



S.N. Nuclearelectrica S.A.

Presentation for investors



Commitment for excellence

Action for results



SNN, IN BRIEF

SNN, IN BRIEF

- Societatea Nationala Nuclearelectrica S.A. ("Company" or "SNN") is a national joint-stock company, managed in a one-tier management system, with its registered office in Bucharest, District 1, 65 Polona Street, and two branches without legal personality. The company's main activity is the "Production of electricity" – NACE code 3511, and it is recorded in the Trade Register under no. J40/7403/1998, tax number 10874881, fiscal attribute RO.
- At present, SNN is the only producer of electricity based on nuclear technology in Romania.
- Also, SNN produces nuclear fuel bundles, CANDU type, used for the operation of its own nuclear reactors. NPP branch (Nuclear - Power Plant) Cernavoda, with registered office in Cernavoda, 2 Medgidiei Street, registered with the Trade Register under no. J13/3442/11.10.2007, ensures the operation of the two nuclear units, based on CANDU technology type, as well as the administration of all SNN assets in Cernavoda (except for Units 1 and 2 in operation, Units 3 and 4 in different construction stages, Unit 5 for which the shareholders of the Company had approved the change of destination since March 2014, namely, its use for carrying out activities related to the operation of Units 1 and 2, and also the heating system). The two units have an installed capacity around 700 MW (MWe 706.5 Unit 1 and MWe 704.8 MWe Unit 2).
- NFP Branch (Nuclear Fuel Plant) Pitesti, with registered office in Mioveni, 1 Campului Street, registered with the Trade Register under no. J03/457/August 24, 1998, where CANDU fuel bundles are made for Units 1 and 2 of Cernavoda. Unit 1 was commissioned in 1996 and Unit 2 in 2007. The two reactors alone ensure about 17% - 18% of the internal energy production of Romania. The nuclear reactors from the two units are 6 CANDU type, design developed in Canada, by Atomic Energy of Canada Ltd. This type of reactors are cooled and moderated with heavy water and use natural uranium as fuel. The initial project envisages the construction of 5 nuclear units CANDU type.



Our mission

Capitalization of nuclear resources for producing clean energy under conditions of safety and economic efficiency.



Among its characteristics:

- A high value of the installed capacity factor; at an equal installed capacity factor, a nuclear unit produces twice as much energy as a conventional unit;
- No greenhouse gas emissions
- Low dependency of the price per KW on the variation of uranium prices, due to its small quota in the production cost as compared to other energy producers
- High technical level of the operation personnel,
- Reasonable production costs
- Nuclear power fully complies with the requirements regarding security of supply, sustainable development and competitiveness.

Our vision

High-performance, innovative national company, determined to obtain excellent and sustainable results, in the top rankings of nuclear energy.

Our values

Responsibility

Teamwork

Integrity

Mutual respect

Professional excellence

Continuous improvement

Slogan

Commitment to excellence. Action for results.



Shareholding structure

The last share capital increase took place in 2020 by subscribing 130,043 new shares, in value of RON 1,300,430, representing the in-kind contribution of the Romanian State, represented by the Ministry of Economy, Energy and Business Environment, and the cash contribution of the Company shareholders. The share capital increase was performed according to the Proportional Offer Prospectus related to share capital increases, approved by Resolution of the Financial Supervision Authority no. 976/13.08.2020 and Resolutions no. 2/04.01.2019 and no. 12/19.12.2019 of the Extraordinary General Assembly of Shareholders, registered with the Trade Register National Office according to Mention Certificate no. 484154/30.09.2020.

The holders of ordinary shares are entitled to receive dividends, as they are reported from time to time, and one vote per share at the General Meetings of Shareholders.

As of March 31, 2021 the shareholders of the Company are: The Romanian State by the Ministry of Economy, Energy and Business Environment, holding 248,850,476 shares, representing 82.4981% of the share capital, and other shareholders, individuals and legal entities, holding together 52,793,418 shares, representing 17.5019% of the share capital. Since November 4, 2013, the shares of the Company have been traded at the Bucharest Stock Exchange, under the issuer symbol SNN.



Elements of general assessment

During the period of 3 months ended on March 31, 2021, SNN recorded a net profit of 234,465 thousand lei.

Indicator [thousand RON]	3-month period that ended on March 31, 2021 (unaudited)	3-months period that ended on 31 March, 2020 (unaudited)	Variation
Production (GWh)*	2,659	2,847	(6.6%)
Operating income, out of which:	704,469	636,793	10.6%
<i>Income from electricity sales**</i>	683,544	625,536	9.3%
Operating expenses, less depreciation and amortization	(284,675)	(256,613)	10.9%
EBITDA	419,794	380,180	10.4%
Impairment and depreciation	(137,093)	(137,613)	(0.4%)
EBIT	282,701	242,567	16.5%
Financial revenues	15,267	26,452	(42.3%)
Financial expenses	(15,709)	(9,584)	63.9%
Net income tax expense	(47,794)	(44,383)	7.7%
Net profit	234,465	215,052	9.0%

*Electricity produced and delivered by Cernavoda NPP in the National Energy System.

**Including revenues from the sale of thermal energy, insignificant in the total revenues.

Operational profit (EBITDA) increased by 10.4% as compared to the same period of the previous year, mainly following the increase of operational revenues by 10.6%, influenced by the increase by 9.3% of the revenues from the sale of electricity.

Operating revenues increased by 10.6%. This increase was caused by the increase by 13.5% of the weighted average price of the electricity sold in the first quarter of 2021, as compared to the weighted average price from the same period of 2020, considering the sale of a total quantity of electricity that was lower by 3.8%.

Starting with 2021, ANRE no longer established delivery obligations for producers on the regulated market. The contracts concluded by SNN on the regulated market for the second half of 2020 have delivery in CET hours; the last delivery time in 2020 being the first in January 2021 (361 MWh, regulated price amounting to RON 182.63/MWh (price without Tg)).

As compared to the same period of the previous year, the quantity of electricity sold on the competition market of bilateral contracts increased by 97%, given that the average sale price on this market was 8% lower (price without Tg). The quantity of electricity sold by SNN on the spot market (PZU and PI) in the first quarter of 2021 increased by 50%, given that the average sale price on this market that was 40% higher (price without Tg). S.N. Nuclearelectrica S.A.

Operating expenses, minus impairment and amortization increased by 10.9% in the first quarter of 2021, compared to the same period of 2020. This evolution was caused by the increase of expenses with purchased electricity, other operating expenses, expenses with nuclear fuel, expenses with repairs and maintenance expenses with spare parts, partially compensated by the decrease of expenses with personnel and expenses with the transportation of electricity.

The financial result negatively influenced the net result, so in the first quarter of 2021, net financial expenses were recorded, while in the same period of the previous year net financial revenues were recorded. The main currencies to which there are exposures are EUR and CAD. The increase of net profit tax expense decreased the positive influence of the other elements. This increase was caused by the increase of the taxable profit calculated for the first quarter of 2021 compared to the one calculated for the first quarter of 2020.

Annex 1 - Financial position statement as of March 31, 2021

	March 31, 2021 (unaudited)	December 31, 2020 (audited)
Assets		
Non-current assets		
Tangible assets	5,706,506,477	5,794,727,840
Assets representing rights to use underlying assets under a leasing contract	576,290	621,233
Intangible assets	51,026,828	53,470,674
Financial assets valued at amortized cost	5,306,031	5,056,031
Financial investments in subsidiaries	14,666,101	141,666,101
Total non-current assets	5,905,081,727	5,995,541,879
Current assets		
Inventories	460,185,385	435,434,531
Non-current assets held for sale	2,231,633	2,231,633
Trade receivables	190,556,330	157,943,751
Other assets valued at amortized cost	105,680,938	85,367,796
Bank deposits	1,620,860,000	1,621,384,000
Cash and cash equivalents	692,057,404	546,565,840
Total current assets	3,071,571,690	2,848,927,551
Total assets	8,976,653,417	8,844,469,430
Equity and liabilities		
Equity		
Share capital, of which:	3,211,941,683	3,211,941,683
<i>Subscribed and paid in share capital</i>	<i>3,016,438,940</i>	<i>3,016,438,940</i>
<i>Inflation adjustments to the share capital</i>	<i>195,502,743</i>	<i>195,502,743</i>
Share premiums	31,474,149	31,474,149
Reserve paid in advance	21,553,537	21,553,537
Revaluation reserve	191,670,602	198,799,898
Retained earnings	4,297,529,802	4,055,915,983
Total equity	7,754,169,773	7,519,685,250
Liabilities		
Long-term liabilities		
Long-term loans	262,498,543	290,478,567
Debts from long-term leasing contracts	479,530	515,074
Provisions for risks and expenses	234,449,165	235,409,546
Deferred revenues	82,481,804	86,067,969
Deferred tax liability	64,398,892	66,526,912
Obligations concerning employee benefits	43,102,434	43,102,434
Total long-term liabilities	687,410,368	722,100,502
Current liabilities		
Trade payables and other liabilities	174,694,649	285,020,150
The current share of provisions for risks and expenses	76,131,943	57,272,874
Corporate tax due	47,921,199	32,049,397
Deferred revenues	17,474,771	16,228,454
Current share of long-term loans	218,745,149	211,995,082
Debts from short-term leasing contracts	105,565	117,721
Total current liabilities	535,073,276	602,683,678
Total liabilities	1,222,483,644	1,324,784,180
Total equity and liabilities	8,976,653,417	8,844,469,430


Annex 2 – Profit and loss account for the 3-month period that ended on March 31, 2021

	3-month period that ended on March 31, 2021 (unaudited)	3-month period that ended on March 31, 2020 (unaudited)
Incomes		
Income from electricity sales	683,543,999	625,536,109
Electricity transmission income	3,456,655	3,701,193
Total income	687,000,654	629,237,302
Other income	17,468,277	7,555,502
Operating expenses		
Impairment and depreciation	(137,092,810)	(137,612,695)
Personnel expenses	(95,010,488)	(113,271,055)
Cost of purchased electricity	(23,836,037)	(2,015,032)
Repairs and maintenance	(15,099,993)	(12,363,688)
Electricity transmission expenses	(3,456,655)	(3,701,193)
Cost of spare parts	(2,653,995)	(2,553,439)
Cost of nuclear fuel	(39,168,267)	(31,350,473)
Other operating expenses	(105,449,530)	(91,359,151)
Total operating expenses	(421,767,775)	(394,226,726)
Operating profit	282,701,156	242,566,078
Financial expenses	(15,709,439)	(9,584,079)
Financial revenues	15,267,399	26,452,489
Net financial (expenses)/revenues	(42,071,470)	16,868,410
Profit before income tax	282,259,116	259,434,488
Net income tax expense	(47,794,374)	(44,382,546)
Profit for the period	234,464,742	215,051,942

Profit for the period	234,464,742	215,051,942
Net income tax expense	(47,794,374)	(44,382,546)

As of December 31, 2021, the Company records under the position "Financial investments in subsidiaries" the investment held in the subsidiary Energonuclear S.A. ("Energonuclear"), company with headquarters in Bucharest, District 2, 5-7 Vasile Lascar Street, 3rd floor and registered with the Trade Register under number J40/3999/March 25, 2009, having sole registration code 25344972, fiscal attribute RO. The main business of Energonuclear consists in "Engineering activities and related technical consultancy" – NACE Code 7112. As of March 31, 2021 and December 31, 2020, the Company held 100% of the share capital of Energonuclear.

The shareholding value as of March 31, 2021 and December 31, 2020 amounts to RON 141,666,101. By the EGMS Resolution of SNN no. 4/July 11, 2017, the shareholders of SNN approved the granting by SNN of a loan convertible into shares amounting to maximum RON 5,500,000 to the subsidiary Energonuclear S.A. ("EN"), in order to finance the maintenance and conservation activities for the site of Units 3 and 4 of Cernavoda NPP. Until March 31, 2021, Energonuclear requested the granting of instalments amounting to a total of RON 5,400,000 of the maximum amount, for which the Company recorded a capitalized interest of RON 260,364. As of March 31, 2021 the shareholder loan was not converted into shares.

As of March 31, 2021 and December 31, 2020, the inventories are as follows:

	March 31, 2021 (unaudited)	December 31, 2020 (audited)
Spare parts	189,771,121	185,856,408
Consumables and other materials	80,756,843	56,565,105
Nuclear fuel	207,581,468	193,639,358
Uranium	27,012,291	39,292,794
Other inventories	6,764,057	11,915,487
Adjustments for impairment of inventories	(51,700,395)	(51,834,621)
Total	460,185,385	435,434,531

9. NON-CURRENT ASSETS HELD FOR SALE

	March 31, 2021 (unaudited)	December 31, 2020 (audited)
Land	120,740	120,740
Buildings	1,823,567	1,823,567
Fittings and plants	287,326	287,326
Total	2,231,633	2,231,633

In 2019, GMS Resolution No. 5/April 23, 2019 approved the sale of the asset "Single's accommodation unit" owned by the Company, located in 14 Salciei Street, Cernavoda Town, Constanta County, consisting of: construction, related land, connection installation to the district heating network, parking arrangements, sports field, green areas. There are currently bidders, and the sale is expected to be completed during 2021.

As of March 31, 2021 and December 31, 2020, **cash and cash equivalents** are as follows:

	March 31, 2021 (unaudited)	December 31, 2020 (audited)
Cash on hand	72,536	91,753
Current accounts in banks, in RON	83,191,332	118,692,137
Current accounts in banks, in foreign currency	2,333,453	1,741,506
Bank deposits shorter than 3 months	605,422,000	425,556,000
Other cash equivalents	1,038,083	484,444
Total cash and cash equivalents	692,057,404	546,565,840

As of December 31, 2021 and December 31, 2020, the **bank deposits** with initial maturities longer than 3 months and shorter than a year are as follows:

and shorter than a year are as follows:

PROVISIONS FOR RISKS AND EXPENSES

As of March 31, 2021 and December 31, 2020, respectively, the Company recognized the following provisions, included under the position "Provisions for risks and expense" and the position "Current share of provisions for risks and expenses":

	<u>March 31, 2021</u> <u>(unaudited)</u>	<u>December 31, 2020</u> <u>(audited)</u>
Obligations regarding the Intermediary Spent Fuel Storage Facility (DICA)	72,521,461	70,262,388
Obligations regarding the low and medium radioactive and non-radioactive waste	106,735,194	103,884,325
Provision for disputes related to salary bonuses	101,403,726	97,209,259
Employees' participation in the profit	29,920,727	21,326,448
Total	310,581,108	292,682,420

As of March 31, 2021, the provisions in the total amount of RON 310,581,108 represent long-term and short-term liabilities, as follows:

	<u>Current</u> <u>portion</u> <u>(< 1 year)</u>	<u>Long-term</u> <u>portion</u> <u>(> 1 year)</u>
Obligations regarding the Intermediary Spent Fuel Storage Facility (DICA)	31,818,164	40,703,297
Obligations regarding the low and medium radioactive and non-radioactive waste	14,393,052	92,342,142
Provision for disputes related to salary bonuses	-	101,403,726
Employees' participation in the profit	29,920,727	-
Total	76,131,943	234,449,165



INCOME FROM ELECTRICITY SALES

(i) Income from electricity sales

	<u>3-month period ended on March 31, 2021 (unaudited)</u>	<u>3-month period ended on March 31, 2020 (unaudited)</u>
Sales of electricity on the regulated market	65,878	132,230,621
Sales of electricity on the free market	680,223,920	490,513,855
Sales of thermal energy	3,245,544	2,783,971
Revenues from the sale of green certificates	8,657	7,662
Total	<u>683,543,999</u>	<u>625,536,109</u>

(ii) Quantity of energy sold^{*)}

	<u>3-month period ended on March 31, 2021 (unaudited)</u>	<u>3-month period ended on March 31, 2020 (unaudited)</u>
Quantity of energy sold on the regulated market (MWh)	361	701,601
Quantity of energy sold on the free market (MWh)	2,735,788	2,142,925
Total	<u>2,736,149</u>	<u>2,844,526</u>

Starting with 2021, ANRE no longer established delivery obligations for manufacturers on the regulated market. The contracts concluded on the regulated market for the second half of 2020 have delivery in CET hours; the last delivery time in 2020 being the first in January 2021 (361 MWh, regulated price amounting to

RON 183.93/MWh (including Tg)). On the free market, in Q1 of 2021, the Company delivered 99.7% of the sold energy (Q1 of 2020: 75.1%). The average sale price of the electricity sold by the Company on this market in Q1 of 2021 was RON 248.64/MWh (Q1 of 2020: RON 228.90/MWh), value net of Tg.



Decommissioning

In accordance with Government Decision no. 1080/2007, and Radioactive Waste Nuclear Agency("ANDR") is responsible for collecting and managing the contributions made by the SNN for the dismantling of the two units and for disposal of radioactive waste generated in the operation and decommissioning of units.

In 2008 - 2019, SNN paid on an annual basis the following contributions to ANDR:

- (a) Contributions for the decommissioning of each nuclear reactor in amount of 0.6 EUR/MWh of produced and delivered electricity in SEN;
- (b) Contributions for the final storage of radioactive waste, in amount of 1.4 EUR/MWh of produced and delivered electricity in SEN.

Activity of SNN at BSE



Evolution of SNN shares

XII. DIVIDEND POLICY

SNN is a national company with a majority state capital. Thus, the allocation of the net profit complies with the provisions of Government Ordinance no. 64/2001 ("GO 64/2001") regarding the profit distribution in national entities, national companies and companies with total or majority state capital, and autonomous administrations, as further amended and supplemented. Thus, according to the provisions of GO no. 64/2001, the minimum dividend distribution share is 50% of the net profit remained after the distributions provided under art. 1 par. (1) let. a)-e) from O.G. no. 64/2001. The legislative framework could be amended in the future by amending the legislation in force, so that the minimum dividend distribution share would be changed.

The provisions of GO 64/2001 establish a minimum mandatory dividend distribution share. Thus, as long as the provisions of GO 64/2001 remain unchanged, the Company may propose to the shareholders a dividend distribution share between 50% and 100% of the distributable profit. The profit share to be distributed annually by the Company in the form of dividends is subject to approval within the General Meeting of Shareholders. Thus, SNN registers and pays dividends distributed from the net profit, only after the approval of the annual financial statements by the General Meeting of Shareholders and the profit distribution proposal.



The due dividends and payments, respectively, during the last 3 years were as follows:

Indicator [lei]	2019 ²	2018	2017
Retreated net profit ¹⁾ (a)	-	-	306,542,912
Effect of correcting accounting errors (b)	-	-	(2,666,644)
Net profit (c) = (a) + (b)	535,667,264	410,611,215	303,876,268
Distribution to the legal reserve (d)	(31,563,785)	(28,631,164)	(17,845,334)
Other reserves representing tax facilities stipulated by law (e)	(5,682,083)	(3,065,741)	(7,721,372)
Net profit distributable to the dividend (f) = (c) + (d) + (e)	498,421,396	378,914,310	278,309,562
Employees' participation in the profit (g)	(18,700,000)	(16,000,000)	(13,265,000)
Net profit calculation base, dividend distribution (h) = (f) - (g)	517,121,396	394,914,310	291,574,562
Proposed dividends (i)	498,421,396	378,914,310	271,362,466
Allocated dividends	498,421,396	378,914,310	271,362,466
Additionally distributed dividends ³⁾	-	-	485,437,300
Dividends paid until 31.12.2019	-	378,696,423	756,418,732
Profit distribution rate (%) = (i)/(h)	96.38%	95.95%	93.07%
Profit distribution rate ² (%) = (i)/(f)	100.00%	100.00%	97.50%

Corporate Social Responsibility and Sponsorships

The situation of the sponsorships can be found at: <https://www.nuclearelectrica.ro/ir/periodic-reports/?lang=en>

2020 sponsorship program 2020 in numbers

33 initiated campaigns

11 sponsorships in the medical field

4 sponsorships in the social field

9 sponsorships in the educational field

3 sponsorships in the cultural field

5 sponsorships in other fields

RON 9,837,822.39 consumed budget

2,417,466 Romanians benefitted from the CSR and sponsorship program of SNN

Societatea Nationala Nuclearelectrica SA ("SNN") deems as important the involvement in supporting activities carried out by non-governmental associations, non-profit organizations or eligible institutions in virtue of the applicable legislation, which have beneficial effects on a significant number of people. According to the corporate social responsibility statement of SNN, published on the website of the company, the activities supported by SNN are, predominantly, those related to the energy field, and also those related to the active participation in organizations that promote nuclear energy, sustainable public policies in the economic and energy field, such as professional or academic associations involved in the promotion of culture and education.

According to the provisions of the corporate social responsibility statement, in 2020, the activities supported by SNN by granting sponsorships were mainly those related to the medical field, considering the SARS-COV-2 pandemic, and also those related to the energy field, those related to supporting and promoting youth, culture and education, scientific and artistic activities, and those related to the national patrimony, humanitarian activities, and helping children in need. According to the strategic directions adopted by the managers of the company, SNN extended its charity program in order to be able to respond to the punctual requests received from various organizations, which corresponded with the objectives and interests of SNN, with projects with major and durable impact in social areas that required investments. After receiving sponsorship requests from non-governmental and institutional organizations and after analyzing them on the executive level of SNN, in 2020 the Board of Directors of SNN approved the granting of 33 sponsorships, which fitted into the Budget of Revenues and Expenses of SNN for 2020. Considering the epidemiological context of our country in 2020, most of the projects sponsored by SNN were in the medical and educational fields, by fitting hospital units with the necessary equipment and devices for stopping the spread of the Sars-COV-2 virus and for supporting online remote education.

All 33 sponsorships granted by SNN in 2020 had 2,417,466 beneficiaries. They were in the following categories:

- Medical: 11 sponsorships
- Social: 4 sponsorships
- Educational: 9 sponsorships
- Cultural: 3 sponsorships:
- Other sponsorships: 5 sponsorships.

According to the Budget of Revenues and Expenses approved for 2020, by Resolution of the Ordinary General Assembly of Shareholders of SNN no. 3/March 05, 2020, the budget allocated to sponsorship expenses was RON 10,000,000. In total, from the amount budgeted for sponsorships for 2020, of RON 10,000,000, the amount of RON 9,837,822.39 was spent, the equivalent value of a budget implementation of 98.37%. All the sponsorships granted by SNN in 2020 can be deducted from the profit tax payable by the company.

All the projects financed by SNN benefitted from media exposure on the main mass communication channels, and on social media. SNN was promoted as a party involved in these projects by interviews and press articles, publishing information on the websites of the sponsorship beneficiaries and on their social media channels (Facebook, LinkedIn), featuring the SNN brand on the equipment and products purchased by the sponsorships, posting the sponsorship information at the premises of the beneficiary institution and at the events financed by the company. Considering that a significant part of the sponsorship contracts concluded between SNN and the beneficiaries are still in progress, the actions of promoting SNN as a financing party will continue in 2021, until the expiry of the contractual period.

X. INTERNATIONAL RELATIONS

The nuclear industry is especially through the fact that inside it, there is a continuous flow of experience and information exchange. Each operator of Nuclear Plants is part of an international network of approximately 440 Nuclear Units globally. At international level, the leader in international cooperation, in the nuclear field, is the World Association of Nuclear Operators ("WANO"), and at the government level, the International Agency for Atomic Energy from Vienna ("IAEA"). The purpose for the development of this international cooperation network is the analysis of different event categories and the dissemination of lessons learned in order to eliminate recurrence, promoting experiences and optimum practices adopted and implemented internationally, benchmarking and evaluation of implementing standards at international level, control and monitoring of performance indicators and updating them to keep a constant high level of nuclear security, organizing inter-plant evaluation missions for ensuring the adherence and for each operator of Nuclear plants to adopt the best practices at international level and evaluated through de facto performance. Therefore, at the nuclear industry level, it is created what is called the "inter-plant pressure", element which determines keeping certain high security nuclear standards. In general, the international cooperation programs, mainly in the technical operating area, are divided in four distinctive categories: international evaluation missions, experience in operation, technical support and, implicitly, exchange of information and experience, continuous technical and professional development. All information categories and data resulted following the development of these programs are disseminated to all members, within the international system.

SNN pays particular attention to safe operation of nuclear facilities which it operates, to equipment reliability, increased performance in operation, exchange of experience, with direct results on employee performance, involvement in building political support and development programs related to integrated development of the company. Therefore, according to the practice at international level, SNN is an active member in a series of international organizations, with different areas of applicability, from nuclear security, radioprotection, management of radioactive waste up to procurement, financial benchmarking, international law. Depending on their specificity, these organizations can have a regulation and inspection nature for its members in order to improve their performance (e.g. World Association of Nuclear Operators - WANO) or consultative, participatory and inter-sharing of knowledge character, participation in joint projects as an effective mechanism to reduce research and purchase equipment costs.



SNN is affiliated with a number of organizations both at European and international level in order to benefit from the operational experience available in their participation in decision-making processes that may affect European policy and global alignment of nuclear safety standards imposed by CNCAN, recognition of results, among which we mention:

- **World Association of Nuclear Operators (WANO):** represents the association of all owners of Nuclear Power Plants in the world, founded in 1989. SNN has been a member of Atlanta Regional Center since 1991. In 2011 it became a member of London Coordination Centre. WANO membership guarantees: participation in assessment missions, exchange of experience in operating, technical support, technical and professional development. The WANO membership facilitates the information exchange in the field of exploitation experience of Nuclear Plants, therefore WANO members working together for reaching the highest standards in the field of Nuclear Plants exploitation under high nuclear and reliability security standards. Through WANO, all Nuclear Plant holders may communicate and exchange information between them, openly and cooperatively. This working method allows each WANO member to benefit and learn from the experience of other members, to get in line with the best practices global practices in the field, all with the final purpose of increasing the security degree in exploiting the Nuclear Plants they own.
- **Candu Owners Group (COG):** represents a private international non-profit organization, which includes organizations from Canada (AECL, Ontario Power Generation, NB Power, Bruce Power Generation, Hydro Quebec), Argentina, China, India, Korea, Pakistan and Romania. Within COG, SNN participates to the basic program Information Exchange (IE), Research and Development Program (R&D), Nuclear and Environment Safety Program (Nuclear Safety & Environmental Affairs NSEA), Joint Projects Program (Joint Projects - JP). The COG activity is generally focused on a regulation, research, maintenance, development, technical assistance and information exchange program between its members.
- **The International Agency for Atomic Energy (IAEA):** serves as inter-government world forum for the scientific and technical cooperation in the nuclear field. IAEA encourages the use of atomic energy by the signatory states, offering them the necessary technical assistance and providing them experts in the field, respectively the necessary logistic base. Romania is a founding member of IAEA.

NEA OECD: Romania has joined the Nuclear Energy Agency (NEA) within the Organization for Economic Cooperation and Development (OECD) in June 2017. NEA represents the intergovernmental agency that facilitates the cooperation between the countries that use nuclear technology and aim to achieve the highest standard of nuclear safety, corroborated with the performance in environment protection, technological and economic development.

European Nuclear Installations Standards (ENISS): brings together policy makers and specialists in the nuclear industry, along with representatives from nuclear regulatory bodies to establish together security targets, regulations and security measures that will ultimately become a common set of European safety standards for the nuclear installations.

The European Atomic Forum (affiliation to the Romanian Atomic Forum): represents a non-profit European organization with the following purposes: supporting the role of the nuclear energy at an European level by active involvement in the energetic policy of the European Union, adopting support positions for member states operating Nuclear Plants and involving specialists in the work groups at European level in order to centralize different points of view and measures. The results of active attendance within different international organisms is directly reflected in the performance indicators associated to the fields: operation, radioprotection and radioactive waste management.

The nuclear industry, both at European and international level, is dedicated to contribute to overcoming the difficulties that Europe is experiencing. That is: To provide the required volume of nuclear capacity on time and at a competitive cost, in compliance with the latest estimates related to the share of nuclear energy in the energy combination with low carbon emissions. To perform research, development and innovation activities in Europe, in order to identify areas where the nuclear industry may contribute to the decarbonization of other areas, such as industry, heating and transports. To contribute to ensuring energy security: by implementing appropriate nuclear fuel policies in line with Euratom requirements, joining its forces (where relevant) to develop new leadership and partnership agreements in the EU and global distribution networks and also encouraging cooperation with energy regulators in order to further optimize the contribution of nuclear power plants to the stability of the EU's electricity grid.

To continue to set the standard for safety in the energy field, to continue to manage used nuclear fuel and radioactive waste in a responsible manner and invest in research in order to identify additional solutions for such waste. These include technologies to reduce the volume and toxicity of such residues, to reuse spent fuel or generated residues, to reduce radioactive life and ultimately to eliminate any residual waste. To invest in and maintain human capital. SNN is actively involved, by means of its specialists, at international level in everything that means information exchange, technological innovation, good practices, research and development. Hence the non-binding MOU with Nuscale for the exchange of information in the development of small modular reactors, the involvement of personnel in global organizations dedicated to nuclear energy in different working groups.

This context has also opened the way for Romania's accession to the CEM and implicitly our support for NICE Future, a global initiative to position nuclear energy as an important solution in decarbonization. We also have the same involvement within the European Atomic Forum. Recently, within the European nuclear industry, a Manifesto was signed on the role, the actual, concrete potential of nuclear energy at EU level in the medium and long term.

Another recent international cooperation from July is the conclusion of a MoU with Nordion Canada, the largest global supplier of Cobalt 60. This MoU is non-binding and intends to assess the potential of producing Cobalt 60 in the reactors from Cernavoda NPP. This isotope is produced in nuclear reactors from Cobalt 59. Currently, there are 22 reactors producing Cobalt 60 worldwide, of which 10 CANDU, in Canada, Argentina and China. The production technology of Co 60 was developed by Nordion and AECL Canada.

Exploring the possibility of producing this isotope at Cernavoda is a great step forward for the Romanian nuclear industry, in order to leverage yet another of the beneficial effects of the operation of nuclear plants, in this case for the medical system. We would like to become part of the international Co 60 community because we understand the importance for health that this isotope has. Furthermore, it represents a diversification for SNN and implicitly yet another source of income.

The decision, made following the technical studies and analyses, for the production of Cobalt 60 will in no way affect nuclear safety and production. Its collection will be done during the planned outages.

Any international cooperation comes with clear advantages for the company, different environments, energy system, employees. Islandisation and self-sufficiency are completely counterproductive.

Role of nuclear energy in the decarbonization paradigm

In Romania, today the nuclear industry provides 11,000 jobs, direct and indirect, accounting for a 590-million-EURO turnover. Continued investment in the nuclear sector, through the launch of new nuclear projects, would increase employment to 19,000, with effects in reindustrialization and economic growth in the horizontal industry, preserving highly skilled labor, stimulating research, education and engineering, giving Romania a competitive advantage in Europe.

During the SARS-COV-2 pandemic, nuclear energy was and remains a key factor in ensuring a stable, modern, resilient and cost-effective, low-carbon energy system. Nuclear energy is one of the best prepared low-carbon energy sources to help states achieve their decarbonization goals given that nuclear projects are the basis of a resilient and sustainable energy infrastructure. In addition to the challenges that all states had to face in 2020 due to the SARS-COV-2 pandemic, increasing concerns regarding climate change were maintained along with the focus on decarbonization targets and long-term energy policies that configure the role of nuclear energy, globally, regionally and nationally. During the COVID-19 crisis, nuclear power plants continued to generate electricity reliably and uninterruptedly, ensuring the continued operation of critical services essential to coping with the global health crisis and maintaining social stability. Nuclear power has been an important source of flexibility for the energy system, helping to maintain electricity security by operating in the band and complementing the supply of electricity from other sources.

Nuclear power, both through new nuclear projects and especially through the long-term operation of existing reactors, can play a key role in the post-COVID-19 economic recovery. Nuclear power projects will contribute to economic growth, while supporting, in a cost-effective manner, the development of a modern low-carbon electricity generation infrastructure. Nuclear power is able to provide large amounts of low-carbon electricity and heat, while creating a large number of high-value jobs in local and national economies. Each nuclear power

project also builds a valuable infrastructure pole for research and innovation. The studies and scenarios of the International Atomic Energy Agency, the International Energy Agency of the OECD, the Massachusetts Institute of Technology, but not only, conclude that decarbonization is not possible without the contribution of nuclear energy. In order to meet the decarbonization objectives, while ensuring the increasing demand for electricity and sustainable development, it is necessary to expand the existing nuclear capacities.

There are extensive studies that show unequivocally that without nuclear energy it is extremely difficult to achieve the goals. It is estimated that without nuclear energy, the costs of transitioning to a low-carbon economy would increase by \$ 1.6 trillion. Correlated with the expansion of nuclear capacities in Romania and with the development of the nuclear industry in general, the Sustainable Recovery Plan developed by the OECD through the International Energy Agency and the International Monetary Fund addresses 3 significant pillars of economic recovery: stimulating the economy, creating jobs and improving resilience and sustainability in the energy sector. This plan provides a clear role for nuclear energy, both by projects for extending the lifecycle of the existing fleet and by building a new nuclear unit, especially small modular reactors (SMR), as nuclear energy is essential in reaching post-crisis economic growth, creating 9 million jobs a year and reducing emissions by 4.5 billion tons until 2023 compared to 2019, as these are the objectives assumed for economic recovery.

In addition to energy production, the nuclear industry has other major benefits associated with other industries. One of these is the use of thermal and electrical energy for the production of hydrogen, which so far comes mainly from the gas industry. The nuclear industry can play a major role in this regard, with the need for hydrogen known in other major industries. Thus, the integrated systems with multiple effects are already in question. As an example, a single reactor with an installed capacity of 1000 MW can produce more than 200,000 tons of

hydrogen per year. Globally, interest in nuclear power increased during 2020 with the Covid-19 pandemic. About 10% of the world's electricity is generated by about 440 nuclear reactors, so nuclear reactors have a key role to play in maintaining a reliable power supply, which is vital. About 50 reactors are under construction, equivalent to about 15% of the existing capacity. Nuclear power plant operators have taken a number of significant measures to protect their workforce and have implemented business continuity plans to ensure the continued operation of key aspects of their activities. There have been no forced shutdowns of any nuclear reactors due to the effects of Covid-19 on the workforce or supply chains, according to reports from operators and regulators received through the International Atomic Energy Agency's (IAEA) Covid-19 operational experience network and the International Reporting System for Operating Experience (IRS). According to the IAEA, operators and regulators have continued to ensure the stability and safety of nuclear power plants around the world, even though the pandemic has affected them in various ways, including planned shutdowns and maintenance programs. Nuclear technologies have medical applications that will help fight Covid-19. The IAEA provides diagnostic kits, equipment and training in detection techniques to countries seeking assistance in addressing the global spread of the new coronavirus. The assistance, requested by 14 countries in Africa, Asia, Latin America and the Caribbean, is part of the intensified global efforts to reduce infections. There is a clear need for new nuclear capacities all over the world, in order to replace old power stations that use fossil fuels, especially coal, and which produce significant emissions of carbon dioxide, and in order to satisfy the high demand of electricity, especially in emerging states. Currently, approximately two thirds of the electricity of the world comes from burning fossil fuels. Until 2050, if the climate change objectives are achieved, 80% or more of electricity will have to be produced with low-carbon emissions.

Extending access to energy and, at the same time, drastically reducing greenhouse gas emissions that cause global warming and climate change are among the central challenges of mankind in the 21st century. Nuclear power is a major part of the solution to produce carbon-free energy in many parts of the world, such as the United States, the European Union, Japan, South Korea, making an important contribution to reducing greenhouse gas emissions, while providing increasing quantities of electricity necessary to develop the global economy. Increased demand for electricity is particularly rapid in emerging countries, especially in Africa, where demand will increase by 100 - 450% until 2050. While today most people without access to electricity live in rural areas, most of the population growth by 2030 will take place in cities. Achieving the goal of securing access to electricity for an additional 1.3 billion people globally by 2030 will require a combination of less polluting power generation solutions. In this scenario, nuclear power will be part of the solution, due to the advantages it holds, such as stability in national systems, clean energy, baseload production. The contribution of nuclear energy to avoiding short-term CO2 emissions will be achieved by nuclear power plants in operation, under construction and in preparation. At European Union level, in order to achieve the goal of decarbonization the economy by 2050, a quarter of the EU's electricity production needs to be from nuclear sources. Regarding the prospects of nuclear energy in Central and Eastern Europe with the target of 2050, Romania supports the idea of a balanced and efficient energy mix in which nuclear power has a significant share and an important contribution to achieving the decarbonization targets and the strategic objectives assumed by Romania. SNN, through the strategies and measures it has adopted, will continue to play an essential role in ensuring the stability and security of the energy system, both through its current capabilities and in the long run, through its major investment projects. Romania acknowledges the contribution of nuclear energy, the baseload production source, to the decarbonization of the energy system and promotes nuclear energy as a clean primary source of energy production. On national level, by the energy strategy for 2050, the development of new nuclear capabilities is provided as an essential component of maintaining medium- and long term energy independence and ensuring the achievement of the decarbonization targets. Nuclear energy on global and European level is shaping up as a firm and reliable option for ensuring the current and future energy necessities, and is supported both by governments and the population, is a continuously evolving industry, with innovative projects and proven performance. Romania is within this European development, by the firm commitment of the nuclear program and the role of regional hub of research and innovation. For 2021, the operational priority of SNN remains nuclear security, constant production, stable financial results and development.

