QUESTIONNAIRE FOR SMR VENDORS

1. The economic competitiveness of nuclear power generation is a key factor to relaunch its role in the energy transition scenarios for the next decades. Differently from current reactors, SMR cannot benefit from economies of scale, with respect to power output increase. Which are, in your business model, the key features you intend to pursue to grant competitiveness to your product? Please try to prioritize them based on expected benefits.
2. In the SMR business model, series production of nuclear reactor modules is granting beneficial cost effects because of the associated learning curve, not only referred to technological aspects but also to amortization of initial investments and stabilization of industrial costs. In your assumptions, how many modules are you accounting to reach the optimal cost?
3. In your SMR design, which components ("Special Components") are significantly innovative (either because of design or of high quality requirements) and crucial in terms of availability in today's market? Can you estimate which fraction of the plant overnight capital cost would be associated to these components? In general, which could be the fraction of the plant overnight capital cost associated to safety related components (Safety Class 1-2-3)?
4. For such Special Components, do you assume there are already European suppliers which could deliver them with proper development capability? With respect to your actual Supply Chain, do you envisage that this set of sub-suppliers could be enlarged considering other safety critical sectors (aerospace, oil & gas, others)? If yes for which main categories? Do you see any criticality with the availability of raw materials, or semi-finished parts, from European suppliers?
5. For these Special Components, can you estimate which could be the reference construction time required? In your view, are they impacting the critical path of plant construction schedule? Are you assuming to build them upfront?
6. Are you assuming to have special factories dedicated to series production of Special Components? If yes, which capacity are you envisaging for them? Are you envisaging dedicated factories for other purposes than Special Component manufacturing?
7. Modularization is a typical approach currently pursued to minimize construction time and costs. Are you considering it in your business model? Do you intend to make use both of mechanical modules and structural modules? For which parts of the plant?
8. Apart from modularization, do you envisage other ways to standardize construction knowing the different requirements of different sites/countries?
9. In your business model, which kind of fuel and fuel supply arrangements are you considering? How do you plan to address supply chain challenges of HALEU (High Assay Low Enriched Uranium)?
10. Plant standardization is a further approach envisaged to reduce costs of future nuclear plants. Apart from the Special Components, in your business model are you envisaging to procure the remaining components from single suppliers (to foster the standardization)? Do you see any risk of cost increases possibly associated with this? How do you compare, in your view, standardization vs usage of the local supply chains?
11. Looking towards product standardization for the European market, to which extent you expect to use European standards? What are the typical key Codes and Standards you are going to use for the safety demonstration and for component manufacturing? Do you see any need for additional Codes or Standards to cover specific aspects of your design?