

No. ...

**Approved,**  
**Chairman of the Board of Directors**  
**Ionuț Purica**

**Endorsed,**  
**CEO**  
**Cosmin Ghiță**

### **Note**

**regarding informing the General Meeting of Shareholders about the decision to invest in the project " Purchase and installation of a Simulator with virtual panels"**

#### **I. Approval powers**

With reference to:

- The provisions of the SNN Articles of Incorporation , which stipulate in Article 20(3)(m) that one of the powers of the Board of Directors is to approve activity programmes (production, research and development, technological engineering, investments);
- In conjunction with the limits of competence set out in Annex 1 to the SNN Articles of Incorporation , which stipulate that investment decisions with a value greater than or equal to EUR 3,000,000 and less than EUR 50,000,000 shall be approved by the SNN Board of Directors, with the General Meeting of Shareholders subsequently being informed thereof;
- Given that the total value of the investment, according to the Preliminary Cost Estimate Sheet (annex to the Approval of the Amendment Proposal MPA#EC9129 rev.0 according to SI-01365-T002 "Processing of Project Amendment Proposals", a document similar to Annex 7 "General estimate of the investment objective" to GD 907/2016 on the stages of preparation and framework content of technical and economic documentation related to investment objectives/projects financed from own funds) , is **3,871.255** euros, with the mention that this amount will be fully financed from own sources, as provided for in the SNN Investment Programme;

This Note is intended to provide information on the decision to invest in the project **"Purchase and installation of a virtual panel simulator"** by the General Meeting of Shareholders.

## II. Background

Currently, the initial and ongoing training and authorisation of operating personnel for both Unit 1 and Unit 2 of Cernavoda NPP is carried out on the full-scope simulator located in Pavilion 2, which is based on Unit 1 of CNE Cernavoda. This simulator was built and commissioned in 1994 and has undergone several upgrades aimed at updating the components and technologies used and improving its fidelity to the reference unit, Unit 1.

When Unit 2 of Cernavoda NPP was put into operation, the differences between the two units were analysed, and the Unit 1 simulator was considered suitable for training the operators of the Unit 2 control room. Thus, during the training process for Unit 2 personnel, compensatory measures were applied to address the significant differences between the two units. These measures were continuously updated over time in order to maintain the highest possible fidelity between the simulator and Unit 1, while also ensuring effective training for Unit 2 operators.

Unit 1 will complete the life cycle approved by the initial project, followed by a refurbishment period to extend its life. The engineering, procurement and construction contract for the life extension of Unit 1 also includes the upgrade of the Unit 1 simulator to maintain fidelity with the unit after refurbishment. Thus, the contracting of the simulator update and the necessary funds are provided for in this contract and will be carried out in sync with the modification of Unit 1.

During the refurbishment of Unit 1, in order to implement the modifications to the simulator, it will have annual periods of unavailability for training, which will be longer than the current ones. Under these conditions, the current simulator will have to support the training of operators of both units in order to maintain their authorisations, as well as the initial training of new series of operators for both Unit 1 and Unit 2, which implies a workload that far exceeds the normal work schedule, with reduced fidelity conditions for both units.

Thus, in the absence of a simulator with virtual panels to take over the training of the main control room operators of both units, during periods of unavailability of the existing full simulator, there is a risk that it will be impossible to maintain the licences of these operators. This risk, combined with the lack of licensed control room operators, could lead to the shutdown of Unit 2 and the inability to start Unit 1 after completion of the refurbishment process. The only option to mitigate this risk is to train operators on the installations of a unit with a similar design. The probability of finding another simulator available for training these operators during various periods when the full-scope simulator will be out of service is low, and the training solution would be logistically complicated; in addition, the costs associated with this solution cannot be determined.

### **III. Necessity and opportunity of the project**

The revision of CNCAN standard NSN-14 "Standards for the issuance of operating licences for operating personnel, management personnel and specific training personnel in nuclear power plants, research reactors and other nuclear installations", by Order No. 65/2024 of 24 April 2024, introduces the obligation of continuous training and maintenance of the qualifications of control room operators of the refurbished unit using the full simulator or, in its absence, a virtual simulator whose software model is faithful to the approved design configuration.

Following the CNCAN mission/audit in 2025, Minutes No. 10203/04.04.2025 stipulated that the deadline for completion of the virtual panel simulator be June 2027 and that quarterly reports on the status of the project be submitted to CNCAN.

In accordance with the aforementioned standard, the virtual panel simulator will be used both for training Unit 1 control room operators and Unit 2 operators. It will take over the official training and examination configuration from the existing Integral simulator, which refers to Unit 1. After completion of the Unit 2 Integral Simulator project, the Virtual Panel Simulator will also be able to take over its official training and examination configuration.

Thus, the virtual panel simulator will be used to ensure the continuous training and maintenance of control room operator qualifications while the Integral Simulator is unavailable due to updates required by the refurbishment of Unit 1. Subsequently, the virtual panel simulator will be used as a complementary training facility or during periods of unavailability of the full simulator due to its maintenance activities. It will also take over the initial classroom training of control room operators in training.

The negative impact predicted if this investment objective is not achieved is non-compliance with the requirements of CNCAN NSN-14 standards regarding the use of the virtual simulator during the periods specified above. It is also expected that the training of operators at both units will deteriorate due to the unavailability and overloading of the current simulator as a result of the increase in the number of control room operator training groups.

### **IV. Project description**

The virtual panel simulator is part of a package of three important projects of CNE Cernavoda, for which the IR-97300-007 information report was prepared and approved "Analysis of the need, opportunity and strategy for contracting simulators for the nuclear fuel loading and unloading system, Unit 2 and virtual panel simulator in accordance with NSN-23 and NSN-14 standards". This note submits for approval the first investment project related to the first stage of development and alignment with CNCAN requirements for the virtual panel simulator, with the other two phases of the investment projects for the full Unit 2 simulator and the nuclear fuel loading and unloading system simulator to be submitted for approval in the near future.

The concept note for the investment project for the virtual panel simulator was approved by CTES through CTES Opinion No. 15/02.10.2025.

## **Project implementation strategy**

The implementation of the project "Purchase and installation of a virtual panel simulator" will be carried out in two distinct phases:

### **1. Setting up the space that will house the Virtual Panel Simulator**

To carry out the first phase, a space consisting of three rooms located on the ground floor of Pavilion 2 of the Cernavoda NPP staff training centre has been identified, which is large enough to house the virtual panel simulator. In order to ensure the necessary dimensions for the full accommodation of the virtual panel simulator, this space will undergo several re-partitioning and refurbishment works, which will consist of:

- space reorganisation works:
- electrical works:
- refurbishment and furnishing works, including computer equipment and office equipment, etc.

This first phase will be carried out with Cernavoda NPP's own resources and manpower, through the internal process of managing and executing the works, quantified in item 2 of the preliminary cost estimate in this document.

### **2. Purchase and installation of the virtual panel simulator itself**

This phase consists of the procurement through tender of a turnkey project for the design, development, installation, commissioning and testing of the virtual panel simulator itself.

The project implementation strategy, as currently envisaged, has been drawn up in accordance with the project schedule (Annex 2), with an estimated project completion date of February 2028 and the following implementation stages:

- Preparation and approval of project documentation within the CTE, CTES, CA (6 months, deadline November 2025);
- Preparation and approval of the DIA package for the project procurement for the "Procurement and installation of a virtual panel simulator (4 months, deadline March 2026);
- Preparation of tender documentation, conduct of the tender procedure and signing of the contract for the purchase of a simulator with virtual panels (12 months, deadline March 2027);
- Obtaining permits and authorisations for the arrangement of the space for the virtual panel simulator in Pavilion 2, Cernavoda NPP (9 months, deadline February 2027);
- Execution of the space for the virtual panel simulator in Pavilion 2, Cernavoda NPP (6 months, deadline August 2027);
- Development of the virtual panel simulator project at the manufacturer's premises and performance of PreFAT tests (5 months, deadline December 2027);

- FAT testing, shipping, reception, installation of the simulator with virtual panels and SAT testing (2 months, deadline January 2028);
- Acceptance upon completion of works (1 month, February 2028);

Total estimated duration: 3.5 years.

Given that the June 2027 deadline imposed by CNCAN for the completion of the project cannot be met, after contracting the works, CNE will request CNCAN to extend the project implementation deadline, in accordance with the duration established in the contract.

### Investment value

The total value of the investment is determined by the costs associated with the stages identified as necessary and sufficient for the implementation of the proposed investment project. Thus, in accordance with the Preliminary Cost Estimate Sheet – Annex 3 to this Note, the estimated value of the project is 3,871,255 euros, equivalent to 19,658,231 lei (at the exchange rate of 5.0780 lei on 27 June 2025), with financing from SNN's own sources, the investment budget of CNE Cernavoda, Sections D-PR and D, and consists of:

1	Externally contracted costs	2,559,795 Euro	12,998,637 lei
2	Internal CNE resource costs	61,908 Euro	314,368 lei
3	Miscellaneous and unforeseen expenses 20%	471,004Euro	2,391,757 lei
4	Expenses related to the budget margin 25%	577,858 Euro	2,934,362 lei
5	Expenses for setting up the implementation reserve for price adjustment 10%	200,691Euro	1,019,108 lei
<b>6</b>	<b>Total</b>	<b>3,871,255Euro</b>	<b>19,658,231 lei</b>

### V. Next steps

Subject to obtaining BoD approval, the next major steps involve contracting a turnkey project for the Virtual Panel Simulator based on the revised documentation. In parallel with the design phase, steps will be taken to obtain the necessary authorisations and fit out the space in Pavilion 2, Cernavoda NPP, which will house this simulator.

## VI. ANNEXES

Annex 1: CTES Opinion No. 15/02.10.2025;

Annex 2: Project schedule revision 1;

Annex 3: Preliminary cost estimate sheet (annex to the Approval of the Modification Proposal (MPA) #EC9129 rev.0 according to SI-01365-T002 "Processing of Project Modification Proposals, document similar to Annex 7 "General Estimate of the Investment Objective" to GD 907/2016 on the stages of development and framework content of technical and economic documentation related to investment objectives/projects financed from own funds);

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