



## APPG on Small Modular Reactors

**Minutes of the Meeting with Assystem Managing Director Simon Barber held on 18<sup>th</sup> May 2022 at 13:30**

### **Attendees:**

- Virginia Crosbie MP
- Baroness Hayman
- Josh Male, Trudy Harrison MP
- Baroness Bloomfield
- Lord Wigley
- Simon Barber, Managing Director, Assystem UK (**SB**)
- Havard Hughes, Secretariat

### **Apologies:**

- Liz Saville-Roberts MP
- Viscount Trenchard
- Lord Grantchester

Virginia Crosbie introduced Simon Barber

**SB:** gave a brief overview of Assystem referring to the presentation. Nuclear was essential for safe, secure and reliable power. Assystem was committed to the energy transition. Assystem had been born through the French nuclear industry. The firm had commissioned and constructed the French nuclear fleet and continued to play a role with EDF in operating the systems. Assystem had worked across the nuclear and defence sectors. Also, worked with Uzbekistan on transport, SNCF on its hydrogen transition and worked also on renewables. Of the firm's 7,000 staff some 4,000 in nuclear. Also, Assystem was heavily involved in ITER and Fusion in the south of France.

Assystem is a large global organisation with 800 staff in the UK. There was a resource challenge for the UK and it was something Assystem were responding to head on. Had a programme called Incredible Women trying to attract more women into nuclear. Also, with Hinkley Point C (HPC) Assystem had an ambition to employ 100 women graduates in the HPC programme. Currently, the cohort was just over 20. Delivering commitments to HPC in this programme.

SB was happy to share slide deck with members.

Nuclear was very important if the UK was to get to Net Zero and this was well articulated in the strategy.

A number of scale sites had been identified. SMRs were smaller so that opened up the Magnox sites with complimentary generation to the gigawatt scale sites.

With Gigawatt Plants the rationale was that you were chasing economies of scale. With SMRs there was also a sense of chasing economies of volume. There was a strong analogy between the process of designing and delivering to site an SMR. HPC was a great example. Assystem would be holding its UK management meeting there tomorrow.

There would be £2bn of equipment being delivered to Somerset over the next 2 years. A project developer on the site looked at manufacturing high value components. Not looking to manufacture, provide and test the certification for a valve. Asking for certification for many valves and integrated



in a factory setting so very different analogy to traditional plants. Moving to part of this testing and commissioning in a factory context was very different to what had taken place in the past. Following the golden thread of quality from manufacture to testing of components – some of this would be done in a remote location.

Assystem's workforce was experienced and trained at delivering to the quality standards expected. Also, looking at taking this out of some of these factories to those where the SMRs would be delivered.

If SMR was to be successful the concept of the "construction site" must change. There were 7,000 workers at Hinkley C today. It was very labour intensive to build. With SMR there was an opportunity to transform this thinking so that sites became installation sites for final assembly not construction from scratch.

There was a role for the supply chain, the industry and for other aspects of SMR in future including exports.

**Lord Wigley:** Questioned that a number of sites including Wylfa had been mentioned; but what about Trawsfynydd and potential work to develop radio isotopes at the site? Was Trawsfynydd on the list?

**SB:** Trawsfynydd absolutely had to be on the list as it was an excellent site for SMRs. It was a government owned site so therefore it offered options as a first mover site for SMR. Met with Alan Raymant when he took over Cwmni Eginio and asked views on the pace at which Trawsfynydd should move. It should be the lead site for the SMR demonstrator. Also had a good conversation on medical radio isotopes.

**SB** had previously been in South Africa with NECSA who operate the Pelindaba site where radio isotopes are made. The approach that they were adopting as they were less than an hour from Johannesburg and Pretoria was to create the site as a hub for medical tourism. As soon as they leave the reactor the medical isotopes start to decay. So the value of the radio isotopes diminishes with time. If you could bring the patients to the source could increase the value.

**OB:** great to see that there were conversations going on with Cwmni Eginio. Moving on to another topic on siting of a thermal hydraulic testing facility. Did Assystem have any views on this? A site had been identified on the north end of Ynys Mon.

**SB:** on a personal level as a firm this was not the sort of site Assystem would use itself. However, it was very important for those designing the reactor technology itself. Assystem focussed on the digital systems and powering of the site. The modelling of the core and the primary components, which was the focus of such a facility, was not something that Assystem was engaged with. This investment needed to happen now given the acceleration agenda as the physical tests and the analytical modelling needed to be undertaken.

**OB:** had to leave the meeting.

**SB:** delivering the economies of scale with SMR was all about repeatability. Each site had a different orientation and different ground conditions. In delivering a plant there was an element of uniqueness which you could not get away from. Rolls-Royce had found this when developing engines.



There was an analogy to a plug and a socket of delivering the ground works and constructing this socket – once this was done every site was the same and the plug was the reactor, built in a factory, designed to be plugged into this socket.

There was a role for Government in developing these “sockets”. There were two things at play here. Firstly, by doing this government had an added incentive to come in and develop the site. In the context of acceleration, Assystem had briefed the NIA on the nuclear development vehicle Great British Nuclear. Within the remit of the organisation, Assystem argued that there should be a role for local and regional government to start working on delivering the site. There were surveys on plant life, ground investigation and radiological research. There was a potential local role here, which could provide high-value jobs for pre-development to mature the site’s knowledge and understanding so that a developer could build and run with it.

The challenge was delivering nuclear from its traditional construction to a model based more on the repeatable build of the automotive or aircraft industry.

**VC:** thanked Simon and asked if there were any questions?

**BH:** Moorside was very important. What were Assystem’s thoughts on skills? How would the skillset at Sellafield translate to that for SMRs?

**SB:** there was a perfect translation. If you considered the types of skills deployed at Sellafield. Training to a level that was fit for nuclear quality standards. The evaporator delta project a few years ago was a fully modular assembly with the modules shipped to site and then moved up the beach and commissioned. It was about continuing to develop the skills.

Macron has announced the construction of six new reactors with another eight to follow. This would take 15% of all STEM graduates that France would produce for the next decade.

Talking to Dr Tim Stone at the NIA and other peers was that the sector absolutely needed to work together to deliver the resource to make these programmes a success. There was a real call to arms in terms of the changes that needed to be made.

There was a need to encourage people into STEM subjects and then into the nuclear sector. Wind and solar were commoditised. There were very few technical engineering jobs. With nuclear and fusion there were two incredibly technical subject areas with a huge and diverse array of work for engineers and manufacturers. There was therefore a need to go out there and excite people.

**LW:** was the decommissioning authority working sufficiently quickly to ensure that the old nuclear sites were available?

**SB:** One clear fact was that it was not easy to dismantle a Magnox reactor. There was a need for a “handshake” between the NDA and SMR developers to ensure sites were available in a timely fashion. The UK was fortunate in that the land the NDA owned wasn’t just restricted to the existing nuclear sites but there was adjoining land which could be used for construction. However, there was a story here too as one reactor came to the very end of its life and the NDA needed the specialist skills and expertise as well as operational knowledge to complete the decommissioning safely and effectively. There was a good news story with a new plant in that those skills were eminently transferrable.



**VC:** British energy security strategy – interested in the comments on the role of Government. Also, wanted to talk about the nuclear financing bill and how this impacted the sector.

**SB:** Great British Nuclear had to be doing something, which engaged the delivery of the programmes in the UK and the acceleration of them. GBN needed to play a role in accelerating the programme by playing a role in the early development of sites taking them from green and brown field into early development stage. They needed to play a role on behalf of BEIS and HM Treasury.

**SB:** was less clear on where the boundaries lay between GBN and the NIA. Where did this leave the nuclear sector deal? There were things in the sector deal and therefore in the gift of industry which potentially had a very strong overlap. Skills, resources and capacity within the UK all fell into this category. There necessarily had to be better tripartite working between companies such as Assystem in terms of consultancy and manufacturing. Coming together with the end users of the skillsets and Government to deliver on the resource grown that that was needed. There were already pinch points on skills within the UK nuclear sector before the SMR programme started to move forward at pace. This was for the mutual benefit of all the end users. The pinch points would become significant in five years' time. Not sure what role GBN had in this and how this related to the nuclear sector deal.

**VC:** it was clearly quite early days and even the relationship with BEIS was being talked about. Simon Bowen heading this up. With reference to the £120 million Future Nuclear Enabling Fund – did Assystem see this in the same way as Rolls-Royce and Bechtel that these technologies would be accelerated and happen?

**SB:** there was a need to keep things simple and to back winners. Nuclear in some respects could be its own worst enemy. There had been up to 60 to 70 SMRs and AMRs being developed. There were a lot of solutions looking for a problem. Was there really a need for HTRs or lead cooled gas reactors? What was important was cheap, reliable electricity through a simple proven solution. The Government had rightly invested in the development of the Rolls-Royce SMR. Assystem was supporting this but SB was aware of how hard it had been to get the funding for this from his previous roles. Better to develop what was already there rather than provide contingency. It needed the best shot at delivery.

**VC:** How could the SMR APPG help Assystem?

**SB:** the key challenge for Assystem is people. The key thing that lawmakers needed to do was to raise awareness of the skills challenge. There had been the build back better programme, the SMR plan and others all demanded skilled people. There was fusion and the STEP programme in the UK and there were significant defence programmes too. Everything was moving fast in this space.

Similar issues were being raised in France also. Looking at hydrogen and how to deliver in the net aero clusters. Also, there was offshore wind but Assystem didn't have the bandwidth for this as well as nuclear. This was a resource challenge and it applied across the energy security sector.

**VC:** if Lord Wigley gave Assystem his magic wand what would they do?

**SB:** Need an acceleration of changes to the national policy framework to bring SMR into fruition, get the surveys done of the potential sites in England and Wales and put in policy the sites suitable for SMR development.

**Meeting closed at 14:30.**