



CERTIFIED MANAGEMENT SYSTEM
ISO 37001

SNN no. ...

CLEARED BY,

**Chairman of the Board of Directors
Teodor Minodor Chirica**

NOTE

concerning approval by the General Meeting of Shareholders of the decision to continue with the Small Modular Reactors (SMR) project, based on the pre-feasibility study documentation (Rev. 1.1), prepared in keeping with the requirements of the Government Decision No. 907/2016 on the preparation stages and the-framework content of the technical and economic documents related to the financial investment projects funded from public funds

1. General

According to the provisions of Article 13(2)(h) of the updated Articles of Incorporation of Societatea Nationala Nuclearelectrica (SNN), the General Meeting of Shareholders “approves the Company’s development strategies and policies”.

Thus, under its Resolution No. 8/22.09.2022, the General Meeting of Shareholders approved the deployment strategy for the NuScale Small Modular Reactors (SMR) Project on the Doicești Site (“SMR” or “Project”), via the Special Purpose Vehicle RoPower Nuclear (“SPV” or “RPN”).

This implementation strategy considered the international good practices, that is to allocate significant funds in the pre-project preparation stages with a view to providing a proper staging-out the project, that would support making a final investment decision:

- **Stage 1 – FEED Phase 1:** with planning activities, studies/surveys, engineering and design that contain the elements of essence for project scoping, by reference to the specific local requirements;
- **Stage 2 – FEED Phase 2:** will build on, and develop, the Stage 1 elements with the aim of preparing a set of deliverables as needed for making a final decision about investing in the project (FID), completion of the project cost estimation (Class 3), the initial safety analysis report (ISAR), obtaining the early building permits, the environmental impact assessment, the detailed site characterization, and preparation for the nuclear plant’s operation;
- **Stage 3 – Engineering, Initial Procurement Phase, Site preparation:** filing for the building permit, getting the building permit, construction site mobilization and site preparation. The detailed design is largely completed, so are the essential works needed to prepare the site for commencing the building of the plant;
- **Stage 4 – Construction:** this stage commences with the Full Notice to Proceed decision gateway and covers most of the construction activities;
- **Stage 5 - Commissioning:** it involves module installation and fuel loading;
- **Stage 6 – Commercial Operation:** starts with the first energy sale day in the market.

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Thus, the FEED Phase 1 stage was kicked-off, during which the special purpose vehicle concluded a number of contracts/agreements for preparation of the engineering and design studies related to this stage, as needed for project scoping, by reference to the specific site requirements and the licensing and regulatory requirements applicable to the SMR technology.

So far, the FEED Phase 1 stage included commencement of the Project notification procedures before the competent authorities in order to setup up work interfaces that would foster performance of activities in the next stages. The deliverables related to FEED Phase 1 stage were also produced and concerned matters such as the site specific impact by reference to the plant engineering, preparation of the standard specifications for site specific design, site plan updating, updating of some plant engineering and 3D modelling aspects, specific design requirements and impact on the local community, and development of a cost estimate with an AACE Class 4 accuracy.

At the same time with the activities related to the FEED Phase 1 stage, technical contracts were also in progress to complement and substantiate the conclusions of FEED Phase 1:

- The investigation study, the results of which confirmed the absence of any capable seismic faults on the site, as defined in the applicable IAEA standards;
- The preliminary seismic hazard analysis, the results of which suggest that, from a seismic point of view, the site is suitable for the NuScale SMR project;
- The underlying study for preparation of the Licensing Basis Documentation (LBD), with a view to devising the regulatory framework for the Project; the Study was approved by CNCAN with the Letter No. 3936 of 22 August 2023;

Under the Resolution No. 6/4.12.2023 of SNN Ordinary General Meeting of Shareholders, the transition from FEED Phase 1 stage to FEED Phase 2 stage of the Small Modular Reactors (SMR) Project was approved.

In order to support continuation of the Small Modular Reactors (SMR) project and to substantiate a decision in this regard, SNN has prepared **Revision 1.1** of the **pre-feasibility study documentation (Annex 1)**, in line with the requirements of the Government Decision No. 907/2016 on the preparation stages and framework-content of the technical and economic documentation for implementation of new investment projects.

During FEED Phase 2 stage, it is envisaged to build on, and develop, the FEED Phase 1 elements and, moreover, to issue advanced analysis and recommendations about the best possible option to develop the project, based on the SMR technological developments; we will then subject this document to corporate approvals.

The **pre-feasibility study** was prepared with SNN in-house staff, to which adds the RATEN – CITON contribution.

2. Need and opportunity of the work

The Small Modular Reactors (SMR) project is a priority project for SNN and is included in the Company's development strategy; its implementation will provide significant support to the national electricity generation capacity, the stability of the National Energy System (SEN) with base load addition, development of the domestic industries by localizing SMR production and services, and development of a SMR-based industrial platform.

Although the SMR project is not financed by public funds and, therefore, the regulatory act Government Decision No. 907/2016 does not apply to SNN; nevertheless, given the scale of the investment and the absence of any other express legal provisions covering the documentation to be prepared for an investment project of a public enterprise, this regulatory act was still used as reference for preparation of the pre-feasibility study.

The purpose of the documentation is to further support the Small Modular Reactors (SMR) project in FEED Phase 2 stage, at the end of which the final investment decision (FID) will be made, in keeping with the Project's deployment strategy, as approved under the Resolution No. 8/22.09.2022 of SNN Ordinary General Meeting of Shareholders.

Transition to FEED Phase 2 stage, as approved under the Resolution of SNN Ordinary General Meeting of Shareholders No. 6/4.12.2023, will support early commencement of the priority activities with a view to fully meeting the technical and regulatory requirements in force, and to consolidating the status of the Project towards substantiation of a final investment decision due to be made after closure of FEED Phase 2 stage. This final investment decision will support the Project's advancement to the "Engineering Procurement Construction" (EPC) stage, according to staging-out taken up in the deployment strategy.

The pre-feasibility study documentation was cleared in the Technical, Economic and Scientific Board of Societatea Nationala "Nuclearelectrica" S.A. No. 2083/20.02.2024, with the CTES Clearance No. 6/20.02.2024.

The Project's economy will be regularly reviewed and validated, each time based on updated assumptions on the key Project implementation parameters, such as budget, plant productivity, energy price, financing costs, support mechanisms, or financing sources. Therefore, the pre-feasibility study sets out assumptions about the investment which reflect the current development status of the Project. Therefore, it should be borne in mind that these are only preliminary assumptions, given that the current investment budget is based on cost estimates of an AACE Class 4 accuracy. Estimates shall become more accurate in FEED Phase 2 stage as estimates of an AACE Class 3 accuracy are made.

Thus, these assumptions will be regularly and successively revisited in order to align them with the updated revenue, investment cost, operating and maintenance cost, and financing cost forecasts.

3. Assessment of most advanced SMR course options

Assessment of the SMR engineering course options under **Revision 1.1 of the pre-feasibility documentation** concerned the **deployment speed, as a strategic element**, in order to foster SNN gaining the status of SMR regional "hub". The independent review, which looked into the exhaustive list of the most advanced SMR engineering course options, helped devise an optimal strategy for deployment of the SMR technology in Romania, in a way that would allow the country to achieve the regional leader status and to tap into the strategic benefits of this position.

Currently, the SMR engineering course options considered above have preserved their tested technological advance at the time of the initial analysis, with the NuScale SMR course option still presenting a number of strategic benefits in terms of the project's advance, the financing structure and the opportunity for SNN to develop a SMR-based regional platform.

Therefore, the opportunities and benefits attached to deployment of the very first SMR in Romania and the possibility of becoming a SMR leader in the region remain relevant for the NuScale technology.

4. Scenarios for implementation of the SMR project in Romania

In the aftermath of the US NuScale CFPP project discontinuation, there are a number of implications for the Romanian SMR project, mainly due to the fact that, depending on the evolution of the project, at least one the plant's modules could become "First of a Kind" (FOAK). The investment implementation scenarios envisage the accelerated continuation of the Romanian SMR project, so as to allow deployment of the first SMR plant in the region and SNN to gain the status of regional SMR leader.

It should be borne in mind that the implementation scenarios were identified and devised in reliance of a **"post-CFPP" risk assessment**, as shown in the content of the study. The scenarios considered are:

Group A Scenarios – *i.e.* scenarios A1 and A2, which present a number of specific benefits in terms of deployment speed (FOAK v non-FOAK), but they also rise a number of common challenges/risks related to US NRC regulatory approval and the sustained support the project might enjoy from the US Department of Energy ("DoE").

Group B Scenarios – envisages prospecting other SMR engineering course options, such as Light Water Reactor (LWR), of those assessed before. In any of these group B scenarios, the choice of a different technology shall be driven by that technology maturity, the regulatory process and the available financing:

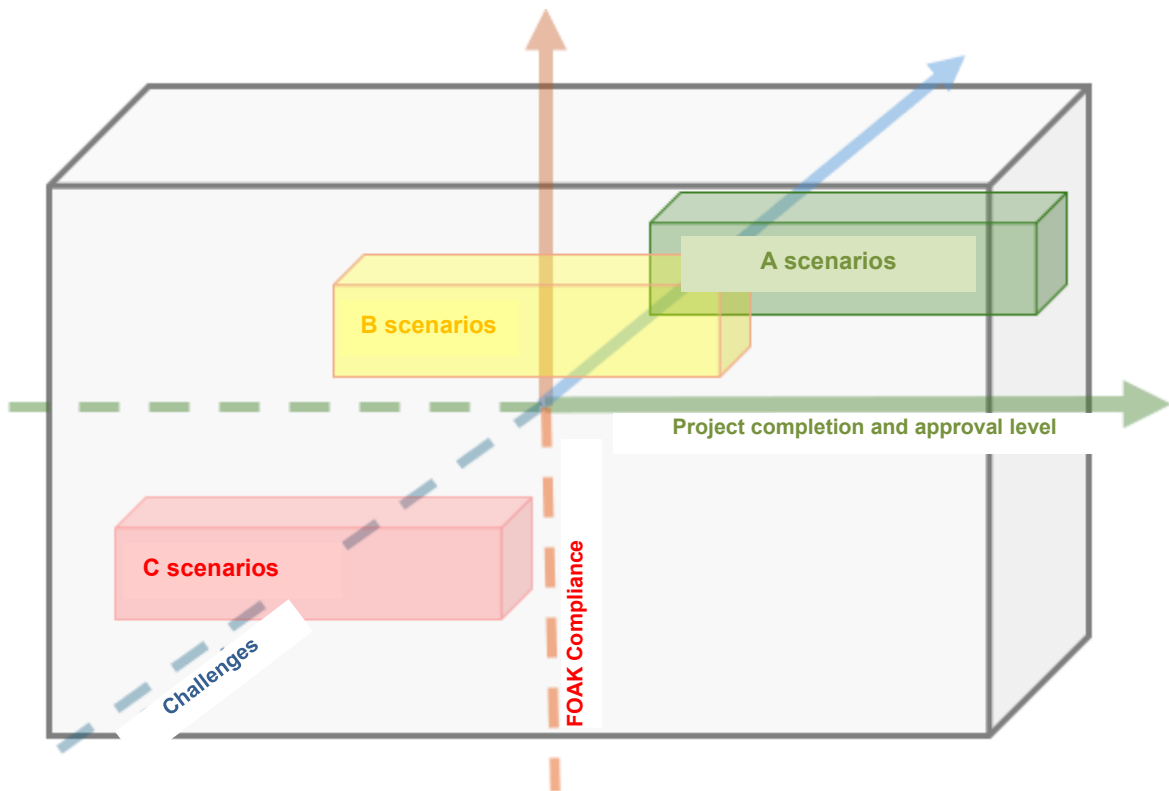
Scenario C – features the use of SMR course options with other setups (e.g. coolants, nuclear batteries, gas, etc.). In general, these course options cannot reach the maturity needed for operationalization until the end of the decade, which is feasible only for the most advanced course options currently assessed.

5. Proposals for the choice of scenarios to be further reviewed in the Feasibility Study stage

The presented conclusions are relevant for the time when Revision 1.1 of the pre-feasibility study was issued (Q1 2024), with the disclaimer that differences might occur depending on the context developments at a later date.

The scenario benchmarking for the Romanian SMR Project relied on three dimensions considered to be the most relevant:

- (i) project completion and approval level;
- (ii) (ii) FOAK compliance;
- (iii) (iii) related challenges (risks, financing, strategic benefits, implementation timeline). The chart below shows the conclusions of this analysis:



Benchmarking chart for the Romanian SMR Project development scenarios

The quadrant in the top-right corner of the graph contains the best-case scenario groups. Thus, there is a higher score range for the scenario group A (in green), which benefits from a relatively more advanced level of development, with the highest chances of achieving SNN's strategic objectives of becoming the first SMR operator and regional SMR leader.

Conclusion – relying on the preliminary assessment of the scenarios and the benchmarking produced in the pre-feasibility study, a limited number of scenarios are proposed to be reviewed in the feasibility study phase, according to Article 4.1 of the Government Decision No. 907/2016 on pre-feasibility studies. The current ranking of the scenarios is a milestone for development of the investment, based on the current work assumptions:

- the Group A Scenarios observes the highest score, followed in the descending order of their score by:
- the Group B,
- the Group C.

6. Proposals subject to clearance by SNN Board of Directors and to approval by SNN Ordinary General Meeting of Shareholders

In the light of the above, we hereby submit to SNN Ordinary General Meeting of Shareholders the decision to continue with the Small Modular Reactor (SMR) Project, based on the pre-feasibility study documentation, Revision 1.1.

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