NOAH Friends of the Earth Denmark and The Danish Ecological Council

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Responses to the Danish Environment Ministry on Fennovoima Nuclear Power Plant, Finland

Firstly, we believe that Denmark by the Ministry of Environment must respond to this consultation and respond in depth on the key issues.

Just like a coal plant due to climate change impacts can no longer be regarded as a purely national matter, nuclear power plants can not either.

In a Danish perspective, the following chapters must invoke the most interest. We comment on some of these.

1.3 Purpose of the project and reasons
The claim is here that electricity from a nuclear power plant is CO2-free. It is not the case.

There are different life-cycle analyses of CO2 emissions from a nuclear plant, but none that claims that it is zero. A study of more than 100 analyses ends with a mean of 66 CO2/kWh (Sovacool, B. Energy Policy 36 , 2950-2963 (2008)) - once the plant is built. (That is six times onshore wind turbines, they are off-the-shelf products and produce electricity from the day the first turbine is erected and connected whereas a nuclear power plant has a very long lead time.)

However, all the analyses have boundaries, and none of them take into consideration the fact that a society that even for a brief period partly relies on nuclear power will have to maintain a special emergency with trained engineers and health physicists for as long as you can see.

Also: the analyses do not include the situation where the plant is shut down because of an internal system failure / crash, lack of cooling water (not applicable to coastal sites) or a crash caused by external factors, such as earthquakes, tsunamis or a terrorist attack or they are shut down following a political decision (e.g. Sweden and Germany).

Fukushima will impact the CO2 footprint of the entire nuclear industry in Japan like Chernobyl has done with respect to the nuclear industry of Soviet Russia/Russia-Ukraine.

4 Alternatives to be assessed
It is striking that no other alternatives are mentioned than the zero alternative 'status quo'.

Denmark must demand that real alternatives studied.

The most radical alternative, which at least should be investigated, would be characterized by

1) energy saving : comprehensive real savings
2) energy efficiency : state-of -the-art efficiency in terms of both electricity and heat across all sectors
3) development of renewable energy to meet the energy needs that remain after 1) and 2)

In other words, what is the argument for building Fennovoima?

5.3 Nuclear safety
5.3.1 Radiation and control
5.3.2 Emergency Operations
5.5 Waste management
5.5.1 Spent nuclear fuel
5.5.2 Low -and medium -level operating waste
The study must answer how waste can be safely stored and monitored for several hundred thousand years - or to make it a bit realistic: for 10,000 years or at least 2,000 years. Not that it is enough, but because no one can look further ahead in a given society.

5.6 Radioactive emissions

7.4.2 Assessment of impacts on water systems
The increased radioactive contamination in the already radioactively polluted Baltic Sea is the most important issue in a Danish perspective.

In addition, the increased heating from cooling water may be an issue concerning the marine life. (To the extent that the cooling water is not used).

7.4.3 Assessment of the impacts of waste and their treatment

7.4.9 Assessment of impacts in abnormal and accident situations
The study should cover the worst case scenario of a class INES 6 accident at Fennovoima.

7.4.10 Transboundary environmental impacts across the borders of Finland
The report must include the risks pertaining to the production and transport of uranium fuel, including transport through the Øresund/The Great Belt.

7.4.12 Assessment of impacts on the energy market
This has consequences for the Danish energy market, albeit probably marginally, if a second reactor is built. On the one hand it will increase base load capacity, on the other hand, the same capacity is affected if / when the reactor is shut down in case of accident/inspection etc.

7.4.13 Assessment of the impacts of power plant decommissioning
The study should include the transport of waste, including transport through Øresund/The Great Belt.

The study must answer how waste can be safely stored and monitored for several hundred thousand years - or to make it a bit realistic: 10,000 years or at least 2,000 years.

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