

Prof. Francis Livens
Chair, Nuclear Innovation and Research
Advisory Board (NIRAB)

francis.livens@manchester.ac.uk

24th July 2023

OFGEM Sponsorship Team,
Department for Energy Security and Net Zero
Floor 3, Abbey, 1 Victoria Street, London,
SW1H 0ET

strategyandpolicystatement@beis.gov.uk

**FSO Consultation – Response to Consultation on Strategy and Policy Statement for
Energy Policy in Great Britain; Closing date: 2 August 2023**

Please find attached a response to the above consultation from the Nuclear Innovation and
Research Advisory Board.

Kind regards

Prof Francis Livens

Chair, Nuclear Innovation Research Advisory Board



FSO Consultation - NIRAB Response to Consultation on Strategy and Policy Statement for Energy Policy in Great Britain

With regard to the consultation, I would like to make the following points:

1. Does the strategy and policy statement identify the most important strategic priorities and policy outcomes for government in formulating policy for the energy sector in Great Britain? If not, please provide details of the priorities that you think should be included.

It is my view that the strategy and policy statement goes some way to identifying the strategic priorities required to enable Great Britain to meet its net zero commitments whilst also providing security of energy supply. However, the statement does not provide information or clarity on the technologies which will be contributing to achieving this overarching aim and does not mention issues which may arise if the market does not respond in a timely fashion to enable private investment.

Historically, nuclear has typically provided baseload electricity, as the performance characteristics of the existing technology are optimised for this. This has also meant that derogations from the Grid Code have been required for nuclear plants. Advanced nuclear technologies, such as high-temperature gas reactors (HTGR) have the potential to support some of the energy needs of the UK economy through the generation of electricity and the output of high-temperature heat (in the region of 400 – 800 °C) as well as hydrogen. The policy statement document only makes inferences to the output of heat as an energy commodity and does not explicitly acknowledge the importance of these co-generation benefits, their potential to grow in significance in the future, nor how they may be regulated going forwards.

2. Does the strategy and policy statement effectively set out the role of Ofgem in supporting government to deliver its priorities? If not, please identify where these expectations could be made clearer.

The strategy and policy statement sets out the role of Ofgem for electricity and gas but there is some ambiguity with regards to the regulation of research and development projects such as large-scale nuclear demonstrator reactors, which may generate electricity, heat and hydrogen. Such support will be needed when addressing issues about future grid stability and the stable operation of macro and micro grids with regard to load and frequency, should a future nuclear demonstrator reactor be connected to the grid.

At present Ofgem stimulates innovation using the three principles, but I suggest that Ofgem needs to consider the impact and timing of meeting net zero targets from nuclear power generation funded via the Regulated Asset Base (RAB) framework and at what stage a FSO may be able to trigger RAB. Clarity on the roles and responsibilities of Ofgem and Great British Nuclear (GBN) vs the Developer in the matter of securing an Electricity Generation Licence is needed alongside guidance as to whether RAB can apply to heat generation technologies.



- 3. Given the Future System Operator does not exist yet but will need to have regard to the strategy and policy statement once it does, do you consider that we have effectively reflected the Future System Operator's role in this document? If not, please identify where these expectations could be made clearer.**

If the UK is going to decarbonise hard-to-abate sectors, there is a need to consider power, heat and transport together. I believe the FSO's need to be mindful and aware of the totality of providers that input into energy security for the UK. New and emerging energy markets, for instance nuclear hydrogen, can only grow at the right rate for net zero if there is clarity on the use of heat and heat distribution versus burning hydrogen or using electricity to heat locally. Elsewhere in the document, it reiterates that HMG has announced that it intends to appoint Ofgem as the heat networks regulator across Great Britain via the Energy Bill. It is important then that the FSO is aligned in this.

On whole system impacts, FSO should build up capability to take a systemic view of network planning, design and markets across electricity, natural gas, heat and hydrogen, and the role of nuclear which also considers the system impacts of other emerging and innovative technologies such as Carbon Capture, Utilisation & Storage (CCUS), Direct Air Capture (DAC), synthetic fuel manufacture etc. In undertaking its network planning activities, it would be logical for Ofgem's role to include supporting and advising HMG on any heat pump, heat network and hydrogen rollout from a system and system-of-systems perspective as well as on relevant developments in hydrogen and heat. However, this isn't clear from the policy statement. Further it appears the aim is to give the FSO an obligation to maintain networks (i.e., for transmission of electricity and gas) fit for the foreseeable future. More clarity is therefore needed to explain how this expands to electricity in an increased role with heat and or hydrogen playing a part, including use of related networks.

