Re: European Commission investigation into UK measures supporting nuclear energy, Hinkley C,

State Aid SA.34947 (2013/C)

Submission from Friends of the Earth England, Wales and Northern Ireland

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Friends of the Earth supports interventions in the electricity market to drive decarbonisation. This is appropriate because existing policy measures, such as the EUETS, are not sufficient to deliver climate change objectives at either global, EU or UK levels. Existing measures are not compatible with a high chance of avoiding the EU-agreed global target of preventing 2 degrees of global warming[i]. In addition, fossil fuel production and consumption continue to receive enormous implicit subsidies through not paying the full cost of the damage they incur on people and the environment, and explicit subsidies through, for example, tax breaks to develop shale gas and North Sea Oil and Gas[ii].

In this context, measures such as the Contract for Difference (CfD), feed-in-tariff mechanisms or other policy supports are an appropriate response for Member States to help ensure decarbonisation of economies compatible with tackling climate change. We see measures such as CfD as clearly being State Aid, and that State Aid is appropriate and necessary in many circumstances.

However, although nuclear power has lower carbon emissions than coal or gas power, we contend that there are two main reasons why measures which support nuclear power should not be compatible with the EU's rules on state aid:

- **Other environmental impacts.**

As section 8.1.1 of C(2013) 9073 points out, "*while certain generation technologies emit less carbon emissions, their impact on the environment might nonetheless be considered substantial*". Nuclear generation entails the production of radioactive waste which needs to be managed and stored for many centuries; there is still no robust plan for how that waste can be safely managed on such timescales. There are also small risks of very high impact events – such as at Fukushima and Chernobyl. We contend that these are unnecessary impacts and risks given that there are multiple other pathways to decarbonisation, at similar or lower cost, which do not involve new-build nuclear power. The environmental grounds for providing State Aid do not therefore in our view apply to nuclear power.

- **Mature technology**

Subsidy or State Aid should not exist indefinitely. In the UK, the subsidy given to solar power is falling rapidly – reflecting economies of scale, and general falling costs. However nuclear power is a six decade-old technology whose costs are still not falling[iii], and which is propped up by multiple existing subsidies such as limited liabilities for nuclear disasters and looking after nuclear waste, even before CfD is considered. The amount of subsidy available overall is limited – it should go to technologies which are on a down-ward cost curve, not technologies which require 35 year guaranteed prices six decades after starting commercial operation.

We also dispute the UK Government's claims that support for nuclear energy supports the EU common objectives of decarbonisation, security of supply and diversity of generation:

- **Decarbonisation**

In the UK, the amount of new-build renewables plus nuclear is limited by the Treasury's Levy Control Framework (LCF). If Hinkley is built, then from 2023 (or later) it will be competing directly with renewable generation for that limited pot. DECC's analysis and that of others show multiple routes to decarbonisation – these objectives can be met with more renewables and less nuclear. We note too that DECC's central projection[iv] for electricity generation to 2030 assumes a tailing off in growth in renewables post 2020, and a rapid growth in nuclear post 2025. The renewables projection merely reflects the lack of agreed policy on renewables post 2020 – it would be more realistic to assume continued growth in UK renewables capacity on a similar or faster growth trajectory, given the falling costs of the main renewable technologies.

- **Security of supply**

It is suggested that new nuclear helps with falling capacity margins, and the UK being able to withstand external shocks. However, falling capacity margins will occur before 2020; new nuclear cannot address this, not being ready until 2023 at the earliest. In addition, nuclear is associated with unpredictable shocks which require large amounts of back-up (in contrast to the variability of wind which is to a large degree predictable in advance). For example, in 2012, the UK on at least three occasions[v] saw sudden drops of 600-1000MW as nuclear reactors had to shut down quickly.

DECC's 2050 pathway calculator[vi] allows scenario-planning to see whether the electricity system could cope with a 5 day winter low-pressure system (when wind and solar generation would be low). No-new-nuclear scenarios deal with such situations with a combination of demand-side response, interconnection with Europe, increased electricity storage, and reliance on back-up gas-fired power plants. In our view, the UK Government is not putting enough effort into the first three of these options.

- **Diversity of generation**

To 2030, there would still be some nuclear on the UK power system, while it is gradually phased out. By then, the UK could have a very diverse power system compared with the current mix which is heavily reliant on just two technologies – coal and gas. A decarbonised UK power system by 2030, without new nuclear, would rely on a very diverse mix of 7-10 renewable technologies, some gas, some CCS and a focus on demand-side response, electricity efficiency and greater interconnection with Europe[vii]. New nuclear would if anything mean a less diverse power system, as it crowds out a wider range of renewable technologies.

Finally, we believe that the CfD for nuclear represents **extremely bad value for money** for UK citizens. By the time Hinkley is in operation, solar and on-shore wind will be far cheaper, and falling fast, and it is likely that off-shore wind will be in a similar position. The index-linked 35 year price guarantees, plus loan guarantees, will be bad value in 2023; it will become worse with every passing year.

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i Requires at least 80%+ cuts in EU by 2030. Friends of the Earth, 2010. Reckless Gamblers. December

ii Friends of the Earth, 2013. Fossil fuel tax breaks in the UK. February.

iii ICEPT, 2012. Costs estimates of nuclear power in the UK. ICEPT Working paper.

iv DECC, 2013. Updated energy and emissions projections. September. Annex E

v References in Friends of the Earth, 2012. Wind power – helping keep the lights on. November.

vi DECC. 2050 calculator.

vii Eg Friends of the Earth, 2012. Summary: A plan for Clean British Energy. March.