European supply chain in the context of Small Modular Reactor (SMR) deployment

* Required

General Overview

1. Company name *

2. Country *

3. Company's turn over (last three years) *

- ◯ < 3M€
- ◯ 3M€ - 5M€
- ◯ 5M€ - 10M€
- ◯ 10M€ - 50M€
- ◯ 50M€ - 100M€
- ◯ 100M€ - 500M€
- ◯ > 500M€

4. Percentage of turn over on Nuclear Business *

- ◯ < 20%
- ◯ 20% - 40%
- ◯ 40% - 60%
- ◯ 60% - 80%
- ◯ 80% - 100%

5. Percentage of turn over on R&D *

- ◯ < 20%
- ◯ 20% - 40%
- ◯ 40% - 60%
- ◯ 60% - 80%
- ◯ 80% - 100%

6. Number of employees *

- ◯ < 50
- ◯ 50 - 100
- ◯ 100 - 500
- ◯ 500 - 1000
- ◯ 1000 - 5000
- ◯ > 5000

7. Number of production units and their locations *

8. Product sectors *

- [ ] Decommissioning and Waste Management (including off-gas systems)
- [ ] Heavy manufacturing components (including pressure retaining components, heat exchangers, forgings)
- [ ] HVAC
- [ ] I&C components and systems
- [ ] Electrical components and systems (including power distribution)
- [ ] Testing and monitoring systems
- [ ] Civil works and metallic structures
- [ ] Remote handling (including cranes, handling machines)
- [ ] Generator / Turbo-generator
- [ ] Rotating machines (e.g., pumps, blowers)
- [ ] Valves
- [ ] Other mechanical components
- [ ] Water Treatment
- [ ] Pipework / Supports / Welding
- [ ] Logistics / Transport
- [ ] Other

9. Main nuclear components, systems and/or services provided *

10. Number and list of customers in the Nuclear Sector *

11. Specific references

Capability

12. Nuclear technologies for which you have provided products and/or services

- [ ] PWR - Pressurised Water Reactor
- [ ] BWR - Boiling Water Reactor
- [ ] LFR - Lead Fast Reactor
- [ ] SFR - Sodium Fast Reactor
- [ ] HTGR - High Temperature Gas Reactor
- [ ] Fusion Reactor
- [ ] Fuel Cycle Facilities
- [ ] Naval Reactors
- [ ] Other

13. Nuclear-specific internal design expertise

- [ ] Concept Engineering
- [ ] Basic Engineering
- [ ] Detailed Engineering
- [ ] Construction Engineering
- [ ] Other

14. Availability of internal expertise for installation, commissioning and testing of own products (or supervision of these activities)

- [ ] Installation
- [ ] Comissioning
- [ ] Testing
- [ ] Other

15. Capability to provide maintenance services after delivery of own products and/or systems (please detail the kind of services in the next question)

- ◯ Available for LTSA (Long Term Service Agreements)
- ◯ Limited to defect liability period (or warranty period)
- ◯ On demand for specific cases
- ◯ Not available

16. Please detail the kind of maintenance services you are able to provide.

17. Experience in the use of Nuclear Quality Systems and in the application of Codes & Standard (C&S)

- [ ] ASME
- [ ] RCC-M
- [ ] KTA
- [ ] IEEE
- [ ] RCC-E
- [ ] IEC
- [ ] RCC-CW
- [ ] Other

18. Reconciliation capability: are your products supplied in accordance to a certain C&S easily qualifiable for different C&S? (describe in the next question)

- ◯ Yes, easily
- ◯ Yes, with some effort
- ◯ Very difficult

19. Please provide more detail on your reconciliation capability, including the different C&S you are able to reconcile.

20. Is your actual level of production process automation and digitalization sufficient to provide adequate foreseeable increase of production at an adequate quality level or do you need specific investment in this area?

- ◯ Modest level, significant investment needed
- ◯ Basic level, moderate investment needed
- ◯ Good level, slight investment needed
- ◯ Excellent level, no significant investment needed

21. Please describe the investments you would need to do to adequately automate and digitalize your production processes.

22. Enabling technologies implemented within your organization or which you are intending to implement (please select the categories and specify the context of implementation for SMR in the next question)

- ☐ IoT
- ☐ Big Data Analytics
- ☐ Additive Manufacturing
- ☐ Cybersecurity
- ☐ Machine Learning
- ☐ Autonomous Robotics
- ☐ Augmented Reality
- ☐ Other

23. Please specify the context for the implementation of the technologies mentioned above for the SMR.

24. Specific experience and needs, if any, in Advanced Manufacturing

25. Does your organization have experience in building information modelling (BIM)?

- ◯ Yes, we are BIM certified
- ◯ Yes, but not certified
- ◯ No significant experience

Capacity

26. Actual production capacity (components/systems delivered per year)

- ◯ < 5
- ◯ 5 - 10
- ◯ 10 - 50
- ◯ 50 - 100
- ◯ 100 - 500
- ◯ > 500

27. Can your current production capacity be readily expanded due to likely increasing demand from the nuclear power market?

- ◯ Yes
- ◯ No
- ◯ Maybe

28. If you answered "Yes" to question 27, please indicate which is your present production range, that could be diverted towards nuclear production (please consider typical nuclear requirements such as environmental and seismic qualification, certification of materials etc.)

29. If you answered "No" to question 27, please indicate which could be your strategy (i.e. necessary investments, dedicated factory, needed workforce other)

30. Logistic challenges, if any, to face an open European SMR market (transportation, others)

31. Supply challenges you anticipate considering the actual global market (availability of raw materials, semi-products, specific hi-tech components, etc.)

32. Considering your product/system characteristics and required testing in accordance to C&S, in which areas may you anticipate the need for investments to enable/enhance factory pre-assembling and integral testing, aimed at reducing site erection schedule?

- ◯ Material monitoring
- ◯ Laydown areas
- ◯ Machining capabilities
- ◯ Automatic assembly/welding
- ◯ Inspections
- ◯ Auxiliary systems for integrated working test
- ◯ Transport logistics
- ◯ Other

Additional Comment

33. Please feel free to add anything you think might be relevant for this survey.