolyn Roberts (Director of the Environmental Sustainability Knowledge Transfer Network, University of Oxford).

Prof Malcolm Eames (Chair of Low Carbon Research, Welsh School of Architecture, Cardiff University).

Prof Brian Wynne (Associate Director of CESAGen, Professor of Science Studies and Research Director of the Centre for the Study of Environmental Change, University of Lancaster).

Dr Ian Welsh (Reader in Sociology, University of Cardiff).

Prof Stuart Weir (Visiting Professor, Government Department, University of Essex, former Director of Democratic Audit).

Prof Dave Webb (Chair of CND, Emeritus Professor of Peace and Conflict Studies, Leeds Metropolitan University).

Dr Matt Watson (Department of Geography, University of Sheffield).

Dr John Walls (School of Geography Earth and Environmental Sciences, University of Birmingham).

Prof Gordon Walker (Chair of Environment Risk and Social Justice, Lancaster University).

Dr David Toke (Reader in Energy Politics, University of Aberdeen).

Dr Alan Terry (Senior Lecturer in Geography, Geography Research Unit, UWE).

Prof Ingmar Schumacher (Professor in Environmental Economics IPAG Business School Paris, Professor in Department of Economics, Ecole Polytechnique Paris).

Prof Peter A Strachan, Group Lead Strategy and Policy Unit, The Robert Gordon University, Aberdeen Business School).

Prof Andy Stirling (Director of Science for SPRU, Co-director Centre on Social Technological and Environmental Pathways to Sustainability, University of Sussex).

Prof Harry Rothman (Institute of Innovation Research, Manchester Business School, University of Manchester).

Dr Jerome Ravetz (Institute for Science Innovation and Society, Oxford University).

Dr Mark Pelling (Reader in Geography, King's College London).

Dr Stuart Parkinson (Executive Director, Scientists for Global Responsibility).

Dr Peter North (School of Environmental Sciences, University of Liverpool).

Dr Maggie Mort (Reader in the Sociology of Science, Technology and Medicine, Lancaster University).

Prof Ian Miles (Professor of Technological Innovation and Social Change, Manchester Institute of Innovation Research, University of Manchester).

Dr Darren McCauley (Department of Geography and Sustainable Development, University of St. Andrews).

Dr David Lowry (Independent research consultant, Specialist in UK and EU nuclear & environment policy).

Dr Mark Lemon (Principal Lecturer Institute of Energy and Sustainable Development, De Montfort University).

Dr Markku Lehtonen (Research Fellow Sussex Energy Group, Science and Technology Policy Research, University of Sussex).

Dr Peter Lee (School of Geography, Earth and Environmental Sciences, University of Birmingham).

Prof Nic Lampkin (Executive Director, UK Organic Research Centre).

Dr Peter Wynn Kirby (Research Fellow, School of Geography and the Environment, University of Oxford).

Bruce Kent (Vice President CND).

Dr Aled Jones FRSA (Director Global Sustainability Institute, Anglia Ruskin University).

Dr Phil Johnstone (Research Fellow, Science Policy Research Unit, University of Sussex).

Dr Kate Hudson (Chair, UK Campaign for Nuclear Disarmament).

Dr Dan der Horst (School of Geography, Earth and Environmental Sciences, University of Birmingham).

Dr Ben Fairweather (Senior Research Fellow Centre for Computing and Social Responsibility, De Montfort University, Editor, Journal of Information, Communication and Ethics in Society).

Dr Ian Fairlie (Independent Consultant, Radioactivity in the Environment).

Dr Nick Eyre (Jackson Senior Research Fellow in Energy at the ECI and Oriel College, University of Oxford, Lead of ECI programme on Lower Carbon Futures, Co-Director of the UK Energy Research Centre).

Prof David Elliott (Emeritus Professor of Technology Policy, Open University).

Prof Andrew Dobson (Professor of Politics, University of Keele).

Tim Deere-Jones (Consultant, Marine Environment and Pollution Control).

Prof Jonathan Davies (Professor of Critical Policy Studies, De Montfort University).

Dr Sarah J Darby (Senior Researcher Lower Carbon Futures, Environmental Change Institute, Oxford University).

Dr Richard Cowell (Senior Lecturer, Environmental Policy and Planning, University of Cardiff).

Dr Matthew Cotton (Sustainability Research Institute, University of Leeds).

Dr Steve Connelly (Department of Town and Regional Planning, University of Sheffield).

Dr Carl Iwan Clowes FFPH (Board member, Public Health Wales).

Dr Jason Chilvers (School of Environmental Sciences, University of East Anglia).

Prof Jake Chapman (Demos Associate, former Professor of Energy Systems, Open University).

Dr Noel Cass (Lancaster Environment Centre, Lancaster University).

Prof Roy Butterfield (Emeritus Professor, Civil Engineering, University of Southampton).

Shaun Burnie (Independent Nuclear Consultant).

Prof Tom Burke (Founding Director of E3G, Chairman of the Editorial Board of ENDS, Visiting Professor at Imperial and University Colleges).

Paul Brown (Visiting Press Fellow at Wolfson College Cambridge, former Environment Correspondent of the Guardian).

Prof Stefan Bouzarovski (School of Environment and Development, University of Manchester).

Prof Andy Blowers OBE (Emeritus Professor Open University, Member of Committee on Radioactive Waste Management 1).

Craig Bennett (Director, Policy and Campaigns, UK Friends of the Earth).

Dr Katherine G Begg (Research Institute for Geography and the Lived Environment), School of Geosciences, University of Edinburgh).

Duncan Bayliss, MRTPI (Senior Lecturer in Geography, University of the West of England).

Prof Keith Barnham (Emeritus Professor of Physics, Imperial College London, Co-Founder and CTO QuantaSol Ltd).

Prof Frank Barnaby (Nuclear Issues Consultant, Oxford Research Group).

Dr Abhishek Agarwal (Senior Lecturer, Energy Strategy, Aberdeen Business School).