
**THE NATIONAL COMPANY**

**NUCLEARELECTRICA S.A.**

# MANAGEMENT PLAN

**9 July 2013**

**CONTENTS**

# 1. EXECUTIVE SUMMARY

This management plan has been drafted in compliance with the provisions of art. 30, paragraph 1 of Government Emergency Ordinance (GEO) no. 109/2011, by the members of the Board of Directors, appointed after completion of the selection procedure provided in the indicated regulation, by Resolution no. 8/ April 25th, 2013 of the General Shareholders' Meeting of the National Company Nuclearelectrica S.A.

The aim of the management plan is to present the company's management strategy during the Board of Directors' mandate, in order to achieve the objectives and performance indicators established in the mandate agreement.

In developing the management plan, it has been taken into consideration the specific and unique character of the main scope of business - electric and thermal energy production by nuclear means – within the national economic framework.

Moreover, the geopolitical and market realities (dynamic market environment, the gradual deregulation of the energy market) under which the company carries out its business, have been also taken into consideration.

The objectives proposed by this management plan, as well as the steps to achieve them, have as basis the overall positive results the Company obtained so far and the excellent operational performances of the Cernavoda Nuclear Power Plant.

In relation with the indicated conditional elements, the main objectives of the Board of Directors are:

1. The operation of the nuclear facilities under nuclear safety and security conditions for the personnel, population, environment and production assets.

2. Maintaining the electric energy production capacity over the current average industry level.

3. The achievement of the major investment objectives.

4. The improvement of the Company's financial performance indicators.

The targets of the performance indicators associated with the undertaken objectives (detailed in section 5.3.2, for the period 2013-2017) are also based on the results obtained so far by the Company and by the Cernavoda Nuclear Power Plant – as main unit in generating them – and on the potential analysis which support the Board of Directors' commitment to place the company among the high productive companies in terms of economic and financial results, as well.

The management strategy measures included in this plan comply with the corporate governance principles, which regulate that the Company is to maintain a responsible, professional and ethical attitude in its relation with the key stakeholders, and are adapted to

the main goal for which they were proposed – namely to achieve the undertaken objectives and main targets: the maintenance of a capacity factor of the Cernavoda Nuclear Power Plant over the average industry level, provided that the nuclear safety standards are met; the increase by approximately 30% of the turnover by 2017, compared to 2012; the increase by approximately 3.6 times of the Company's profit, during the same reference period.

The management plan has been discussed by the members of the Board of Directors in the meetings held on July 3rd, 2013 and July 9th, 2013 and is to be submitted for approval to the General Shareholders' Meeting of the National Company Nuclearelectrica S.A.

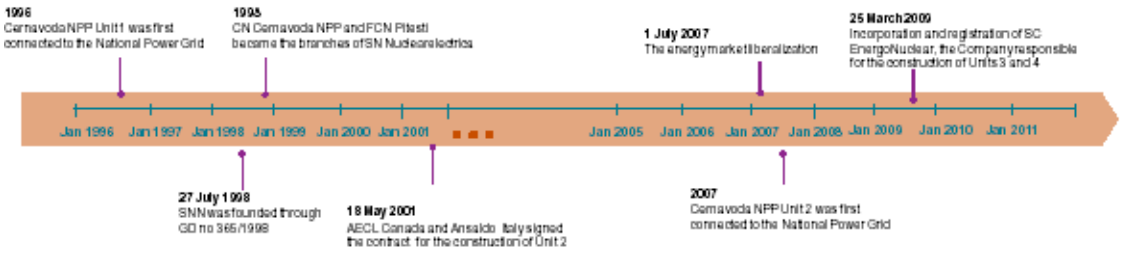
# 2. PRESENTATION OF THE COMPANY

## 2.1. General Presentation

The National Company Nuclearelectrica S.A. ("SNN" or the "Company") has been founded on July 27th, 1998 by the Government Resolution (GR) no. 365/1998, following the restructuring of the Romanian energy system. Prior to this restructuring, the nuclear power plant was part of RENEL, a vertically integrated national company, which has been divided in several state-owned companies.

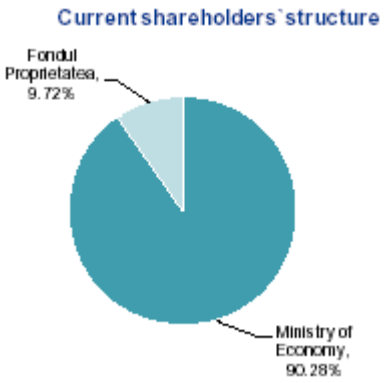
The Company has two operational nuclear reactors (Units 1 and 2 in Cernavoda); Unit 1 is in operation since 1996, while Unit 2 has been commissioned at the end of 2007.

The Company's evolution is presented below:




SNN is an important player on the Romanian electric energy market, covering about 19% of the country's electric energy demand through Units 1 and 2 from Cernavoda in 2010, about 20% in 2011 and namely 19.4% in 2012. The state, through the Ministry of Economy holds 90.28% of the SNN's shares, while Fondul Proprietatea holds the rest of 9.72%.

Diagram 1: The Structure of the SNN's shareholding




According to GR no. 39/2012, supplemented by GR no. 380/2013, the Romanian

Government has approved the privatization of the SNN by increasing its capital with 11.077%, out of which 1.077% represents preemption rights granted to the current private shareholder (Fondul Proprietatea). The rest of 10% of shares shall be sold on the stock market and the subscription price shall range between a lower limit of RON 11.20/share and an upper limit of RON 15.00/share.

At Company level, the decision-making structure is represented by:

- **The General Shareholders' Meeting (GSM),** which represents the highest coordination level and which reviews and approves the Company's strategy and policy.

- **The Board of Directors**, which is responsible for supervising the current activity and takes decisions at a superior level of competence.

The Board of Directors currently has the following structure:

- Alexandru Sandulescu - member and President (date of appointment: April 25th, 2013, mandate expiration date: April 25th, 2017).

- Alexandru Alexe – member and Vicepresident (date of appointment: April 25th, 2013, mandate expiration date: April 25th, 2017).

- Daniela Lulache – member (date of appointment: April 25th, 2013, mandate expiration date: April 25th, 2017).

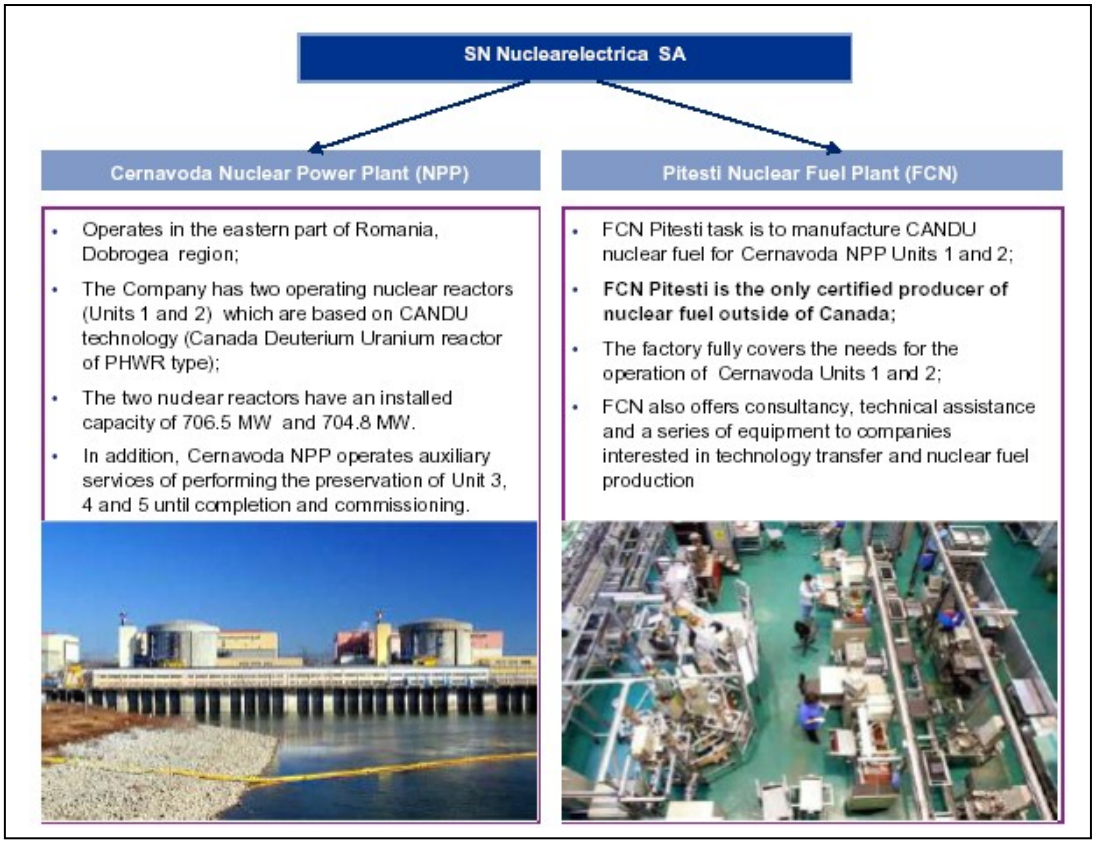
- Ionel Bucur - member (date of appointment: April 25th, 2013, mandate expiration date: April 25th, 2017).

- Dragos Paul Popescu - member (date of appointment: April 25th, 2013, mandate expiration date: April 25th, 2017).

- Carmen Radu - member (date of appointment: April 25th, 2013, mandate expiration date: April 25th, 2017).

- Dan Popescu - member (date of appointment: April 25th, 2013, mandate expiration date: April 25th, 2017).

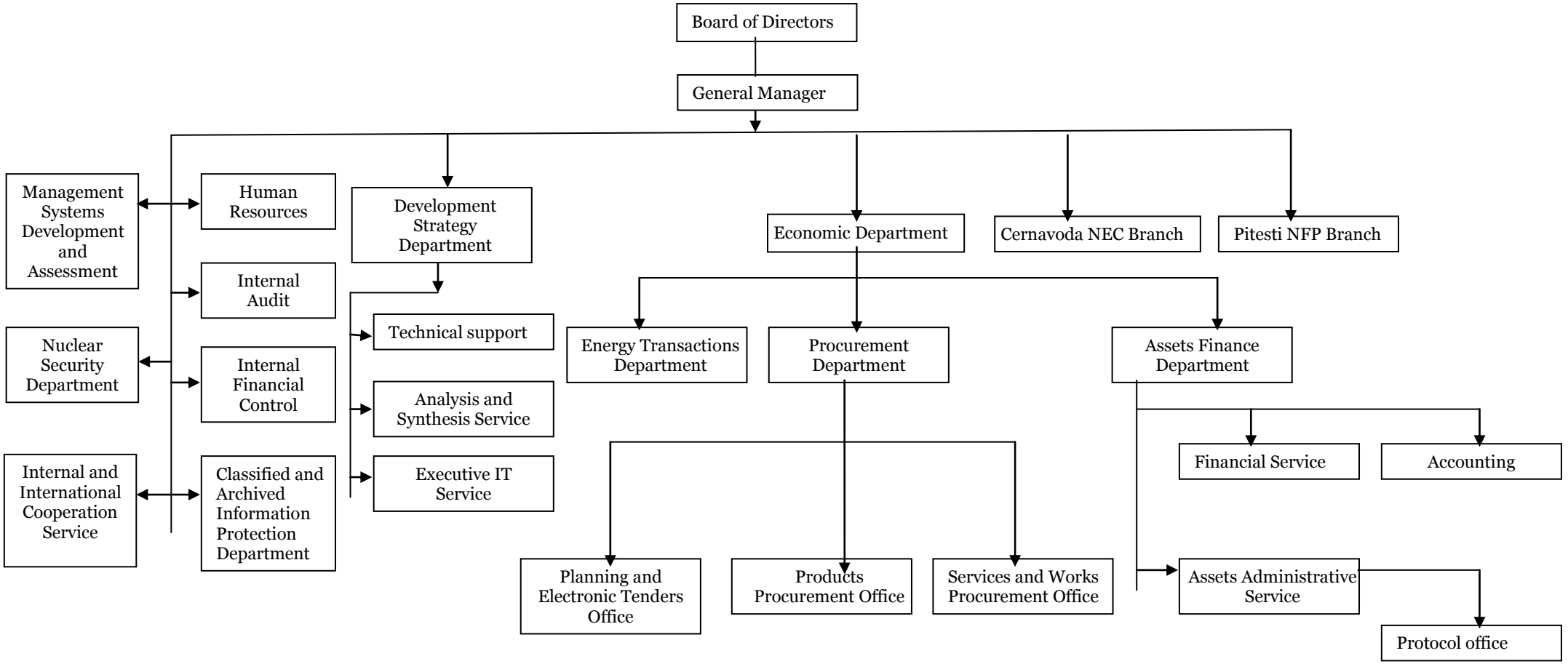
The National Company Nuclearelectrica SA is headquartered in Bucharest and has two branches, presented below:




Since the conceptual design and until de start of operations, Cernavoda NPP went through a long journey, through the several construction stages, some not yet completed. In 1976 the "Romanian-Canadian feasibility study for the implementation of the CANDU type system in Romania" has been completed. In 1979 the first construction stage began, which expanded over several periods, also including the cease of the activities. The activities have developed taking into account the consistent relations between the national authorities, the companies in the field and the Canadian contractual partners – AECL (the Atomic Energy of Canada Ltd.). Unit 1 was commissioned in 1996 and in 2007 Unit 2 was connected to the national electricity grid.

Pitesti NFP has been founded in 1992 within the Nuclear Energy Group of the Authority for Electric Energy in Romania. In 1998, the plant became SNN's branch. In 2006, the SNN carried out refurbishment and expansion activities at the Pitesti plant, in order to meet the fuel demand of Unit 2. Currently, the plant operates at full capacity.

The chart below shows the organizational structure within the Company.



## 2.2. Description of current activity

### 2.2.1 Electric energy production activity

The nuclear reactors 1 and 2 of Cernavoda NEC use the CANDU 6 type of technology and have an installed power of 706.5 MW and 704.5 MW, respectively. The CANDU technology has numerous advantages, the most important one being that it uses non-enriched uranium ore, extracted in Romania.

As it turns out from the designation of the nuclear reactor, the technology is based on a Canadian (CAN) system, which uses heavy water (D) as moderator and uranium (U) as nuclear fuel.

#### 2.2.1.1 Heavy water

The total heavy water demand for the operation of Units 1 and 2, which between 2007 and 2012 was on average of 6 tons per year, is purchased from Romag-Prod, the branch of the Romanian Authority for Nuclear Activities (RANA), which operates under the authority of the Ministry of Economy.

The SNN currently has in stock 75 tons of heavy water stored in the States Reserves, purchased between 2006 and 2011 out of own resources, according to Government Emergency Ordinance (GEO) no. 30/2009.

*Price information*

The price of heavy water is regulated, being established by the Ministry of Public Finances. According to GEO no. 36 of February 2001, article 3.3, the purchase price of heavy water for Units 1 and 2 is adjusted based on the average RON to USD exchange rate, calculated for the first 20 days of the month for which the adjustment has been requested.

The purchase price paid by the SNN for the heavy water was of RON 1,428/kg between December 5th, 2006 and March 15th, 2009. Starting with March 16th, 2009, the purchase price became RON 2,050/kg, having an increase of about 44%, while the increase of the USD/RON exchange rate between December 2006 and March 2009 was of approximately 30%. Starting with March 3rd, 2010, the purchase price of heavy water increased to RON 2,146/kg.

Table 1: The evolution of the heavy water price between 2008 and 2012

| The evolution of heavy water price | | | | | |
|---|---|---|---|---|---|
| | **2008** | **2009*** | **2010**** | **2011** | **2012** |
| Price (RON/kg) | 1,428 | 2,050 | 2,146 | 2,146 | 2,146 |
| Price (EUR/kg) | 388 | 483 | 510 | 499 | 482 |

*Starting with March 2009, the price of heavy water increased to RON 2,050/kg in compliance with the Order of the Ministry of Public Finances (OMPF).

** According to OMPF, starting with March 2010 the price of heavy water increased to RON 2,146/kg.

*Source: SNN*

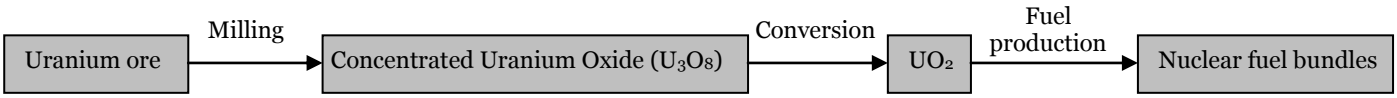
2.2.1.2. Nuclear fuel

Units 1 and 2 use about 11,000 nuclear fuel bundles annually, each containing approximately 19 kg of uranium. To manufacture the necessary nuclear fuel bundles, the Pitesti NFP operates at full capacity. The fuel bundles are transferred from Pitesti branch to Cernavoda NPP for a fee.

*History regarding the production of fuel bundles in Pitesti*

The "CANDU 6" type of reactors can generally use several types of fuel, but Units 1 and 2 from Cernavoda use natural, non-enriched uranium pellets. The CANDU nuclear fuel bundles undergo a manufacturing process which is different from the one of the non-CANDU fuel rods. The uranium ore is the raw material for the nuclear fuel bundles, being partially supplied by the mines in Romania. After the uranium ore has been extracted, it goes through several processing and refining (milling) phases, which generate a concentrated material in the form of a yellow cake which contains about 70-90% $U_3O_8$ (concentrated uranium oxide). During the transformation process, the uranium ore is firstly transformed in $UO_2$ which may be used as fuel in CANDU reactors. During the enriching process, $UO_2$ may be turned into $UF_6$ (uranium hexaflouride), which is necessary only for non-CANDU reactors. $UO_2$ necessary for the CANDU reactors is then encased in nuclear fuel bundles. For the conventional Pressurized Water Reactors (PWR), $UF_6$ needs to be further enriched and encased in fuel rods in a fuel facility.

Diagram 2: The manufacturing process of fuel bundles




*Source: The Company*

*Information regarding the price*

Romania does not have a uranium market, the only supplier being the Uranium National Company (UNC). The uranium price is negotiated between the UNC and the SNN. As of January 1st, 2007, all provisions in the uranium purchase agreement, including price, depend on the approval of the European Commission through the Euratom Supply Agency (ESA).

The following table indicates the uranium purchase price, according the agreement between SNN and UNC:

Table 2: Uranium purchase price (2008 - 2012)

| Uranium purchase price | | | | | |
|---|---|---|---|---|---|
| | **2008** | **2009** | **2010** | **2011** | **2012** |
| Uranium purchase price (RON/kg) | 310 | 365 | 383 | 383 | 560 |
| Uranium purchase price (USD/pound) | 56 | 54 | 55 | 58 | 73 |
| Uranium purchase price (EUR/kg) | 84 | 86 | 91 | 92 | 125 |

*Source: SNN*

According to the Romanian Energy Strategy for 2007-2020 (updated in August 2011), the national uranium reserves will have to be combined in the foreseeable future with other sources (such as the import of uranium or the leasing and exploitation of uranium mines outside Romania) in order to meet the operational necessities of Units 1 and 2.

A general presentation of the international uranium market may be found in Appendix 1.

### 2.2.2 The sale of electricity

In regards to the sales of electricity, SNN operates both on the regulated market and on the competitive market. In the last five years the SNN's revenue from the sale of electric energy has been obtained in large part from the sale of energy on the regulated market.

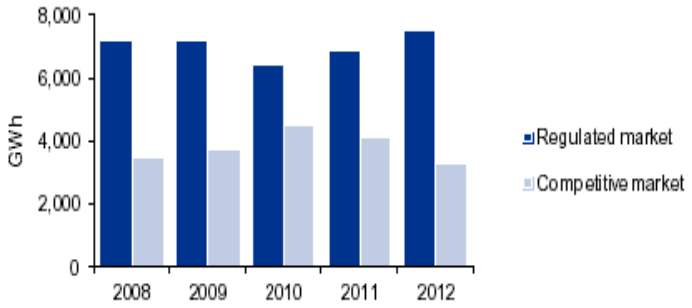
The competitive markets on which SNN operated between 2008 and 2012 are the following:

- The centralized market of bilateral agreements (through public tenders organized by OPCOM);
- Directly negotiated agreements with suppliers, including mutual aid agreements with other electric energy manufacturers;
- The Day Ahead Market;
- The Balancing Market.

During the last five years, the sales of SNN on the regulated and competitive markets followed a trend similar to the electric energy consumption in Romania, being directly influenced by the consumption of captive consumers.

The Company sells only a relatively small portion of its energy on the balancing market. This fact is mostly due to both the technological (unplanned outages) and economical aspects in which SNN develops its activities and operations. On the one hand, the Company can produce only at a relatively constant load factor with small variations for long periods of time, and, on the other hand, most contracts are build in such a manner that accommodate the technological characteristics of selling in base load.

Diagram 3: Quantities sold on the regulated and competitive markets (2008 - 2012)




During 2012, the quantity of electric energy sold by the SNN was of 10,788 GWh. During 2011, SNN sold 10,793 GWh, while in 2010 the quantity sold was of 10,918 GWh, representing 20% of the total electric energy consumption in Romania.

The following table shows the comparison between the electric energy sold by the SNN on the regulated market compared to the national market.

Table 3: Quantity sold by SNN on the regulated market (2008 - 2012)

| Quatities | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|---|
| Total energy sold by SNN (GWh) | 10,511 | 10,953 | 10,918 | 10,973 | 10,788 |
| % of energy sold on regulated market | 68% | 66% | 59% | 62% | 70% |
| Energy sold on regulated market (national level) | 29,104 | 30,334 | 28,842 | 28,021 | *23,677 |
| Total energy sold by SNN through bilateral contracts | 25% | 24% | 22% | 24% | 32% |

Source: SNN

Table 4: The quantities of electricity sold by the SNN on the regulated and competitive markets (2008-2012)

| Quantities (GWh) | | | | | |
|---|---|---|---|---|---|
| | 2008 | 2009 | 2010 | 2011 | 2012 |
| Regulated market | 7,200 | 7,230 | 6,418 | 6,849 | 7,499 |
| Competitive market | | | | | |
| Directly negotiated contracts | 370 | 786 | 1,932 | 1,707 | 2,457 |
| Bilateral contracts | 2,853 | 2,564 | 1,969 | 1,751 | 262 |
| Day Ahead Market | 88 | 373 | 599 | 666 | 570 |
| Total | 10,511 | 10,953 | 10,918 | 10,973 | 10,788 |

*Source: SNN*

Between 2008 and 2012, the SNN sold most of the quantity manufactured on the regulated market and as a result, it did not benefit from the higher prices on the competitive market.

The price on the regulated market is established based on the decisions of the Romanian

Energy Regulatory Authority (ANRE) and is lower than the prices on the competitive market.

Table 5: Average sales of electricity of SNN on the regulated and competitive markets (2008-2012)

| Rates (EUR/MWh) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **2008** | | **2009** | | **2010** | | **2011** | | **2012** | |
| | **EUR** | **RON** | **EUR** | **RON** | **EUR** | **RON** | **EUR** | **RON** | **EUR** | **RON** |
| **Regulated market** | 32 | 119 | 28 | 119 | 30 | 126 | 29 | 121 | 28 | 123 |
| **Competitive market** | | | | | | | | | | |
| Directly negotiated agreements | 37 | 138 | 36 | 154 | 37 | 154 | 37 | 158 | 46 | 205 |
| Bilateral agreements | 47 | 174 | 45 | 191 | 40 | 168 | 39 | 168 | 40 | 176 |
| Day Ahead Market | 43 | 157 | 32 | 135 | 30 | 126 | 48 | 201 | 40 | 178 |

*Source: SNN*

The average sale rates of electric energy have dropped during the reviewed period, as a result of the economic crisis.

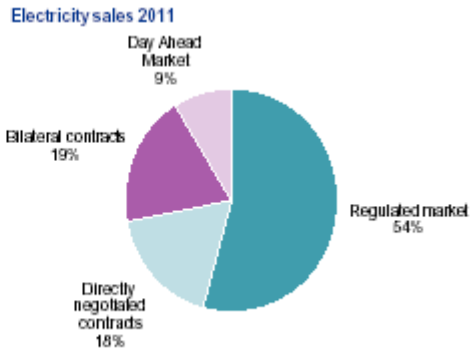
Table 6: The revenue of SNN according to the type of market (2008 - 2012)

| Revenue (millions) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **2008** | | **2009** | | **2010** | | **2011** | | **2012** | |
| | **EUR** | **RON** | **EUR** | **RON** | **EUR** | **RON** | **EUR** | **RON** | **EUR** | **RON** |
| **Regulated market** | 233 | 857 | 203 | 860 | 192 | 809 | 196 | 829 | 207 | 922 |
| **Competitive market** | | | | | | | | | | |
| Directly negotiated agreements | 14 | 51 | 28 | 121 | 71 | 299 | 64 | 269 | 113 | 503 |
| Bilateral agreements | 142 | 526 | 116 | 490 | 79 | 331 | 69 | 294 | 10 | 46 |
| Day Ahead Market | 4 | 14 | 12 | 50 | 18 | 75 | 32 | 134 | 23 | 102 |
| **Total** | 394 | 1448 | 359 | 1521 | 360 | 1514 | 361 | 1526 | 353 | 1572 |

*Source: SNN*

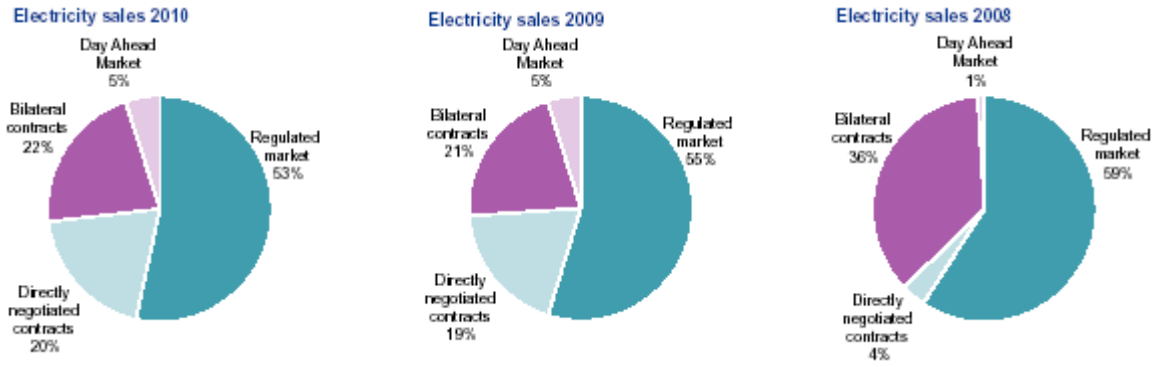
The charts below show the history of revenue obtained from the sale of electric energy between 2008 and 2012.

Diagram 4: The revenue structure for 2012 and 2011

*Source: SNN*

Diagram 5: The revenue structure for 2008, 2009 and 2010




*Source: SNN*

**Regulated Market**

In 2012, the revenue obtained from sales on the regulated market represented approximately 59% of the total generated revenue, while in 2011 it represented 54%. The total amount of electric energy manufactured has been sold to 13 (prior to the set-up of the Electrica Furnizare their number was 15) supply and distribution companies (former and current subsidiaries of SC Electrica SA), in order to provide electric energy to the captive consumers and in order to meet its own technological consumption of the distribution networks. In 2010, the revenue obtained from sales on the regulated market represented 53%, while in 2009 and 2008 the percentages were of 55% and 59%, respectively. The sales on the regulated market followed the consumption curves of the captive consumers of the national energy consumption.

**Bilateral contracts concluded through OPCOM**

In 2012, the revenue obtained from the sales of energy through the bilateral agreements concluded on the OPCOM platform was of approximately 3% out of the total of electricity sales. In 2011 the sales through bilateral contracts accounted for most of the activities carried out by SNN on the competitive market, registering a percentage of 42% out of the Company's total sales on this market. The bilateral contracts have been concluded as a result of the tenders organized on the OPCOM platform, under transparency conditions. The main companies that have purchased electric energy from SNN through tenders in 2012 are Electrica Furnizare, Tinmar Ind, Ennet Grup, Electromagnetica and Ezpada. The winners of these tenders in 2011 include Energy Holding, Energy Financing Team, ELCOMEX Energie, ENOL and Electromagnetica. In 2010, these sales represented about 2% of the total revenue, while in 2009 and 2008, they represented 21% and 36% respectively. The bilateral

agreements are concluded for a period of one year. The increase of the Nuclearelectrica sales percentage through bilateral contracts depends on the ANRE's policy regarding the obligations imposed on the electricity producers.

**Directly negotiated contracts (including mutual aid agreements with other producers)**

Besides the contracts concluded on the OPCOM trading platform, Nuclearelectrica also concluded directly negotiated agreements with other suppliers or producers, with the latter having concluded mutual aid agreements. In 2012, the revenue obtained through these contracts has been of approximately 32% out of the total sales, accounting for 78% of the income obtained on the competitive market. Compared to 2011, the revenue obtained through directly negotiated contracts has increased with about 86%. In 2010, 2009 and 2008, the revenue obtained through these types of contracts accounted for 20%, 19% and 4% respectively of the SNN's total sales.

**The Day Ahead Market (DAM)**

The DAM does not represent a primary market for SNN, the quantities sold on this market being limited. The revenue obtained from the sale on the DAM has been of approximately of 6% in 2012 and 9% in 2011. In 2010, 2009 and 2008 these revenues accounted for only 5%, 5% and 1% respectively out of the sales total. Furthermore, the SNN has participated as buyer on the DAM. In extreme and prolonged circumstances, when SNN has to purchase energy, the Company usually resorts to the mutual aid agreements concluded with other energy producers, as well as to the backup contracts settled on the Centralised Market for Bilateral Contracts with other energy suppliers – Energy Financing Team, ELCOMEX, rather than buying on the DAM..

## 2.3. Financial and operational information for the historic period analyzed

The table below presents the operational and financial information of the Company during the historic period analyzed.

Table 7. Main operational and financial information of SNN for the period 2008-2012

| Operational and financial information | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|---|
| Output (GWh) | 10,732 | 11,752 | 11,623 | 11,747 | 11,466 |
| Income (million EUR) | 406 | 380 | 369 | 386 | 379 |
| OPEX (million EUR) | (231) | (164) | (235) | (255) | (255) |
| EBITDA (million EUR) | 175 | 216 | 134 | 131 | 124 |
| Amortization and depreciation (million EUR) | (91) | (87) | (90) | (93) | 89 |
| Financial result (million EUR) | (58) | (66) | (41) | (14) | (20) |
| Interest (million EUR) | (37) | (21) | (11) | (11) | (16) |
| Net profit (million EUR) | 21 | 65 | 2 | 20 | 5 |
| Assets (million EUR) | 2,672 | 2,450 | 2,545 | 2,618 | 2,490 |

Source: Information selected from the IFRS Financial Statements for years 2008, 2009, 2010, 2011 and 2012.

The electricity output of SNN has been relatively constant, amounting to approximately

11,700 GWh per year. 2008 was the first year when Unit 2 was fully functional for the entire duration of the year and, as a result, the capacity factor was lower.

The income resulted from the selling of electricity, expressed in EUR is lower in 2009 as compared to 2008, in particular because of the variations of the average RON/EUR exchange rate (15% depreciation in 2009 as compared to 2008). In 2010 the income dropped slightly on account of the lower average tariff charged for the electricity sold (tariff reduced by 1%). The income of the Company increased by approximately 4.5% as compared to the value registered in 2010. In 2012, the income dropped on account of the increased amount of electricity sold on the regulated market, where the prices are lower.

The trend of operational expenses is similar to that of the electricity output. However, the operational expenses dropped in 2009 as a result of the cancellation of the provision registered by SNN for the depreciation of Units 3 and 4, amounting to EUR 65 million, which was reversed by reducing the operational expenses.

The following table presents the key financial ratios, calculated for the analyzed historic period.

Table 8: Key financial ratios for SNN (2008-2012)

| Financial Indicator | Formula | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|---|---|
| Profitability Ratios | | | | | | |
| EBITDA (mil. EUR) | Operating Revenues - Operating Expense (less Depreciation) | 175 | 216 | 134 | 131 | 125 |
| EBITDA margin (%) | EBITDA/Operating Revenues | 43% | 57% | 36% | 34% | 33% |
| Operating profit margin (%) | EBIT/Operating Revenues | 21% | 34% | 12% | 10% | 9% |
| NI (Net Income - mil. EUR) | EBT - Income Tax | 21 | 65 | 2 | 20 | 5 |
| Net profit margin (%) | NI/Operating Revenues | 5% | 17% | 1% | 5% | 1% |
| Return on Assets (%) | NI/Total Assets | 0.78% | 2.66% | 0.07% | 0.76% | 0.19% |
| Return on Equity (%) | NI/Total Equity | 1.10% | 3.72% | 0.10% | 1.03% | 0.26% |
| Liquidity Ratios | | | | | | |
| Current ratio | Current Assets/Current Liabilities | 4.11 | 6.61 | 3.37 | 3.37 | 2.38 |
| Quick ratio | (CA - Inventories)/CL | 1.36 | 2.23 | 2.18 | 2.28 | 1.79 |
| Financial leverage ratios | | | | | | |
| Net Debt (mil. EUR) | LTL*+Current LTL*-Cash | 529 | 445 | 450 | 391 | 326 |
| Interest cover | EBIT/Interest | 2.25 | 6.31 | 4.09 | 2.18 | 2.19 |
| Debt-to-Equity | (LTL*+Current LTL*)/Equity | 0.34 | 0.32 | 0.31 | 0.28 | 0.27 |
| Net Debt/EBITDA | | 3.02 | 2.06 | 3.35 | 1.49 | 2.60 |
| Short term debt coverage | Operating Cash Flow/STL* | 1.78 | 1.46 | 2.00 | 3.04 | 1.83 |
| DSCR | FCF*/(Interest+Repayments) | 1.55 | 1.89 | 2.05 | 2.97 | 2.96 |

Source: Information selected from the IFRS Financial Statements for years 2008, 2009, 2010, 2011 and 2012.

As a general observation regarding the evolution of the main financial ratios during the analyzed historic period, the net profit of 2009 was influenced by the reversed provision described above. However, this unique event had no impact on the cash flow of the Company, it only influenced the accounting profit. In 2012, the operational profit decreased as compared to 2011 by approximately 4.5%, while the net profit margin was 1%. Interest cover ratio was influenced by lower interest rates during 2008-2012.

As for the liquidity of the Company, the current liquidity ratio had higher values in 2008 and 2009 on account of the fact that during this period, the heavy water acquired as the future contribution to the share capital of EnergoNuclear had been included in the current assets, as inventories. As of 2010, the heavy water has been reclassified from inventories into non-current assets and it is to be transferred to the state reserves. Deb to equity decreases each year as the Company is reimbursing the loans contracted for the financing of Unit 2 and no additional loans have been contracted since.

The table below presents information about the long term loans of SNN.

Table 9: SNN's long term loans

| Institution | Name of the loan | Currency | Outstanding amount at 31 Dec 2012 - Ccy | Outstanding amount at 31 Dec 2012 - EUR | Interest | Reimbursement period |
|---|---|---|---|---|---|---|
| Societe Generale France | Ansaldo | EUR | 73 | 73 | 6m EURIBOR + 0.45% | 2007 - 2022 |
| Societe Generale France | Nexans | EUR | 6 | 6 | 6m EURIBOR + 0.45% | 2007 - 2017 |
| Societe Generale France | Alstom | EUR | 5 | 5 | 6m EURIBOR + 0.45% | 2007 - 2017 |
| Societe Generale United States | General Electric | USD | 15 | 11 | 6m LIBOR + 0.07% | 2008 - 2017 |
| EURATOM | Tranche 1 | EUR | 100 | 100 | 6m EURIBOR + 0.08% | 2013 - 2022 |
| EURATOM | Tranche 2 | EUR | 90 | 90 | 6m EURIBOR + 0.08% | 2015 - 2024 |
| EURATOM | Tranche 3 | EUR | 34 | 34 | 6m EURIBOR + 0.08% | 2017 - 2024 |
| Societe Generale Canada | AECL | CAD | 208 | 154 | 6m CADOR + 0.375% | 2007 - 2022 |
| BCR Romania | BCR | RON | 104 | 23 | 6m ROBOR - 1.1% | 2009 - 2014 |
| Total Outstanding amount in EUR | | | | 497 | | |

Total outstanding long term borrowings are in amount of EUR 497 million as of 31st of December, 2012. All the loans have been contracted to finance the construction of Unit 2 and guaranteed by the state..

The loans for Unit 2 were contracted from EURATOM, Societe Generale and from BCR Romania. These loans were guaranteed by the state, they have a reimbursement period between 6 and 16 years and a grace period between 2 and 4 years during the construction of Unit 2. The loans granted from EURATOM are the exception, as they have an additional grace period of 6 to 10 years, starting from 2007, when Unit 2 was commissioned.

EURATOM loan agreements mention the following financial covenants: the debt services cover ratio can not be less than 1.5; debt to equity has to be higher than 0.5; SNN total operating revenues have to cover all cost of operation and maintenance of Units 1 and 2, and the related debt service cost. SNN has to comply with these covenants during the lifetime of EURATOM loan until 2024. AECL, Ansaldo and Nexans loans agreements stipulate covenants related to SNN‘s restriction to grant any guarantee or lien on any of its assets, without the prior written consent of the lenders.

## 2.4. Major investment projects in progress and other investment opportunities

2.4.1 Major investments related to the operation of Unit 1 and Unit 2

A major investment project which the Company is to develop between 2015-2026 refers to the extension of the life cycle of Unit 1 by up to 30 years, by replacing key pieces of equipment, essential for the operation of the nuclear plant.

The estimated values of these major investments related to the operation of Unit 1 and Unit 2, planned for the period 2011-2023 are presented below:

Table 10: Major investments planned for the period 2011-2023

| Investment projects | Amount (million EUR) | Amount (million EUR) | Duration (2011-2023) |
|---|---|---|---|
| Refurbishment and improvements regarding nuclear safety | 60 | 264 | 2011 - 2023 |
| Intermediary Dry Spent Fuel Storage | 52 | 204 | 2011 - 2012 |
| Extension and refurbishment of the physical protection system | 18 | 76 | 2011 -2016 |
| Work Management System (WMS) software | 23 | 95 | 2011 - 2013 |
| D2O Detritiation Station | 125 | 540 | 2011 - 2023 |
| Development of computerized infrastructure | 2 | 9 | 2011- 2023 |
| **Total** | **280** | **1,188** | |

Source: CNE Cernavoda Strategic Investment Plan for the period 2011-2023

- The implementation of additional special systems aimed at enhancing the nuclear safety of Cernavoda NPP following the Fukushima accident. It is estimated that the investment will be completed in 3 years, during which period SNN will issue a Stress Test according to the requirements of the European Nuclear Safety Regulator Group "ENSERG" and will also acquire the additional equipments.

- The intermediate dry spent fuel storage, which is part of the company's spent fuel management policy. The storage location is situated on the Cernavoda NPP premises and the spent fuel will be transported on an internal route which allows for the maintenance of an integrated safety system. The storage will be developed in several stages and it is to finally include 27 storage modules, with a capacity of 12,000 bunches per module, that will provide the storage of the spent fuel for a 50 year period. So far, five modules have been built and the rest will be commissioned during the following stages.

- The heavy water detritiation station used to maintain the tritium concentration at a low level during the plant operation. The major impact of this investment consists of a high level of safety for the plant personnel and the environment.

- Other projects aimed at the refurbishment of the existing equipment and infrastructure, increased nuclear safety, human resources development and support for the local community, software for the integrated plant management, as well as the refurbishment and extension of the physical protection system.

The investment plan, including the major investments presented above is correlated with the

Company's objectives and takes into account the implementation and structural restrictions in an organic manner, starting from the identification of the types of development and investment needs specific to the nuclear field, as follows:

**Nuclear safety and authorizations**

In order to meet the specific needs of this field, the plan includes a series of investment projects aimed at meeting the legal requirements or conditions explicitly stated by the regulatory authorities. Out of the projects included in this category, the most important are the post Fukushima investments, included in PJ-11-006 (improving the response of CNE Cernavoda and the nuclear safety functions in case of events beyond desing basis, following the Fukushima nuclear accident (FKD) 1, Japan). The total cost of these investments amounts to approximately EUR 60 million, to be paid up to 2023. It should be stated that the development of this project represents a mandatory requirement which the Romanian State undertook to comply with before the European Union. Another major investment project that is part of the same category is PJ-04-001 (Refurbishment and extension of the Physical Protection System).

**Production - operation**

In order to meet the specific needs in this field, the plan includes a series of investment projects aimed at providing all essential facilities required for the development of the production activities. Out of the investment projects included in this category, the most important is that related to the management of spent fuel. To this purpose a Intermediate Dry Spent Fuel Storage (IDSFS) is to be constructed in several stages and a station for loading the spent fuel at Unit 2 (SICA U2) is also developed.

**Development - optimization**

In order to meet the specific needs in this field, the plan includes a series of investment projects aimed at increasing the operating income or the physical output, at reducing the specific technological consumption, possibly by modernisation, refurbishment and implementation of new systems or production capacities. The most important project in this category is the refurbishment of Unit 1 by re-tubing the reactor and refurbishing/replacing a number of systems and structures, with a view to extending the designed life cycle of the plant by another one (from 30 to 60 years). Both the (financial and human) resources necessary for the development of this project and the benefits of the same are major, the nature of the project requiring a number of preparation activities - technical reports, pre-feasibility study, feasibility study, nuclear safety tests, as well specific legal actions (in order to obtain the necessary endorsements, approvals, authorizations), at least 10 years before the period when the plant is planned to be closed for refurbishment purposes. Another major investment project included in this category is represented by the development of a detritiation system at Cernavoda NPP, whose completion will have positive economic effects by:

- Reducing the costs associated to the radiation safety equipment required on a current

basis (masks, filter cartridges, plastic suits etc);

- Reducing the technological durations of certain works, as well as the number of human resources required by eliminating/reducing the need to apply safety measures that require a lot of time;

- Obtaining a new strategic product (tritium) that can be sold on the international market, where the number of manufacturing companies is extremely low.

**Labor safety, work conditions and personnel protection**

In order to meet the specific needs of this field, the plan includes a series of investment projects aimed at improving and optimizing the work conditions, as well as at substantially reducing the risks taken by the company's personnel and by the public at large.

The need for, the opportunity, objectives and the stage of the major projects included in the plan for the period 2013-2016 and mentioned above are briefly described as follows:

**Intermediate Dry Spent Fuel Storage (IDSFS)**

Based on the international best practices, for the storage of spent fuel, a dry storage solution was chosen, which presupposes that the fuel is stored in monolithic concrete modules.

Given the high investment value, the modular nature of the objective, as well as the fact that the availability of the provisional storage capacity is required in several stages, the implementation of this project includes several stages, too, the estimated completion deadline being 2040.

Currently, Module 6 is under construction, while Module 7 (Macstor 200) is planned to be completed in 2014. Starting with Module 8, the type of modules is to be changed to Macstor 400 (improved project resulting in the increase of the storage capacity), Module 8 being planned to be built in 2015 and Module 9 in 2016.

The project is part of the investments whose completion, as indicated above, is a prerequisite so that Units 1 and 2 can become operational and, at the same time, it is a condition for the authorization/re-authorization of CNE Cernavoda.

**Installation of the tools and equipment used for the transfer of the spent fuel from the Spent Fuel Storage Tank (S2-126) at Unit 2 to the Intermediate Dry Spent Fuel Storage.**

The same conceptual solution implemented for Unit 1 was chosen for Unit 2.

The project will include equipment, tools and devices similar to those used for Unit 1 and, possibly, more technologically and functionally advanced. Also, the same solutions as those used for Unit 1 will be adopted for the systems (installations) of this objective.

Currently, the work has already been contracted and it is in progress according to the agreed

schedule, its completion deadline (including the PIF) being June 2014.

**Improving the response of CNE Cernavoda, including the improvement of nuclear safety functions in case of events beyond design basis following the nuclear accident at Fukushima 1 nuclear plant, Japan**

The purpose of this project is to analyze the nuclear safety margins in case of events beyond the design basis of the plant and to implement the necessary project changes in order to reduce the effects in case of severe accidents.

After the events occurred at the Japanese nuclear plant Fukushima, all nuclear plants in the world and their operators had to review the response of such plants in case of events beyond design basis considered initially.

Given Romania's status as Member State of the European Union, SNN, as operator of Cernavoda NPP has to comply with the community requirements (stress tests) in terms of additional measures to be taken in order to ensure the safe operation of the plant, as well as the safety of the population in the area.

The nature of this problem gives rise to the need to identify complex solutions, adequate for the various events outside the design parameters that may occur and for which optimum solutions need to be established.

The major objectives of this project are indicated below:

**Objective 1 - completed:**

The development of studies aimed at identifying the nuclear safety margins of Cernavoda NPP, studies consolidated in the form of a report (stress tests). Among the main elements to be identified in this report is a list of project amendments required in order to reduce as much as possible the impact that events outside the design parameters of the plant might have on the same.

**Objective 2 - completed**

- providing Mobile Diesel Generators on site, seized to exclusively supply power to those systems that are essential for nuclear safety;

- providing mobile pumps on site aimed at cooling the nuclear fuel in case the pumps included in the design become unavailable.

**Objective 3:**

Implementation of the following systems:

- A passive system for the hydrogen recombination in case of severe accidents (U1&U2) - completed

- A water addition system located in the Calandria vessel caisson (U1&U2) - completed

- The development of a HERMETIS hydrogen monitoring system to monitor the hydrogen level post-accident is currently in progress (for U1&U2), completion deadline - August 2013.

- The development of the emergency filtered ventilation system for the atmosphere of the reactor building (U1&U2) is in an advanced stage, completion deadline: February 2014.

- The compliance of the components of the temperature measurement loops in the input collectors (RIH) of U1/U2, of loops 1/2-63331-T27, 28, 29, 30/A, B, C and of the components of the water level measurement loops located in the Calandria vessel caisson with the standards applicable for sever accidents and earthquake events and providing indications in the Secondary Control Area (SCA) of U1 and U2, respectively shall be ensured in 2014.

- The development in U5 of the space and logistic systems required to perform the actions to be taken in case of severe accidents, namely:

✓ adequate storage space for the mobile equipment required in case of severe accidents;

✓ space required for the operation of the fire fighting and technical team;

✓ Emergency Control Center on Site (ECCS) (adequate in case of earthquakes and flood proof)

✓ area dedicated to the Physical Protection personnel

**Detritiation Installation (U1+U2)**

The implementation of this project is aimed at reducing the tritium concentration of the heavy water existing in the nuclear systems of the plant and consequently, at reducing the radioactive emissions in the surrounding environment and the collective exposure dose of the personnel.

Also, the selling of the tritium thus obtained is taken into account, as this is a strategic, expensive product, in which several potential clients are already interested (one of them is the future international fusion reactor developed at Cadarache- France). And last, but not least, this system will substantially reduce the costs incurred with the radiation safety equipment required on a current basis (masks, filter cartridges, plastic suits etc), the technological durations of certain works and the human resources required for the same by eliminating/reducing the need to apply safety measures that take a lot of time.

Currently, the following activities and services are already in progress: design activities, consultancy and technical support services, services required for the objective location and building, drafting the procurement documentation for the equipment that has a long production cycle, drafting the nuclear safety support documentation, obtaining the necessary endorsements, approvals and authorizations for the construction of the system. Both the contracting and the initiation of the construction works are scheduled for 2014; the works are to be carried out for a 5 year period, up to 2019.

**Refurbishment and extension of the physical protection system (PPS)**

In order to comply with the new legal provisions in force, as well as a result of the terrorist attacks of 11 September 2011 (USA), 11 March 2004 (Spain) and 07 July 2005 (England), CNCAN requested by order 85/2006 a thorough analysis of the performance of the physical protection system of Cernavoda NPP.

The analysis pointed out the need to refurbish and extend the physical protection system in order to increase the safety of the nuclear objective by:

- preventing any radiological sabotage and the theft of nuclear material;

- protecting the objectives on the NPP premises inside which activities are carried out that involve the management of confidential information, classified information and documents over which Cernavoda NPP has intellectual property rights;

- controlling the personnel and vehicle flow entering and exiting the radiological areas of NPP and any vital area;

- controlling the external area of the protected parameter, where radioactive sources are handled (SEIRU storage) or areas that may serve as access points to the protected area (e.g. the cooling water discharge system).

The purpose of this investment is to comply with the legal provisions applicable for the physical protection systems in force in the nuclear field, which require the refurbishment and extension of the physical protection system at Cernavoda NPP, both for the objectives located inside the protected parameter and for those situated outside such parameter and to implement the activities identified based on the study on how to maintain operational the critical installations of the vital structures in case of threats outside the design parameters.

After the nuclear accident occurring at Fukushima plant in Japan, a series of tests have been performed in order to check the nuclear installations in terms of the security margins available in the face of factors and threats outside the initial design parameters.

The Fukushima events were due to natural factors whose intensity exceeded the design parameters, but similar effects can result from malicious human actions exceeding the initial design parameters of the Physical Protection system.

As a result of the recommendations made by the regulating authorities, Cernavoda NPP ordered a "Study on maintaining operational the critical installations that are part of the vital structures in case of threats beyond design basis". The study was developed based on the stress tests carried out in order to assess the nuclear safety margins in case of severe events occurring on the plant site.

The study in case identified the threats and environment factors exceeding the initial design parameters and analyzed the time margins assured for an emergency response by the existing Physical Protection System.

The study also pointed out the measures required for the physical protection of the critical installations that are part of the vital structures of Cernavoda NPP, in order to allow for more intervention time in case of threats outside the identified design parameters.

According to the results of the study, the measures to be implemented comply with the CNCAN requirements (Physical protection standards in the nuclear field NPF-01, Guidelines on how to protect the nuclear installations in case of sabotage GPF-02), the legal provisions in the field and the recommendations of the International Atomic Energy Agency (INFCIRC 225 Rev. 5 - Nuclear Security Recommendations on Physical Protection of Nuclear Material and Nuclear Facilities).

The implementation of the changes required in order to maintain operational the critical installations that are part of the vital structures, in case of threats beyond design basis was approved to be developed in two stages during 20113-2016.

The following physical protection works are currently in progress:

- The completion of an security check point at the CFR gate - building + equipment;
- Refurbishment and supplementing the Physical Protection System for U1 and U2;
- Priority 1 works, stage 1, identified in the study on maintaining operational the critical installations that are part of the vital structures in case of threats beyond design basis.

During 2013-2016, both the physical protection works, priority level 1, stage 2 and priority level 2, as well as the physical protection works associated to the development of the turbine building at U5 will be carried out. The investment project is part of the projects whose implementation represents a prerequisite for the authorization/re-authorization of Cernavoda NPP.

2.4.2. Units 3 and 4

At the end of 2012, SNN owns a share of 84.65% with EnergoNuclear, alongside Enel (9.15%) and ArcelorMittal (6.2%), company set-up for the development of the project, construction, commissioning and operation of Units 3 and 4 in Cernavoda.

The main advantages of building Units 3 and 4 for potential investors and for Romania are mentioned below:

➢ The liberalization of the electricity market and the estimated increase of the energy consumption shall have a positive impact on the project;

➢ The production process is based on a high-performance technology, acknowledged at an international level, with high nuclear safety level, the operating costs are predictable, the variable costs and, in total, the operating costs are low, while the raw material sources are certain;

- The project is profitable given an internal rate of return (IRR) of 11.47% and a positive NPV as per the Feasibility Study carried out in 2012 by Ernst&Young;

- Creating new jobs for the completion of the project, estimating that the building and assembly activities shall generate up to 6,500 new jobs throughout the entire building process (6 years). In addition, new jobs will be created in the industry for producing construction machinery and materials consequent to the completion of the project;

- It allows the use of structures and assets already existing on the Cernavoda NPP platform;

- Reducing CO2 emissions and producing power at a low price compared to other renewable resources, which shall allow Romania to observe the requirements set by EU on reducing CO2 emissions and the use of the surplus of CO2 emissions certificates;

- Providing a demand of local goods and services;

- Increasing competitiveness of Romanian providers of goods and services that shall take part in the development of the project given the observance of the quality management requirements and of the requirements of the technical standards applicable to products used in nuclear power;

- Increasing attractiveness for investors and industries involved in performing the project (steel industry, auto industry, equipment and machinery), thus attracting new investors and investments including in the area of small and medium enterprises providing services in the region;

- Providing stable, sure and good-price electricity for the hydropower plant with accumulation through pumping in Tarnita-Lapustesti.

The characteristics and benefits of developing Units 3 and 4 in Cernavoda NPP match completely the main objective of Romania's Energy Strategy as well as the national interest, especially with respect to providing energy on a medium and long term, for affordable prices. This is specific to a modern market economy and to a decent living standard from the point of view of quality, food safety and last but not least to observing the principles of a sustainable progress.

### *Financial indicators and risks of the Project*

The SNN contribution to the project shall be mainly in-kind. The in-kind contribution, consisting in existing fixed assets, is subject to an independent assessment, prior to being transferred to EnergoNuclear. The value of the fixed assets of Units 3 and 4 was approximately 474.1 million Euros (265.3 million Euros for Unit 3 and 208.8 million Euros for Unit 4) as per the Report "Feasibility Study for Performing the Project for Units 3 and 4 in Cernavoda" drafted by Ernst&Young.

As per the hypothesis in the basic scenario presented in the Feasibility Study, the project shall be financed from the following sources:

Table 11: Basic scenario of the financing sources

| Investment cost | Amount (millions of Euros) |
|---|---|
| EPC contract | 5,070 |
| Other cash investments | 377 |
| Other investments not included in cash equivalent | 996 |
| Pre-financing account of the loans reserve | 281 |
| Pre-financing account of the maintenance reserve | 106 |
| Financing costs | 1,194 |
| **Total** | **8,024** |

Sources: Feasibility Study carried out by Ernst&Young

Note: (i) The increase of investment costs during the analyzed period amounted to 317 million Euros. Cash investment costs had an unpredictable increase of 2% starting with 2013.

Total investment costs for 1MW installed amount to 4.895 million Euros, while overnight costs amount to 4.231 million Euros. As per the OECD rapport "Estimated Costs for Electricity Production" (Ed. 2010), the overnight costs of the nuclear power plants vary significantly. Even after excluding the nuclear power plants of China and Korea, prices vary significantly from 2,407 EUR/kWe in Japan to 4,690/kWe in Switzerland, with an average of 3,713 EUR/kWe. The reference values used are those from 2010.

The results generated by the financial analysis of the date in the basic scenario are presented below:

Table 12: Results of the Feasibility Study – Basic Scenario

| Indicators | Value |
|---|---|
| The project's internal rate of return | 11.47% |
| The shareholders' internal rate of return | 11.31% |
| Debt Service Cover Ratio | 1.59 |

Source: Feasibility Study carried out by Ernst&Young

The financial modeling based on the hypotheses of the basic scenario indicates that the project is viable from a financial perspective: the net present value of the shareholders' investment in positive, the cash flow value is also positive, the shareholders' internal rate of return is higher than the estimate of the weighted average cost of the capital. However, the shareholders' internal rate of return amounting to 11.31% is smaller than the one demanded by the private investors for this project.

By using the hypothesis of the basic scenario, the project could not generate sufficient cash flow so as to be bankable: the DSCR indicator during the ECA loan reimbursement period is at 1.59, below the 1.7 value which, as per the financial consultant, is the market expectation for such projects.

Table 13: Levelised electricity costs

| Period | Levelised electricity cost (EUR/MWh) | Electricity average sale price (EUR/MWh) |
|---|---|---|
| First decade of operations | 65.97 | 82.7 |
| First decade of operations (including 15% ROE) | 119.66 | 82.7 |
| Entire operations period | 51.22 | 92.09 |
| Entire operations period (including 15% ROE) | 85.12 | 92.09 |

Source: Feasibility Study carried out by Ernst&Young

Throughout the entire operating period, the levelised electricity cost is smaller than the average market price in real terms (levelised electricity cost amounts to 51.22 EUR/MWh compared to the average market price of 92.09 EUR/MWh). Costs are estimated by dividing all present value cash-outs during the functioning period to the quantity of sold electricity.

This indicates that the project is in general stable from an economic point of view – electricity costs are smaller compared to the forecasted prices on the market. One must take into account that the in first decade of the operations, the return on equity (ROE) is lower than the one that private investor expect to reach, but still the project generates profit and pays dividends.

Compared to other electricity production projects, nuclear power plants require a material initial capital investment, require long term planning and are sensitive to a highly regulated environment. Three main risk categories affect the perceived risk profile of the investment and the economic viability of the nuclear power plant projects. These are:

- Regulatory risks, including the changes brought to standards and legal regulations
- Technical risks, including technological and construction risks, and
- Economic risks, including costs overrun, schedule delays and market risks.

***Necessary nuclear fuel for Units 3 and 4 in Cernavoda***

As per GD no.643/2008 and Annex no.13 in the Investors' Agreement, approved by GD no. 1565 dated November 25$^{th}$ 2008, the first load of nuclear fuel for Units 3 and 4 shall be provided by Romania, via SNN. Although, in theory, the CANDU 6 reactors may use several types of fuel at the same time, as per Annex no.13 mentioned above, for Units 3 and 4 one shall use the same type of $UO_2$ pellets also used by Units 1 and 2 in Cernavoda.

Units 1 and 2 use annually approximately 10,800 fuel capsules, whereas Units 3 and 4 shall increase the annual necessary fuel capsules up to almost 21,500 units. In order to provide the necessary nuclear fuel for Units 3 and 4, Pitesti NFP (Nuclear Fuel Plant) shall have to double its production capacity, plans which are still debated and which represent the object of the negotiations (as per the Investors' Agreement) for a long term supply contract between SNN and EnergoNuclear.

Pitesti NFP is currently functioning at full capacity and the subsequent expansion shall require investments of approximate 10 million Euros in order to double the production

capacity, as per the current estimates of the management. In view of determining the possibility to increase the capacity of Pitesti NFP, the company has contracted Cameco Fuel Manufacturing (CFM) which carried out a study on the economic and technical actions which would be necessary. According to this study, Pitesti NFP shall be capable of doubling its capacity.

***Stages carried out so far in relation to the EnergoNuclear Project***

During 2009-2012, the following steps were taken:

a) The European Commission has issued a favorable opinion on the completion of Units 3 and 4, which certifies the acceptance of the CANDU technology at a European level;

b) A detailed technical assessment of the civil constructions existing on the Cernavoda location was carried out which resulted into the fact that they can be used to continue Project 3 and 4, assessment carried out by AECL (currently CANDU Energy Inc. Canada), a Canadian company designer of the CANDU nuclear power plants, sole holder of the CANDU license;

c) The authorization requirements for Project 3 and 4 were established and the National Committee for the Control of Nuclear Activities has issued in May 2012 a comfort letter confirming that Project 3 and 4 is licensable;

d) The documentation necessary to obtain the environmental permit was finalized and a biodiversity study was drafted for the Cernavoda area, while the Technical Clearance Committee of the Ministry and Environment and Forests decided to issue the environmental agreement and has posted this decision on the ministry's website. On September 12$^{th}$ 2012, it was decided to issue the environmental permit;

e) The locations' Seismic Hazard Study was completed, checked and accepted by the experts of the International Atomic Energy Agency in Vienna;

f) In September 2012, the Project's feasibility study was completed, carried out by Ernst&Young in association with Candesco-Canada, having as subcontractor HB Global. The conclusion was that Project 3 and 4 is a long term solution for the supply of electricity in Romania, the investment costs being 6,450 billion Euros, not including the interest during construction and VAT and that Project 3 and 4 is profitable and competitive on the long term electricity market. Moreover, the feasibility study was endorsed by the Technical, Economic and Scientific Councils of EnergoNuclear and of the Company and it was endorsed by the Board of Directors of the two companies.

***Conclusions***

The Project for Units 3 and 4 is an investment opportunity for the Company which shall continue to be reviewed so as to determine the terms and conditions in which the Company shall be involved in this Project, including as regards both to Romania's Energy Strategy, the medium and long-term objectives of SNN and the financial and human resources necessary

for the participation to the Project and to the opportunity review compared to other major investment projects such as the CHEAP project Tarnita-Lapustesti.

2.4.3. Other investment opportunities – Tarnita-Lapustesti Project

As per Romania's Energy Strategy for the period 2007-2020, approved by GD no. 1069/2007, the Hydropower Plant with Accumulation through Pumping Tarnita Lapustesti (CHEAP Tarnita Lapustesti) is a key investment for the Romanian energy sector, meant to ensure the long-term viability of the electricity production process in the following stage (2020-2050).

For the development, performance and functioning of CHEAP Tarnita Lapustesti, a project company shall be created which shall be responsible for ensuring financing, construction, commissioning and exploitation of CHEAP Tarnita Lapustesti.

In order to increase the safety level of the National Electricity System under the circumstances of developing intermittent renewable energy sources, as well as the perspective of exploiting Units 3 and 4, SNN can become involved in this project, providing for the partial financing of the project as well as the common participation to operating the plant.

The main benefits of developing and operating CHEAP Tarnita-Lapustesti are as follows:

- Flexible operation of the plant and thus adapting production depending on the market needs
- Forecasted increase of the demand and of the prices for electricity, including after the full liberalization starting with 2018
- Significant increase of the demand for system technological services in view of major investments in the area of renewable energy (unpredictable generation sources)
- The production capacities used for the system services are obsolete, with low yield at national level, and require replacement/modernization.
- The energy obtained from hydro sources is non-polluting, without $CO_2$ emissions

The specific terms and conditions of the SNN involvement in the project shall be set and analyzed thoroughly in relation with the SNN objectives and available financial and human resources, but also with in relation with the SNN participation to the development and operation of Units 3 and 4.

## 2.5. Financing investments

The Company's financing sources include:

- Cash from the current exploitation activity (remaining after the allocation of dividends whose current level is 85% of the profit as per the regulations in force)

- In-kind contribution consisting in the current assets pertaining to Units 3 and 4, assessed at 474 million Euros as per the Assessment Report of Ernst&Young

- Listing on the stock exchange, through an estimated initial public offer of approximately 65 – 85 million Euros .As per GD no. 39/2012 completed by GD 380/2013, the Romanian Government has approved the privatization of SNN through an share capital increase by 11.077%, out of which 1.077% consists preemption rights granted to current private shareholder ("Fondul Proprietatea" ). The remaining 10% of the shares shall be sold on the stock exchange and the subscription price shall be between the range of 11.20 lei/share and 15.00 lei/share.

While taking into account additional financing sources, i.e. loans or bond issuance, an important matter with respect to the financial position of the Company consists in the fact that SNN has a low debt level (28% as at December 31st 2012, DSCR of approximate 2,4 in 2013), thus facilitating attracting new financing sources of the investment projects. The additional loans necessary to sustain other investment projects of the Company shall be supported from SNN's sale of electricity on the regulated market. One expects that financial institutions request long-term electricity sale contracts, contracts which are a stable source of income for reimbursing loans and pertaining interests. This will stand as security for the banks with respect to receiving the loan.

Apart from these measures, the Company shall also have to consider other factors, such as decreasing the dividend payout ratio and decreasing the sales percentage on the regulated market which is envisaged consequent to the publishing of Law 123/2012. These measures may influence significantly the internal financing sources.

With respect to the participation in building Units 3 and 4, there are two possible financing solutions:

➢ Financing can be attracted individually by the shareholders of the project company, who shall than contribute 100% with capital in EnergoNuclear. The SNN share shall consist, initially, in in-kind contributions amounting to 474 million Euros and own sources, than the use of external financing.

➢ On the other hand, the project company EnergoNuclear may obtain directly the necessary loans to build the two units. In this case, a 60:40 debt ratio was taken into account (long term loans/equity), in which every shareholder shall contribute with capital, SNN having the possibility to support participation including through in-kind contribution (assets pertaining to Units 3 and 4).

Although SNN shall be able to take out additional loans, the loans taken for EnergoNuclear shall have a material impact on the results of its operations. In addition, the financial institutions may ask for guarantees such as long-term electricity purchase contracts.

The recommendation that SNN received from RBS (Royal Bank of Scotland), the financial consultant for EnergoNuclear, was that loans to be taken individually by the investors until

commissioning Units 3 and 4 and that than be transferred to the Project Company until the completion of the operations.

### 2.6. Nuclear safety within SNN

SNN has drafted a nuclear safety policy approved by the National Committee for the Control of Nuclear Activities in Romanian (CNCAN) in order to preserve a high and constant level of nuclear safety in all the phases of the commissioning process and of the operation of nuclear installations. The nuclear safety policy provides guarantees for all important activities regarding nuclear safety, in all implementation and exploitation phases of the nuclear installations. This document confirms that nuclear safety is a top priority.

The high level of nuclear safety is provided through the manner in which nuclear installations are designed, built and operated. Nuclear safety includes all technical and administrative measures as well as actions taken in a nuclear power plant in order to protect the population and the environment against radioactive emissions.

The risk generated by the nuclear fuel in the reactors on the population and the environment is minimum due to the fact that:

- The power of the reactor is under control
- The fuel is cooled
- Radioactivity is contained, all of these being achieved constantly.

Consequent to the Fukushima accident, the European Commission and the European Nuclear Safety Regulators' Group decided that the nuclear safety of nuclear power plants in Europe be reviewed based on transparent and extended risk assessments, so-called "Stress Tests". The technical purpose of these stress tests was defined as taking into account the risks highlighted by the events which occurred in Fukushima. The focus was on the following issues: triggering events, such as earthquakes or floods, the consequences of losing safety functions within any triggering event and serious difficulties in managing accidents.

The Cernavoda NPP, along with AECL Canada and ANSALDO Italy have issued the "Report on Reviewing the Nuclear Safety Margin". The assessment made proves that Units 1 and 2 in Cernavoda NPP meet the nuclear safety requirements set in the project and that they can stand serious earthquakes and floods, as well as total loss of power supply and water supply for cooling.

In addition, methods and procedures were identified for managing possible serious accidents. Furthermore, one has identified manners of preventing and limiting the consequences of serious accidents which may lead to the melting of the active area.

The Operation Experience Feedback ("OEF") with Cernavoda NPP is provided by a team of full-time employees dealing with Units 1 and 2. Part of this team consists of CNCAN representatives. The internal events which must be reported are reviewed and CNCAN

carries out its own analysis, with the purpose to determine which events may have a special impact on safety.

Moreover, a large number of employees attend training courses both in the country and abroad, especially those organized by international bodies such as AIEA or WANO. At the same time, the Company is focusing on the continuous development of its employees, especially with respect to nuclear safety, risk management and quality assurance.

**Decommissioning**

As per GD no. 1080/2007, the Nuclear Agency and for Radioactive Waste (ANDR) is responsible for collecting the contributions paid by SNN for the decommissioning of the two units for their remaining lifespan. ANDR undertakes liability for managing the entire decommissioning process at the end of the lifespan of the two units and for storing the resulting waste.

During 2008-2012, SNN has paid annually the following contributions to ANDR:

- Contributions for decommissioning of each unit amounting to 0.6 EUR/MWh of produced electricity;
- Contributions for the final disposal of radioactive waste, amounting to 1.4 EUR/MWh of produced electricity.

## 2.7. Functioning permits and licenses

The company carries out its activity through the two branches based on the following main categories of private permits, special licenses and specific rights:

a) Location Permit no. 1/605/September 30th 1978, issued by the State Committee for Nuclear Energy;

b) Permits in the nuclear field issued by CNCAN;

c) Licenses issued by ANRE (Romanian Energy Regulatory Agency);

d) Other permits.

### (a) Location Permit no.1/605/September 30th 1978, issued by the State Committee for Nuclear Energy

The Location Permit was issued for setting in Cernavoda a nuclear power plant CANDU-PHW 4x660Mwe, consisting in four nuclear reactors. The Permit was issued as per Law no. 61/1974 and the Nuclear Safety Norms "Nuclear Reactors and Nuclear Power Plants" from 1975 and it stipulates the main technical characteristics of the nuclear power plant. According to the Location Permit, until the issue of the building permit the holder could have started those construction works which would not affect the nuclear safety of the installation,

the protection of the population and of the environment and the physical protection of the installation and of the nuclear power plant. Subsequently, consequent to the Company's request and to the initial safety review carried out, the State Committee for Nuclear Energy decided to change and expand the permit so as to also include the performance of an additional nuclear power plant, i.e. Unit 5.

**(b) Permits in the nuclear field issued by CNCAN**

As per art. 8 para. (1) in Law no. 111/1996, for the performance of activities and/or for the use of resources making the object of this law, the operators must acquire specific permits issued by CNCAN, with the observance of the authorization procedure specific to each type of activity or sources. The regulations deeds issued by CNCAN in favor of the Company are as follows:

i. Permits in the nuclear field pertaining to Cernavoda NPP Branch:

- The building permit for modules 5-7 of IDSFS.
- The building permits for Units 1 and 2.
- The permit for the quality management system in the nuclear field.
- Operation and maintenance permits. At the Cernavoda NPP Branch level, the company has obtained 3 operation and maintenance permits, as follows:

  i. permit no. SNN CNE Cernavoda U1 – 01/2010 for performing activities in the nuclear field for the operation and maintenance of the Cernavoda Nuclear Power Plant, Unit 1;

  ii. permit no. SNN CNE Cernavoda U2 – 02/2010 for performing activities in the nuclear field for the operation and maintenance of the Cernavoda Nuclear Power Plant, Unit 2;

  iii. permit no. SNN DICA – 01/2010 for performing activities in the nuclear field for the operation and maintenance of Modules 1, 2, 3 and 4 of the Intermediary Dry Spent Fuel Storage.

Permits for the operation and maintenance of Units 1 and 2 were issued provided that:

i. The total thermal power generated in any of the fuel bundles does not exceed 935 kWt;

ii. The total thermal power generated in any of the fuel bundle channels does not exceed 7,300 kWt under stable functioning;

iii. The total thermal power generated by the fuel in the reactor does not exceed 2,062 MWt computed for 12 hours or 2,071 MWt ad-hoc, under stable functioning.

- The company also holds for Cernavoda NPP:

- 8 permits for performing activities in the nuclear field
- A radiological safety permit for the product
- 5 notices for appointing the laboratories as certified dosimetric bodies and/or accredited test laboratories and/or notified calibration laboratories;
- 1 notice for appointing Cernavoda NPP as notified certification body for personnel
- 5 clearances for training courses on radioprotection organized by Cernavoda NPP.

ii. Control documents with the Company from CNCAN. Permits in the nuclear field pertaining to the Pitesti NFP branch:

- The permit for the Quality Management System in the nuclear field no. 12-043 issued as per art. 24 in Law no. 111/1996, for manufacturing activities in the nuclear field, for 2 years, starting with September 18th 2012 and until September 17th 2014;
- 9 permits for performing activities in the nuclear field:
  - permit for performing DN/20/2012 owning sources of ionizing radiation, nuclear raw matter, nuclear fuel, radioactive waste valid from January 31st 2012 until January 30th 2014;
  - permit DN/21/2011 for the use of closed sources of ionizing radiation, radiological installations, equipment and devices valid from January 31st 2012 until January 30th 2014;
  - permit DN/22/2012 for handling closed sources of radiation valid from January 31st 2012 until January 30th 2014;
  - permit DN/23/2012 for processing nuclear raw matter valid from January 31st 2012 until January 30th 2014;
  - permit DN/24/2012 for manufacturing nuclear fuel valid from January 31st 2012 until January 30th 2014;
  - permit DN/25/2012 for temporary storage of nuclear raw matter, nuclear fuel and radioactive waste valid from January 31st 2012 until January 30th 2014;
  - permit DN/26/2012 for supplying nuclear raw matter, fuel, waste valid from January 31st 2012 until January 30th 2014;
  - permit TF 10/2010 for transporting radioactive materials valid from April 14th 2010 until January 11th 2014;
  - permit PD/178/2011 for holding unpublished information valid from November 21st 2011 until November 20th 2016;
- As per the Appointing Certificate no. FCN ODA 04-2011, CNCAN has appointed the

own radioprotection and dosimetry laboratory within Pitesti NFP as Certified Dosimetric Body.

iii. Permit for the Quality Management System in the nuclear field for management activities. Permit no. SNN EX-01/2013 is issued for 2 years, starting with May 1st 2013, which stipulates that the authorizing unit is liable for determining and developing the quality management system.

iv. CNCNA Authorized Personnel. For the Cernavoda NPP Branch, the Company holds 12 CNCAN permits for the managing personnel and 2 CNCAN permits for the personnel with specific training. For the Pitesti NFP Branch, the Company has 18 CNCAN permits. The company has obtained authorizations for the persons responsible for determining, developing and monitoring the implementation of the activity management system issued by CNCAN as per the norms on authorizing quality management systems applied for building, operating and decommissioning nuclear installations.

**(c) Licenses issued by the Romanian National Energy Regulation Authority (ANRE)**

In accordance with the Regulation for the granting of licenses and authorizations in the electricity sector, approved by the Government Resolution no. 540/2004, the activities pertaining to electricity supply, electricity production and thermal energy production in cogeneration will be carried out on the basis of certain licenses issued by ANRE for this purpose. On the Report date, the Company held the following licenses issued by ANRE:

a) License no. 5/03rd of December 1999 for electricity production, granted to the Company based on the ANRE Resolution no. 80/03rd of December 1999;

b) License no. 244/26th of March 2001 for thermal energy production, granted to the Company based on the ANRE Resolution no. 341/26th of March 2001;

c) License no. 962/21st of October 2010 for electricity supply, granted to the Company based on the ANRE Resolution no. 2597/21st of October 2010.

The Company has fully complied, until the date of this Report, with the provisions of the conditions associated with the above mentioned licenses.

a) License no. 5/03rd of December 1999 concerns the authorizing of the Company for the purpose of carrying out activities pertaining to the production of electricity through the exploitation of the energetic facilities related to the electricity production units. The license became effective on the 03rd of December 1999 and is valid for 25 years. Based on the ANRE Resolution no. 1683/01st of November 2007, the license was amended in the sense that the installed capacity of the Company's energetic facilities increased from 706.5 MW to 1,413 MW and other conditions associated with the license were approved further to the putting into service of Unit no. 2 from Cernavodă.

The Company fulfilled its obligation to establish and maintain a financial guarantee whereby

it assured the permanent deployment of the electricity production activity, taking into consideration any damages that the Company may owe under the provisions of the concluded agreements, as well as all of the Company's payment obligations set forth in this paragraph. The amount of the guarantee will allow, in case any damages arise, the replacement or repair of the affected assets and the resuming of activity, and the value of the above mentioned guarantee will represent 1% from the value of the Company's share capital, but not less than 1.5% from the value of its annual turnover.

In addition to the above mentioned, the Company has the obligation to inform ANRE, 30 business days before, about its shareholders' intention to complete operations further to which the tangible assets intended for the electricity production activity are disposed of in any way or, in case the existing share capital is decreased, in one instalment or overall, by at least 25%.

Additionally, the Company has the obligation to inform ANRE within 10 business days about the amendment of its Articles of Incorporation, through the Company's dividing, merger, transformation, change of its object of activity, registered office or share capital and change of its General Manager.

The assignment, by the Company, in whole or in part, of its rights pertaining to the production of electricity, can be performed only based on the conclusion of an agreement, with the prior approval in writing from ANRE, and the assignor and the assignee will be held jointly liable for the obligations derived from the license for the production of electricity. It is important to point out that any assignment performed without the approval from ANRE will be deemed to be null and void. According to the adjoined conditions, the license for the production of electricity can be suspended by ANRE for a period of at least 30 business days, in any of the following situations:

(i) the Company fails to fulfil its legal obligations, or

(ii) the Company fails to comply with a condition identified as essential under the license and repeatedly violates one or several conditions, at least three times in a year during the validity period of the license and, every time, the engendered situation can be remedied by the Company, or

(iii) the general insolvency proceedings are started against the Company.

The license for the production of electricity may be withdrawn by ANRE in any of the cases listed below:

(i) when the Company is unable to fulfil the obligations stipulated by the legislation in force or by the conditions associated with the license, without having the ability to remedy the thus created situation, or

(ii) in the event that the Company goes bankrupt, or

(iii) the value of the Company's assets decreases, and ANRE ascertains that, further to

such decrease, the Company is no longer able to fulfil its obligations under the conditions associated with the license, or

(iv) the Company requests in writing the withdrawal of the license.

ANRE will inform the Company in writing, with at least 30 business days before, about the established date of suspension/withdrawal of the license, as well as about the reason underlying such measure, and the Company, within 15 business days from the reception of a communication, may transmit to ANRE an explanation concerning the aspects invoked by the latter in relation to the suspension/withdrawal of the license. Further to an analysis of the explanations and evidence submitted by the Company, ANRE will communicate its decision concerning the suspension/withdrawal of the license with at least 5 business days prior to the effective date thereof.

ANRE may initiate the amendment of the license or of the conditions associated with it as a consequence of the change of the circumstances existing on the grating date of the license (the legislative and regulatory framework, court orders) or of certain events which have a material effect on the electricity market. The proposed amendments will be communicated in writing to the Company, with 30 days before the entry thereof into effect, and upon the reception of the notification, the Company may confirm its possibility of complying with the new conditions, in which case it will receive a new license whose content will be modified or it will request the withdrawal of the license.

b) License no. 244/26th of March 2001 concerns the authorizing of the Company for the purpose of carrying out activities pertaining to the production of thermal energy through the exploitation of the energetic facilities related to the electricity and thermal energy production units consisting of two heat exchangers with a total thermal capacity of 40 Gcal/h and of 46.51 MW. The license became effective on the 26th of March 2001 and is valid for 25 years. Based on the ANRE Resolution no. 1684/01st of November 2007, the license was amended in the sense that the current conditions associated with the license were approved. The Company supplies thermal energy to the local thermal energy distribution company, SC Utilităţi Publice SA Cernavodă, as well as to end consumers from Cernavodă Locality – economic agents, social and cultural institutions.

c) License no. 962/21st of October 2010 for electricity supply concerns the authorizing of the Company for the purpose of carrying out activities pertaining to the supply of electricity to the retail electricity market and it became effective on the 26th of October 2010, being valid for 5 years. The Company may request to ANRE the extension of the license validity period up to the limit of the maximum duration set forth in the Regulation approved by the Government Resolution 540/2004 (i.e. 10 years).

The Company will establish and maintain the financial guarantees necessary for participating to the wholesale electricity market and to ensure the permanent deployment of the electricity supply activity to the retail electricity market, and the value of such guarantees will not be, at any moment, smaller than the aggregate amount of the funds necessary for the

performance, for 30 calendar days, of the ongoing agreements. For this purpose, the Company has established the bank letters of guarantee issued by BCR SA in favour of Transelectrica SA (Payment guarantee letter no. DGLC/310/3249/14th of May 2010, amended by addendum no. DGLC/30/3249/C/16th of May 2013 amounting to RON 4,045,912.67 and valid until the 16th of May 2014) and in favour of OPCOM (Payment guarantee letter no. G018552/820 amounting to a maximum of RON 12,177,792, valid until the 11th of February 2014 and the Letter of Guarantee no. 12/CD/3112/BB/18th of February 2013, amounting to RON 3,600,000, valid until the 30th of April 2013, issued by BRD in favour of OPCOM, extended until the 30th of October 2013 based on the addendum dated the 24th of April 2013).

The conditions associated with the supply license impose onto the Company the obligation to make sure that the cross-valorization between the activities authorized under the license and other activities from the electricity sector, carried out by the Company or by its affiliates, does not occur. The cross-valorization regards the valorization related to the resource transfers derived from the sales of certain categories of products or services of an enterprise for the purpose of supporting the activities of such enterprise in relation to a different category of products or to a different area. In addition to the above mentioned, the Company has the obligation to inform ANRE, 30 business days before, about its shareholders' intention to complete operations further to which the tangible assets intended for the electricity supply activity are disposed of in any way or, in case the existing share capital is decreased, in one instalment or overall, by at least 20%.

Moreover, the Company will inform ANRE about any share dealing between shareholders or with third parties with 30 business days prior to the date of completion of such dealing, in case the shares are not traded on the stock market. Further to the reception of the notifications mentioned in the previous paragraphs, ANRE will analyze whether through the respective modification, the Company still has the ability to fulfil its obligations and will transmit to the latter its permit in writing, within 20 business days. It is important to point out that the dealings carried out in the absence of a favourable permit from ANRE may lead to the suspension or to the withdrawal of the supply license.

Additionally, the Company has the obligation to inform ANRE within 10 business days about the amendment of its Articles of Incorporation, through the Company's dividing, merger, transformation, change of its object of activity, registered office or share capital and change of its General Manager. It is important to point out that the assignment, by the Company, in whole or in part, of its rights pertaining to the supply of electricity, can be performed only based on the conclusion of an agreement, with the prior approval in writing from ANRE, and the assignor and the assignee will be held jointly liable for the obligations derived from the supply license. Also, any assignment performed without the approval from ANRE will be deemed to be null and void.

According to the adjoined conditions, the supply license can be suspended by ANRE for a period of at least 30 business days, in any of the situations presented in relation to the license for the production of electricity.

ANRE will inform the Company in writing, with at least 30 business days before, about the established date of suspension/withdrawal of the license, as well as about the reason underlying such measure, and the Company, within 15 business days from the reception of the communication, may transmit to ANRE an explanation concerning the aspects invoked by the latter in relation to the suspension/withdrawal of the license. Further to an analysis of the explanations and evidence submitted by the Company, ANRE will communicate its decision concerning the suspension/withdrawal of the license with at least 5 business days prior to the effective date thereof.

ANRE may initiate the amendment of the license or of the conditions associated with it as a consequence of the change of the circumstances existing on the grating date of the license (the legislative and regulatory framework, court orders) or of certain events which have a material effect on the electricity market. The proposed amendments will be communicated in writing to the Company, with 30 days before the entry thereof into effect, and upon the reception of the notification, the Company may confirm its possibility of complying with the new conditions, in which case it will receive a new license whose content will be modified or it will request the withdrawal of the license.

**(d) Other authorizations**

a) ISCIR regulatory documents;

b) Declarations to the National Anti-Drug Agency;

c) Licenses issued by ANCOM. CNE Cernavodă obtained from the National Authority for Management and Regulation in Communications of Romania (ANCOM) 3 licenses for the use of radio electric frequencies:

- The license for the use of radio electric frequencies for the supply of electronic communication networks for private use in the terrestrial mobile service no. MT-PMR/B260.1/2005, accompanied by the Frequency Assignation Authorization no. B/1447/1997 and the Frequency Assignation Authorization no. B/1448/1997, in force until the 15th of September 2017;

- The license for the use of radio electric frequencies for the supply of electronic communication networks for private use in the terrestrial mobile service no. MT-PMR/B261.1/2005, issued by the National Authority for Regulation in Communications and Information Technology, accompanied by the Frequency Assignation Authorization no. B/1449/1997, by the Frequency Assignation Authorization no. B/1451/1997 and the Frequency Assignation Authorization no. B/1452/1997, in force until the 15th of September 2017;

- The license for the use of radio electric frequencies for the supply of electronic communication networks for private use in the terrestrial mobile service no. MT-PMR 0320/2011, issued by the National Authority for Management and Regulation in Communications of Romania, accompanied by the Frequency Assignation

Authorization no. B/0130/2011, until the 13th of June 2016.

d) Fire protection authorizations;

e) Sanitary authorizations – wherefrom 6 authorizations related to CNE Cernavodă and 2 sanitary authorizations and one sanitary permit related to FCN Piteşti.

## 2.8. Corporate social responsibility (CSR)

SNN has a long term reputation regarding CSR development programs, which have generated a real impact in relation to the community and to the employees of the nuclear power plant. As far back as 1991, through the Government Resolution 454/1991, the "Social Emergency Program for the improvement of the life conditions for Cernavodă and for the engineering and operational staff of the power plant" was approved, being financed from budgetary allocations. Afterwards, an annex to the Government Resolution 1081/2003 regarding the social and cultural projects to be developed for the Cernavodă community was approved.

An example concerning a project developed for the Cernavodă Town community, which is currently under development, is represented by the "Training and Entertainment Centre for Youngsters and Children".

Among the main projects which the Company has financed and which have contributed to the development of the Cernavodă community and to the improvement of the life standard in relation to the SNN employees, the following can be mentioned:

- The kindergarten completed in 1992 and referred for administration to the Local Council of Cernavodă;
- The water treatment and pumping station for the supply of the Cernavodă Town with potable water from the Danube (through the Danube – Black Sea artificial canal);
- The development of the road infrastructure, project developed until 1998;
- The development, modernization and extension of the district heating system. SNN built a connection between the old and the new district heating points existing in the Town and between the power plants, with the help of a thermal steam transfer system;
- In 2002, the Company inaugurated a bridge over the Danube – Black Sea Canal, designated for facilitating the railway and road transport from the Cernavodă Town to the national railways and highways, being also used as an evacuation point for the Town population in the event of an accident which may occur at the nuclear power plant;
- The Company contributed to the development of the community's educational system, through the construction of the Power Systems Technical High School, which was equipped with all the necessary equipment;
- The construction of a hospital and of a clinic providing health care services to the

population and to the employees of SNN.

## 2.9. Real estate

The company currently owns as part of its assets a number of 32 plots of land with a total area of 1,004,787 square meters ("sqm") and approximately 300 buildings.

### *Land and buildings*

The company acquired rights over the plots of land recorded in the accounting documents mainly by four methods: (a) by obtaining certificates of ownership according to Law 15/1990, (b) by purchases of land from third parties, (c) by concluding exchange contracts and (d) by concluding a delivery-reception protocol.

SNN owns land and buildings: (a) in ownership; and (b) in use, under bailment contracts, lease contracts and under a joint venture contract.

**Land owned by SNN under certificates of ownership**

According to the procedures provided by Law no. 15/1990 corroborated with the provisions of the Government Resolution no. 834/1991, SNN obtained 12 certificates of ownership for a total area of land of 899,877.32 sqm, starting with the year 1999 and until 2005. According to Law no. 15/1990 and the Government Resolution no. 834/1991, the certificates of ownership over the plots of land were issued to companies holding an administrative right over the given land. As regards the Company's administrative right over the plots of land it was using, we should mention that the current form of organization of the Company dates from the year 1998, when, following the Government Resolution no. 365/1998, the National Electricity Company "Renel" is reorganized and its assets are distributed to three new entities, the Company being one of them. In the absence of documents supporting the issuance of urban planning certificates, we may presume that, similarly to all State companies reorganized as joint-stock companies under Law 15/1990, Renel received the given land under administration based upon various documents issued by the State public structures, and the administrative right over the buildings thus acquired was subsequently transferred to the Company, at the moment of reorganization.

One of the 12 (twelve) plots of land owned by the Company under the certificates of ownership is the land with an area of 723,050.81 sqm, on which the units of the CNE Cernavoda 5x700 MW nuclear power plant in Cernavoda are situated.

At present, the Company is undergoing the procedure for obtaining the certificate of ownership for the land with an area of 239.05 sqm (undivided share) related to the 5$^{th}$ and 6$^{th}$ floors of the building situated in Bucharest, Bd. Gheorghe Magheru nr. 33, for which there is no risk of eviction.

It was not possible to establish precisely whether the related share capital increase was made in relation to all these plots of land, since 3 out of the 4 (four) resolutions adopted by the Company's General Meeting of Shareholders for approving the share capital increase after

the certificates of ownership over land were obtained do not identify and do not individualise the land to which the resolutions refer and for which the share capital increase was made, the wording being generic. Nevertheless, it results that the value related to a number of 11 (eleven) plots of land was included into the Company's share capital, while the value of one piece of land was not included. According to the Government Resolution no. 834/1991, the entities for which certificates of ownership were issued are required to increase their share capital with the value of land for which such certificates are issued. As regards the privatized companies, according to the provisions of Law no. 137/2002, in case the issuance of certificates of ownership over land was not followed, prior privatization, by the corresponding share capital increase or in case the certificate of ownership is issued after privatization, the share capital shall be increased by law with the value of the land, which shall be considered a contribution in kind made by the State. We mention that the Company's shareholders approved the increase of its share capital with the value of the land, and not with a contribution in kind to the share capital, consisting of the given land, but with a share capital increase in cash. The structure of the Company's share capital does not include (and has never included) contributions in kind as well, but only contributions in cash, therefore all share capital increases made until present have been in cash. Thus, the land under discussion is registered in the Company's equity (and not share capital).

**Land owned by SNN under sales contracts**

The company acquired 18 (eighteen) plots of land with a total area of approximately 69,346.86 sqm and, in some cases, the buildings erected on such plots of land under 17 sales contracts concluded by the Company with third parties, in authentic form. Out of the above-mentioned 18 pieces of land, 9 pieces of land were purchased from natural persons and companies, while 9 pieces of land from local councils. The Company does not possess the documents supporting the necessary auction procedure, the local council decisions approving the conclusion by the public authority of the sales contracts with the Company, documents showing the way in which the land subject to the sales contracts came under the private ownership of the local council/town hall or information regarding the legislation exempting from such procedure, given that these documents are issued by the local public authorities.

**Land owned by SNN under exchange contracts**

The Company acquired ownership over 2 (two) pieces of land with a total area of 35,563.62 sqm by 2 (two) exchange contracts concluded with the Local Council of Cernavoda town. The Company does not possess the documents supporting the necessary auction procedure, the local council decisions approving the conclusion by the public authority of the exchange contracts with the Company (only in relation to the exchange contract concluded for "Campus 1 Extension Land", a premises situated in Constanta county, Cernavoda, strada Energiei nr. 28 (Campus 1 extension) made of urban land with an area of 1,393.62 sqm), documents showing the way in which the land subject to the exchange contracts came under the private ownership of the local council or information regarding the legislation exempting from such procedure, given that these documents are issued by the local public authorities.

**Land owned by SNN under delivery-reception protocols**

In 2000, the Company concluded a delivery-reception protocol with Compania Nationala de Electricitate S.A. ("Conel"), under which Conel delivered to the Company the 5th and 6th floors of the building situated in Bucharest, Bd. Gheorghe Magheru nr. 33 and a share representing 14.87% of the undivided share related to the goods that are accessory to the building. The Company is in the process of obtaining the certificate of ownership over this land, and the related documents have already been approved by the Bucharest City Hall and shall be urgently submitted to the relevant ministry for issuance of the certificate of ownership. In case the relevant ministry refuses to issue the certificate of ownership due to the fact that the transfer of the right of ownership does not result from the Delivery-Reception Protocol, the Company shall have available: (i) a declaratory action, requesting the relevant court to issue a judgment finding the Company's right of ownership over the given land, provided the Company considers and can prove that the right of ownership was transferred to it through the protocol or (ii) a declaratory action finding the Company's administrative right, provided the Company considers and can prove that the administrative right over the given land was transferred through the protocol.

Land Registration

Land registration is made for the purpose of enforceability against third parties.[1]

Out of the total 32 pieces of land in the Company's ownership, 31 were registered in the land registry. Thus, 11 pieces of land, out of the 12 for which certificates of ownership have been obtained, were registered in the Land Registry, together with 20 other pieces of land obtained under other titles (i.e. sales contracts and exchange contracts), and only the Company's right of ownership over the land related to FCN Mioveni was not registered in the land registry.

According to applicable laws, the registration in the land registry of the ownership rights of SNN is necessary in order to ensure enforceability of the acquired rights of ownership against third parties.

Title over buildings

The Company owns approximately 300 buildings. It can be considered that the Company holds a valid right of ownership over these buildings since:

- The buildings in question were erected on the land in the ownership of the Company/its predecessor (Renel), thus leading to the relative assumption established by the principle of accession to property provided by art. 488 and 492 of the Civil Code of 1864 (the relevant law in force at the moment when the buildings were erected), according to which the owner of the land also becomes the owner of the buildings erected on its land (superficies

[1] Although, according to the New Civil Code, registrations in the Land Registry are a substitute for title, until completion of cadastral works for each territorial unit, registrations must be made only for the purpose of acknowledgment by third parties, just like until the entry into force of the New Civil Code.

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- They were registered in the relevant land registry on the Company's name, thus attesting to third parties the right of ownership both over the land, and over the buildings, and

- Since registration in the land registry was made, it could be assumed that all legal formalities required for the execution, completion and reception of works related to the buildings in question were made in compliance with the legal provisions.

***Title over Units 1 and 2 of the nuclear power plant and the land on which they are located***

The Company holds the right of ownership over the land with a total area of 723,050.81 sqm on which the facility CNE Cernavoda 5x700 MW is situated under the certificate of ownership series M03 no. 5415/01.01.2000, also holding the right of ownership over a number of "995 buildings" with a total built area on the ground of 290,725.59 sqm, situated on the land. In order to be able to confirm the Company's ownership over Units no. 1 and 2, its existence can be supported first of all by the fact that it is known that the Company owns and operates 2 (two) nuclear power units situated in Cernavoda and, as regards Unit no. 1, the final acceptance protocol no. 7283/31.08.1999 is mentioned in the land registry excerpt, which leads to the conclusion that all legal formalities required for the execution, completion and reception of construction works related to the buildings in question (related to Unit no. 1) were legally fulfilled. As regards Unit no. 2, according to the protocol of final acceptance of CNE Cernavoda Unit 2 construction works, all legal formalities required for the execution, completion and reception of construction works related to the Unit 2 buildings were legally fulfilled. Consequently, it can be assumed that the Company holds title over the buildings related to Units 1 and 2 of the nuclear power plant.

***Title over the Nuclear Fuel Plant in Mioveni***

The Company acquired ownership over the land with an area of 23,273.40 sqm situated in Romania, Arges county, Mioveni town, strada Campului nr. 1 under the certificate of ownership series M03 no. 7488/18.07.2002. A part of the buildings related to the nuclear fuel plant were acquired by the Company under a delivery-reception protocol concluded between the Nuclear Research Institute and FCN Pitesti, while the rest of the buildings were acquired by construction. Moreover, the existence of a right of ownership over the given buildings can be supported by the fact that, since the buildings were erected on the land for which the Company holds a certificate of ownership, it can be relatively assumed that the Company holds a right of ownership over the given buildings, according to the principle of accession. Although this is a relative assumption, which could be rebutted by contrary proof in case it is proved, by a person justifying an interest, that, in fact, the Company is not the owner of the mentioned buildings, the risk of filing such an action appears to be quite low, since the burden of proof in such a situation proves to be very difficult, considering that the person in question is required to prove that the registrations in the land registry were made

without complying with the legal provisions in force, based upon documents that could not be considered titles at that moment.

***Leased property***

The Company, through the CNE Cernavoda Branch, has in progress two lease contracts for land and premises with economic destination from Conpet SA Ploiesti and Dobroport SA. Under the lease contract no. 451/03.08.2009 concluded with Conpet SA Ploiesti, valid for a period of seven years from the signing date, the Company acquired the right of use over a land with an area of 36 sqm situated in Mircea Voda station, Constanta county, in return for a rent of 180 EUR/month. Under the lease contract no. 25946/02.08.2012 concluded with Dobroport SA and valid for 12 months from the delivery date of the premises, the Company acquired the right of use over the storage premises with an area of 3960 sqm, situated in Cernavoda port, in return for a rent of 26,316 LEI/month.

The Company, on behalf of the CNE Cernavoda Branch, currently has in progress 12 lease contracts concluded with 10 legal entities (including one contract concluded with EnergoNuclear, valid until 30.06.2013, regarding premises with an area of 70.05 sqm situated in the former commissioning building, for the location of offices), one natural person and two institutions, by which it provided them for use either with land situated on the CNE Cernavoda platform, or with various premises situated in Cernavoda and Constanta.

***Properties in use by the Company under other contracts than lease contracts***

The CNE Cernavoda Branch, authorized by the Company, has in progress two bailment contracts, by which, as bailee, it provided the right of use free of charge over two premises situated in Cernavoda. Thus, under the bailment contract no. 3187/13.05.2009 concluded with Constanta Environmental Protection Authority, valid until 31.03.2014, it provided the latter with the right of use over some premises for the location of public relations offices, while under the bailment contract 134/24.03.2011 concluded with the Cernavoda Town Hall and valid until the issue date of the regulation on the transfer of the premises, the latter acquired the right of use over a building for accommodating pupils and teachers from outside the town.

Also, the Company acquired the right of use over the land privately owned by the Constanta City, with an area of 714 sqm, situated in Constanta, Str. Bucovinei nr. 1E, bloc FE5, under the joint venture contract 11761/11.06.2003, with a validity period of 15 years, concluded for financing the works to the exterior of FE5 apartment building and the provision of maintenance and security by the Company.

***Major charges established on immovable property***

No major charges have been established on the immovable property of SNN, including privileges, interdictions, mortgages, significant limitations of the right of ownership, the right of use, their free transfer and no legal actions, litigations or arbitration proceedings or administrative or government proceedings are in progress, other than: (i) the litigation in the

file 14951/118/2011 pending with the Medgidia Court, by which the Company, versus SC CNE SA AND SC Car Construct SRL, requests the release of the land owned by the Company, currently suspended, (ii) the litigation in the file 1275/118/2012 pending with the Medgidia Court, regarding a plot of land and 800 apartments, initiated by the Company versus Cernavoda Town and the Mayor of Cernavoda Town. The file was assigned to another panel following dissolution of the panel, (iii) the litigation in the file 1445/118/2012 pending with the Constanta Court, regarding a protocol for "hot water drain" channel adjacency, in which the court admitted the action partially and ordered Cernavoda Town, Seimeni Commune, Constanta County Council to sign the adjacency protocol, an appeal being filed subsequently, (iv) the litigation in the file 10673/118/2010 pending with the Constanta Court, by which Sava Marian, versus the Company, requests the evacuation of the land related to the conduct for the transport of thermal energy located in Unirii street, currently pending and (v) the litigation in the file 3657/256/2013, pending with the Medgidia Court, by which the Company, through CNE Cernavoda, filed an action for the recovery of Section T1 Cernavoda, an application filed for the release of Section T1, versus Tudose Alexandru, Pelin Gabriel, Laudatu Ioana. The action became pending on 08.05.2013 and a new hearing is about to be set.

## 2.10. Electric Power Contracts

As part of its activity, the Company concludes electric power specific contracts, the terms and conditions of which are fully or partially regulated. Such contracts include:

(i) regulated contracts concluded for electric power supply;

(ii) sale contracts to purchase power from the Centralized Market of Bilateral Contracts ("**PCCB**");

(iii) heat power sales contracts;

(iv) negotiated heat power sales contracts.

### 2.10.1. Electric Power Supply Contracts

During its activity of electric power generation, the Company concluded sales contracts with suppliers indicated by ANRE, in order to supply the captive consumers of those suppliers with the hourly electric power quantities defined in accordance with ANRE regulations.

The terms of the contracts mentioned above were defined in accordance with the frame contract for electricity sale, concluded by the electricity suppliers and the suppliers to captive consumers, approved by ANRE Order No. 22/2005.

The Company concluded contracts with distribution operators, in order to cover the internal technological consumption in the distribution grid operated by the distribution operators, by buying the hourly electric power quantities indicated in the specific regulations issued by ANRE.

The provisions of the contracts concluded with the distribution operators were agreed in accordance with the provisions of the frame contract for electric power sale, such as to cover the internal technological consumption of the distribution grids, concluded by the electric power producers and distribution operators, approved by ANRE Order No. 23/2005.

The Company has the obligation to include in the regulated contracts specific to the electric power sector ten prices periodically approved by ANRE.

2.10.2. Electric Power Sales Contracts on the PCCB Market

The company concluded contracts having as scope the sale of certain hourly quantities of electric power.

Moreover, the Company concluded electricity sale contracts on the PCCB market for power supply from partners in case of unplanned outages. According to those contracts, the Company delivers electricity when the units of Cernavoda NPP are operating, while the partner delivers power in case of unplanned outages. Such back-up contracts are intended to manage the risk of unplanned outages at Cernavoda NPP, thus avoiding the purchase of electricity at high prices from the "Day-Ahead Market".

The Company can enter trades on the Centralized Electric Power Market for the day ahead, under the agreement concluded with the "OPCOM" S.A. Electric Power Market Operator on 16.06.2008.

2.10.3. Negotiated Power Sale Contracts

The Company concluded a contract with Transelectrica S.A., under which the Company sales and Transelectrica S.A. purchases the electric power required for the ancillary systems of the 400 kV Cernavoda substation. The contract is valid until the date of 31.12.2014, the parties considering the continuous extension of its duration, since it makes up the solution to supply the Transelectrica substation next to Cernavoda NPP.

2.10.4. Agreement on Participation on the Balancing Market and Agreement on Undertaking Responsibility for Balancing

The Company is a participant both on the balancing market and also a Party Responsible with Balancing, in accordance with the Standard Agreement concluded on 01.07.2005 with the system and grid operator, Transelectrica S.A., having as scope the sale and purchase of electric power by the parties as a result of the generation/consumption unbalances occurred in the Company and compensated by Transelectrica S.A. on the balancing market, in accordance with the applicable laws.

2.10.5. Agreement on Participation on the Green Certificates market

The Company is entitled to participate both on the Green Certificates Market and the Green Certificate Bilateral Contracts Market, under the Agreement of Participation on the Green Certificate Market, concluded on 22.11.2010 for a non-defined period, by the Company, as

participant, by OPCOM, Green Certificate Market Manager and Transelectrica, as transfer and grid operator. In order to achieve the mandatory quantity of purchased green certificates for the years 2011-2012, the Company concluded 4 contracts of green certificate sale.

It is important to mention that the obligation to purchase green certificates depends on the quantity of electric power supplied by the Company to its final users. Considering that the Company has concluded only one electric power supply contract with a final user (the contract concluded with Transelectrica S.A. for about 1000 MWh per year, mentioned at point 1.5.4 above), the number of green certificates to be purchased is low.

### 2.11. Employees

The Company had a number of 2,168 employees in December 2012, 9 of which were employed with limited service and 2.159 were unlimited service employees. The detailed information regarding the personnel line-up are given in the table below.

Table 14: Information on Personnel Line-up

| No. | Personnel line-up | Employee no. at Cernavoda | Employee no. at Pitesti | Employee no. at Bucharest | Total |
|---|---|---|---|---|---|
| 1 | ***Total*** | ***1637*** | ***418*** | ***113*** | ***2168*** |
| 2 | Individual labour contract of unlimited period | 1631 | 418 | 110 | 2159 |
| 3 | Individual labour contract of limited period | 6 | 0 | 3 | 9 |
| 4 | Part time individual labour contract | 2 | 0 | 0 | 2 |
| 5 | Full rate individual labour contract | 1635 | 418 | 113 | 2166 |
| 6 | Open jobs | 62 | 7 | 0 | 69 |
| 7 | Special labour conditions | 605 | 322 | 0 | 927 |
| 8 | Extraordinary labour conditions | 958 | 96 | 0 | 1054 |

The table below shows the Company employees by type of job and geographic location.

Table 15: Company employees number by main activity types and geographic location

| No. | Activity | Employees number [*Total/management jobs/operative jobs*] | | |
|---|---|---|---|---|
| | | Cernavoda | Pitesti | Head Office |
| 1 | Production (CNE and FCN Pitesti operation) | 291/4/287 | 149/4/146 | |
| 2 | Repairs | 487/28/459 | | |
| 3 | Technical | 204/18/186 | 68/5/63 | 8/1/7 |
| 4 | SM and PSI radiological protection | 77/6/71 | 14/2/12 | |
| 5 | Personnel training and authorization | 79/6/73 | 2/0/2 | |
| 6 | Nuclear safety | 56/4/52 | | 6/1/5 |
| 7 | Investments | 42/4/38 | 8/1/7 | 7/1/6 |
| 8 | Quality management | 19/4/15 | 86/8/78 | 4/1/3 |
| 9 | IT | 23/3/20 | 6/1/5 | 6/1/5 |
| 10 | Financial | 172/15/157 | 37/4/33 | 49/8/41 |
| 11 | Administration, transport, lodging | 107/7/100 | 14/1/13 | 13/2/11 |
| 12 | Legal counselling | 2/0/2 | 1/0/1 | 2/0/2 |
| 13 | Physical protection, classified information | 71/4/67 | 17/1/16 | 2/1/1 |
| 14 | SSM and emergency situations | | 16/1/15 | |
| 15 | Works control | 58/4/54 | | |
| 16 | Human resources | 10/1/9 | 6/1/5 | 6/1/5 |
| 17 | Domestic and international cooperation | | | 6/1/5 |
| 18 | Internal financial control | 1/0/1 | 1/0/1 | 2/0/2 |
| 19 | Internal audit | | | 2/1/1 |
| 20 | Operation | 3/2/1 | 1/1/0 | |

The rights and obligations of the employees are defined in the collective labour contract, in the individual labour contracts and the internal regulations.

**Individual Labour Contract**

Currently, the Company uses a standard type of individual labour contract, implemented

under the Collective Labour Contract no. 6940/15.12.2008, concluded in the Company ("CCM Nuclearelectrica"). The Company uses the same type of model for the individual labour contracts, both for the limited service employees and for those with unli8mited service period.

The standard individual labour contracts mentioned above are compliant with the provisions of the Order No. 64/2003 concerning the frame individual labour contract, as further amended ("Order 64/2003").

**CCM Nuclearelectrica**

The CCM Nuclearelectrica collective labour contract was concluded further to the negotiations conducted by the Company, on one side, and (i) the Centrala Nuclearelectrica Cernavoda Labour Union (SCNE), (ii) the Univers National Electric Power Trade Union Federation on behalf of Energetica Nucleara 90 Cernavoda Free Trade Union (SLEN 90) and Centrala Nuclearelectrica – INVEST Cernavoda Trade Union, (iii) Fabricatie Combustibil Nuclear Pitesti Trade Union (SFCN) and (iv) Operatom Cernavoda Trade Union, on the other side.

The CCM Nuclearelectrica collective labour contract is valid during the period 1.07.2013 – 30.06.2015.

The provisions of CCM Nuclearelectrica are compliant in principle with the applicable laws. Nevertheless, in accordance with the Labour Law, an assessment of the way the performance targets are reached is a first step in discriminating the employees in case of collective layoffs, the criteria defined in the collective labour contract being only applied afterwards. Due to this approach, the CCM Nuclearelectrica collective labour contract will be modified by eliminating the criteria according to which staff reduction concerns mainly the persons in jobs subject to restructuring and who solicited to be laid off, as well as the implementation of the criterion concerning the persons who cumulate retirement and active wages, after assessing the performance criteria.

Moreover, the Company will grant the employees with part time employment contracts an annual leave similar to that of the full time employees, in proportion with the activity conducted during one calendar year. To make things more clear, the CCM Nuclearelectrica will be modified by eliminating the provision stating that the employees with part time individual labour contracts will benefit of an annual leave in proportion with the time actually worked during the calendar year. We foresee the modification of CCM Nuclearelectrica to be done as above when the contract is renegotiated.

According to CCM Nuclearelectrica, the employees benefit of a lay off aid when the labour contract is terminated, granted by the will of the enterprise, for layoffs which are not imputable to the employee, and amounting to 3 to 8 wages of that employee (including the basic wage, the seniority increment and the fidelity increment), depending on the seniority of the employee.

**Professional Assessment of Employees**

The Company makes the professional, assessment of its employees under an internal procedure, i.e. "Assessment of Personnel Activity, of October 2008" ("Procedure"), made known to the employees by posting on the Company's intranet page.

According to the Procedure, the Company personnel is assessed annually or periodically, at 3 to 6 months periods for the personnel under monitoring. The assessment is performed by using standard assessment forms for management and operative personnel, the forms including also the applicable assessment criteria.

The general levels of assessment for personnel performance are: "unacceptable", "tolerable", "good" and "superior".

The provisions of the Procedure are compliant in principle with the applicable laws. In order to obtain a full compliance with the legal provisions, the Company eliminated from the Procedure the provision on the progressive disciplinary action of the assessor. Moreover, in order to provide more certainty, the general assessment of "unacceptable" was eliminated in what concerns the employees repeatedly committing serious and imputable disciplinary deviations, as the target of the Procedure is to make a professional assessment of the employees and the level "unacceptable" is given further to a professional assessment.

**Internal Regulations**

The Internal Regulations applicable in the Company since February 1st 2013 includes all the categories of provisions of the Labour Law. The Company will also take the necessary steps to include the hygiene, health protection and labour safety measures for pregnant employees and/or employees in motherhood, in childbed or lactating employees, as defined in the Government Emergency Ordinance no. 96/2003, concerning maternity protection at the workplace.

The internal regulation was communicated to the employees through the Company's intranet page and has full effect on the employees since the date of communication. It is also intended to edit the Internal Regulations as a leaflet.

The Company has not applied collective layoffs since its establishment, nor has it known labour conflicts. Moreover, the Company representatives confirm there are currently no plans of personnel restructuring/diminishing.

On the other hand, the Company was involved in 5 disputes at the date of 03.06.2013, having as object various real estate claims.

**2.12. Litigations in which the Company is involved**

*Litigations in which the Company is the defendant*

The Company was part on the date of 03.06.2013 or was part during the last 12 months, as defendant, in a total number of 14 litigations of which 7 litigations with a value above the

equivalent amount of RON 50,000 and a number of 7 litigations for which the value was not yet determined or having an object which cannot be evaluated in money, as follows:

*Corporate litigations*

- The file no. 58522/3/2010, on the dockets of Bucharest Tribunal by which Fondul Proprietatea requested the certification of absolute nullity of the decision of the General Extraordinary Meeting of Shareholders of S.C. Hidroelectrica S.A. no. 32/19.11.2010 of the decision of the General Decision of Shareholders no. 12/19.11.2010 of S.C. Complexul Energetic Rovinari S.A. and of the decision of the General Meeting of Shareholders no. 10/19.11.2010 of S.C. Complexul Energetic Turceni S.A. the mentioning of the decision which will be made with the Trade Registry and its publication with the Official Gazette as well as the cancellation of the mentions made in the trade registry based on the cancelled decisions. By the decisions of the General Meeting of Shareholders above the constitution project of the National Company Electra S.A. was approved by simultaneous operations of partial division and merger by fusion. The National Company Electra S.A. will consist of the Power generation complexes of Turceni, Rovinari and Craiova, the Company, the Ramnicu Valcea Hydroelectric Power Plants Branch, Sibiu Hydroelectric Power Plants Branch, Targu Jiu Hydroelectric Power Plants Branch, the branches (without legal personality) from the structure of Hidroelectrica, the Hidroserv Ramnicu Valcea branch, from the structure of Hidroelectrica, the National Lignite Company Oltenia. The court found the absolute nullity of the decisions of the above mentioned General Meetings of Shareholders, but rejected the request regarding the cancellation of the division and merger as unjustified, disposing the mention with the Trade Registry and the publication with the Official Gazette Part. IV of the court's decision on the date of its certification as irrevocable. Only the Power Complex Oltenia SA filed appeal against the abovementioned court decision;

- The file no. 3061/299/2009, on the dockets of Bucharest Tribunal by which Beta S.A. Buzau requested to the Court of District 1 to dispose the obligation of Nuclearelectrica to pay the amount of RON 51605.66 representing the difference of the invoices value and penalties according to the contracts no. R1522/2003, R077/2003 and R1734/2004 having as object the supply of fittings for carbon steel and non-nuclear carbon steel pipe. The court admitted the request of the claimant, the Company filing appeal against the decision of the trial court. The file is on the dockets;

- The file no. 47215/3/2009, on the dockets of the High Court of Cassation and Justice by which the claimant Electrica Furnizare Muntenia Nord S.A. requested the obligation of the Company to sign the addendums to the sale-purchase agreement of electric power no. 191/27.06.2005 and to the payment of the amount of RON 588,178.87 representing prejudice caused following the failure to recognise the amount of electric power provided in the decision of A.N.R.E. no. 1615/16.07.2009. The Company filed a counterclaim by which it requested the obligation of the claimant to pay the amount of RON 1,113,136.62 representing the outstanding amount to be paid corresponding to an invoice and delay penalties. The court admitted both claims and decided to compensate the reciprocal liabilities of the parties up to the lowest amount and the obligation of Electrica Furnizare Muntenia Nord S.A. to pay

the amount of RON 469,434.82 to the Company. The Company promoted an appeal against the above mentioned decision, but the Supreme Court rejected the appeal. The court decision is irrevocable. The defendant paid the debt to the Company.

- The file no. 3466/299/2012, on the dockets of Bucharest Tribunal by which the claimant requested from the Court of District 1 to compel the Company to pay the amount of RON 64,200 as interest damages representing money rights to which the former is entitled following the recalling without a just cause from the position of director held according to the administration agreement concluded with the Company on the date of 13.11.2009. The court admitted the action of the claimant, and the Company formulated appeal against the decision of the trial court. The court of appeal forwarded the case to the Bucharest Tribunal - Section VI Civil in order to be distributed to a panel settling causes with professionals.

- The file no. 76772/3/2011, on the dockets of the Bucharest Court of Appeal by which Fondul Proprietatea S.A. requested from the Bucharest Tribunal, as opposed to the Company in principal (i) to certify the absolute nullity of the General Extraordinary Meeting of Shareholders` decision no. 16/05.12.2011 of the Company and in branch (ii) to cancel the General Extraordinary Meeting of Shareholders' decision no. 16/05.12.2011, (iii) to mention the decision that will pronounce in the Trade Register and its publication in the Official Gazette as well as the corresponding radiation of the mentions made in the Trade Register based on the cancelled General Extraordinary Meeting of Shareholders` decision, as well as (iv) to cause the defendant to pay the trial expenses corresponding to the litigation. The court admitted the action of the claimant, and the Company formulated appeal against the decision of the trial court. Subsequently, the Bucharest Court of Appeal disposed the rejection of the appeal as unjustified, the solution being irrevocable.

- The file no. 44859/3/2011, on the dockets of the High Court of Cassation and Justice by which Transelectrica SA initially requested from the Bucharest Tribunal to compel the Company to pay the amount of RON 1,620,834.10 as delay penalties. The trial court admitted the request of the claimant and the Bucharest Court of Appeal subsequently rejected the appeal filed by the Company. The Company filed appeal against the decision of the Bucharest Court of Appeal. The cause is in process of being settled.

*Civil litigations*

- The file no. 3850/299/2012, on the dockets of Bucharest Tribunal by which the claimant requested the Court of District 1 to dispose the obligation of the Company to pay the amount of RON 437,818 as interest damages representing money rights to which the latter is entitled following the revocation without just cause from the position of general manager held according to the mandate agreement concluded as of 01.07.2008. The court partly admitted the claimant action, and subsequently both the claimant and the Company appealed the decision. The Court of Appeal, the Bucharest Tribunal, admitted the appeal of the claimant and compelled the Company to pay to the claimant the amount of RON 411,054 as interest damages and the amount of RON 13,186.54, as trial expenses corresponding to the fund and RON 5,849 trial fees corresponding to the appeal. The Company filed appeal against the

decision of the Court of Appeal. The file is on the dockets.

- The file no. 4052/299/2012, on the dockets of Bucharest Tribunal by which the claimant requested the Court of District 1 to dispose the obligation of the Company to pay the amount of RON 64,200 as interest damages representing money rights to which the latter is entitled following the revocation without just cause from the position of member of the Company Board of Directors. The court partly admitted the claimant action, causing the Company to pay the amount of RON 802.92 as money rights and the amount of RON 61.05 as trial expenses. The claimant filed appeal against the decision of the trial court. The file is on the dockets.

*Litigations with the administrative court*

- The file no. 1313/36/2011, on the dockets of the High Court of Cassation and Justice by which Cernavoda City and the Mayor of Cernavoda City have requested to the Constanta Court of Appeal as opposed to the Company and the National Commission for the Control of Nuclear Activities to cancel the building permit in the nuclear field no. SNN DICA 02/2011 issued by the National Commission for the Control of Nuclear Activities by which an authorization is issued so that Nuclearelectrica may build modules 5, 6 and 7 of the Intermediary Burned Fuel Deposit (IBFD) situated on the premises of C.N.E. Cernavoda branch. The court rejected the action as unjustified, and the claimants formulated an appeal, on the dockets of the High Court of Cassation and Justice. The file is on the dockets.

- The file no. 8184/2/2011, on the dockets of the High Court of Cassation and Justice by which Greenpeace CEE Romania requested the Bucharest Court of Appeal, as opposed to Nuclearelectrica and the Ministry of Environment (i) to cancel the decision of issuance of an environment approval for the Factory of Nuclear Fuel Pitesti, (ii) to cancel the Government Decision no. 445/2009 regarding the evaluation of the impact of certain public and private projects on the environment, (iii) the obligation of the defendants to start an authorization procedure according to the dispositions of Directive no. 85/377/EEC regarding the evaluation of the impact on the environment, transposed in Romania by GD no. 445/2009 and (iv) the suspension of the activity of the Factory of Nuclear Fuel Pitesti until the date of compliance with the law on the environmental impact. The court rejected the introductory request, the claimant formulated an appeal, and the High Court of Cassation and Justice issued the appeal decision and disposed the cassation of the appealed sentence and sent the cause for retrial to the same court. The file is on the dockets.

- The file no. 2865/3/2013, on the dockets of Bucharest Tribunal by which the claimant requested the obligation of the Company to communicate information of public interest according to Law no. 544/2001 regarding the free access to information of public interest. The court partly admitted the action and compelled the Company to communicate partly to the claimant the information requested at sections -18, 20-22, and 25 of the request recorded by the Company under no. 11682/27.11.2012 and rejected the other requests of the claimant. The sentence can be appealed.

*Employment litigations*

- The file no. 27102/3/2012, on the dockets of Bucharest Tribunal by which the claimant requested the cancellation of the dismissal decision issued by the Company, regarding the termination of the employment relations of the latter, the reintegration of the claimant in the position of main counsellor within the General Inspection of the Company and the payment of damages equal with the indexed, increased and updated salaries and with the other rights of which he could have benefit for the situation in which the contested decision had not been issued. The file is on the dockets.

- The file no. 4945/105/2012, on the dockets of Prahova Tribunal by which the claimant requested the obligation of the Company to cancel the decision to terminate the employment contract, the reemployment of the claimant in the previously held position, and the obligation of the Company to pay damages equal with the indexed, increased and updated salaries, and with the other rights to which the employee was entitled starting with 01.07.2012 and calculated until the date of the effective reemployment. The court disposed the rejection of the contestation as unjustified. The claimant formulated appeal. The file is on the dockets.

- The file no. 5448/109/2011, on the dockets of the Pitesti Court of Appeal by which the claimant requested the obligation of the Company to cancel the decision to terminate the employment contract and to pay money rights and moral damages in total amount of RON 95,000. Both the trial court and the court of appeal, the Ploiesti Court of Appeal rejected the requests of the claimant, the decision of the court of appeal remaining irrevocable.

*Litigations in which the Company is the claimant*

The Company is involved in litigations as claimant, in order to recover the liabilities and to cancel other administrative acts. At the same time, the Company joined a criminal case as a civil party.

On the reference date 03.06.2013, the Company is/was part during the last 12 months, as claimant/creditor, in 23 litigations, of which 19 causes with the value above the equivalent amount of RON 50,000 and 4 causes for which the value was not yet determined or having an object which cannot be evaluated in money, as follows:

*Corporate litigations*

- The file no. 59009/3/2011, on the dockets of the Bucharest Court of Appeal by which the Company requests the obligation of the defendant CE Oltenia Craiova to pay the amount of RON 17,087,881.16 representing penalties corresponding to the invoices paid with delay, according to the contract no. 1183/23.12.1008 having as object the supply of electric power. The trial court admitted the action and disposed the obligation of the defendant to pay to the claimant the amount of RON 17,087,881.16 as well as to pay the amount of RON 175,585 as trial expenses, and the Bucharest Court of Appeal maintained the solution of the trial court. The sentence can be appealed.

- The file no. 52814/3/2011, on the dockets of the High Court of Cassation and Justice by which the Company requested the obligation of the defendant S.C. Eco Energy S.R.L. to pay the amount of RON 2,403,397. 17 representing compensation for the prejudice caused by the termination of the contract no. 1171/2008, the price of the electric power and the legal interest applicable to the previous amounts for the period 22.02.2009 - 30.04.2011. The trial court admitted the exception of non-stamping and disposed the cancellation of the claimant request, as unstamped, the Company declared appeal by which it was disposed the cancellation of the sentence on trial and sent the cause for re-trial to the same court, and the defendant formulated appeal against this solution. The High Court of Cassation and Justice rejected the appeal as unjustified. The solution of the court is irrevocable.

- The file no. 27406/3/2012, on the dockets of the Bucharest Court of Appeal by which the Company asked the Bucharest Tribunal to dispose the obligation of the defendant S.C. Tinmar Ind S.A. to pay the amount of RON 1,655,228.07 representing the difference of the price of the area rate corresponding to the transport service for the placing of electric power into the network, the legal interest and penalties corresponding to the invoices paid with delay and calculated according to the penal clause of the sale-purchase contract of electric power no. 1574/09.12.2009. The trial court partly admitted the summons, compelling the defendant to pay to the claimant the amount of RON 1,230,780.39. The Company formulated appeal against this solution, and the Bucharest Court of Appeal partly changed the sentence attacked within the meaning that it compelled the defendant to pay to the claimant the amount of RON 55,546.39 as delay penalties, as well as the amount of RON 555.47 as trial expenses, which are added to the amounts to which the defendant was compelled in the first court and maintained the other dispositions of the appealed sentence. The sentence can be appealed.

- The file no. 5120/3/2013, on the dockets of Bucharest Tribunal by which the Company requested the obligation of S.C. Electrica Furnizare S.A. to the payment of the amount of RON 1,351,455.56 as penalties, resulted from the performance of the contract between the parties. The file is on the dockets.

- The file no. 33614/3/2012, on the dockets of Bucharest Tribunal by which the Company requested the obligation of the defendant S.C. Repower Furnizare Romania S.R.L. to pay the amount of RON 739,187.37 representing delay penalties corresponding to the invoices paid with delay and calculated according to the penal clause of the sale-purchase contract of electric power no. 1570/08.12.2009. The court admitted the request of the claimant, and the defendant formulated an action for annulment, which was settled by rejecting it as unjustified. The court solution is irrevocable. The defendant paid the debt to the Company.

- The file no. 27408/3/2012, on the dockets of Bucharest Tribunal by which the Company requested the obligation of the defendant S.C. Repower Furnizare Romania S.R.L. to the payment of the amount of RON 259,227.78, the mentioned amount representing delay penalties corresponding to the invoices paid with delay and calculated according to the penal clause of the sale-purchase contract of electric power no. 1570/08.12.2009, the difference of the price of the area rate corresponding to the transport service for the placing of electric

power into the network and the legal interest. The court admitted the action. The sentence can be appealed. The defendant paid the debt to the Company, remaining to pay also the trial expenses in amount of RON 14,090.

- The file no. 31151/299/2012, on the dockets of Bucharest Tribunal by which the Company requested the obligation of S.C. Energy Financing Team Romania S.R.L. to pay the amount of RON 390,360.36 representing the difference of the price of the area rate corresponding to the transport service for the placing of electric power into the network and the legal interest. The court rejected the action as unjustified and the counterclaim as remained without object; it partly admitted the request to compel the claimant to pay the trial expenses, in amount of RON 6,000 and the Company formulated appeal. The trial court rejected the appeal as unjustified and compelled the Company to pay to the appellant of the trial expenses in appeal representing an attorney fee in amount of RON 10,961.6 . The Company appealed the decision. The litigation is in process of settling.

- The file no. 7835/3/2012, on the dockets of Bucharest Tribunal by which the Company requested the obligation of S.C. Hidroelectrica S.A. to the payment of RON 15,295,201.28 representing penalties. The file was suspended de juris following the opening of the insolvency procedure regarding S.C. Hidroelectrica S.A. until the irrevocable settlement of the insolvency file.

- The file no. 44480/3/2012, on the dockets of Bucharest Tribunal by which the Company requested, by way of the payment notification, the obligation of the Regie Autonome for Nuclear Activities to pay RON 7,825,063.68. The court admitted the request of the Company and notified the debtor to pay the debt recorded within 30 days from the communication of the sentence. Currently, the file is in process of enforcement.

- The file no. 45676/301/2011, on the dockets of Bucharest Tribunal by which the Company formulated a contestation against the enforcement proceedings initiated by SC Proconex Universal SRL for the amount of RON68.352.33. The Bucharest Court of District 3 admitted the contestation to the enforcement proceedings and disposed the return of the enforcement, the reimbursement of the Company with the above mentioned amount and the obligation of the applicant to pay the amount of RON 5,177.35 as trial expenses. The appellant formulated appeal against the decision of the trial court. The court rejected the appeal as ungrounded.

*Civil litigations*

- The file no. 33659/3/2012, on the dockets of Bucharest Tribunal by which the Company requested the obligation of the defendant - Municipality of Cernavoda - to pay the amount of RON 336,707.37 as trial expenses. The litigation is in process of settlement.

- The file no. 4658/299/2013, on the dockets of the Court of District 1 by which the Company requested the court to compel Greenpeace CEE Romania to pay the trial expenses incurred in the file no. 8184/2/2011, on the dockets of the High Court of Cassation and Justice. The cause is in process of settlement.

*Litigations regarding the judicial reorganization and bankruptcy procedure*

- The file no. 22456/3/2012, on the dockets of Bucharest Tribunal by which the Company requested the registration to the statement of affairs of the debtor S.C. Hidroelectrica S.A. with the amount of RON 69,936,482.46, of which (i) RON 22,507,821.02 penalties according to the penal clause of the sale-purchase contract of electric power no. 144/03.02.2011; (ii) RON 28,773,061.96 according to the civil sentence no. 6037/07.05.2012 given by the Bucharest Tribunal; (iii) RON 18,655,479.18 penalties calculated according to the penal clause of the sale-purchase contract of electric power no. 821/01.10.2007 and (iv) lei 120.3 stamp duty and judicial stamp. The judicial receiver registered Nuclearelectrica in the preliminary table of accounts receivable with the amount of RON 28,773,061.96 (unsecured debt), for the rest of the amount the request being rejected. Against these mentions of the preliminary statement the Company formulated appeal, in the sense of admitting the entire debt, which represents the object of the file no. 37059/3/2012, registered on the dockets of Bucharest Tribunal. The court rejected the contestation of the Company as unjustified. The Company formulated appeal. The appeal was admitted, the court compelling the judicial receiver to record the debt in amount of 69.936.482,46 RON in the preliminary table of accounts receivable. The decision is irrevocable.

- The file no. 3868/118/2012, on the dockets of the Constanta Court of Appeal by which the Company requested the registration to the statement of affairs of the debtor S.C. Proconex Universal S.R.L. with the amount of RON 3,727,833.10 representing: (i) RON 3,347,433.9 delay penalties calculated according to the contract no. 844/01.11.2007; (ii) RON 199,861.38 attorney fees; (iii) RON 180,537.82 trial expenses given by court decisions. The receiver recorded the Company in the preliminary table of receivables with the amount of RON 92,695. Against the mentions in the preliminary table, the Company formulated appeal, requesting the admission of the entire debt. The contestation is the object of file no. 3868/118/2012/a1 recorded on the dockets of the same court. The Tribunal of Constanta partly admitted the contestation for the amount of RON 3,524,138.98, and the Company formulated appeal against this decision. The litigation is in process of settlement.

- The file no. 873/1259/2008, on the dockets of Arges Tribunal by which the Company requested the registration to the statement of affairs of the debtor S.C. Termoficare 2000 S.A. with the amount of RON 2,713,986.71 representing: (i) RON 1,272,756.33 debt remained after two partial payments; (ii) RON 729,108.17 penalties according to the commercial decision no. 624/16.01.2008; (ii) RON 712,036.61 penalties calculated until the starting date of the insolvency procedure, by virtue of annex no. 1 of the Market participation convention for the following day and (iv) RON 85.6 trial expenses. The judicial receiver admitted the debt of Nuclearelectrica for the amount of RON 2,001,950.10. Against the preliminary table the Company formulated contestation, settled by the decision no. 685/F/30.06.2009 in the sense of admitting the request of Nuclearelectrica to be recorded at the statement of affairs with the total amount of RON. 2,713,896.71 By the decision of 23.10.2012 the court established a new term for the recovery of the goods and debts and disposed the display of the distribution plan. Against this decision, the debtor S.C. Termoficare 2000 S.A.

formulated appeal. The file is on the dockets.

- The file no. 18770/3/2007, on the dockets of the Bucharest Court of Appeal by which the Company requested the registration to the statement of affairs of the debtor S.C. Con Dem S.A. with the amount of RON 2,446,227.08 RON. By the decision made the court rejected the reorganization plan and disposed the transition to the general bankruptcy procedure, appointing a liquidator. The file is on the dockets.

- The file no. 2183/115/2010, on the dockets of Caras Severin Tribunal by which the Company requested the registration to the statement of affairs of the debtor S.C. CET Energoterm Resita S.A. with the amount of RON 580,974.21 .By the decision made, the court disposed the transition to the simplified bankruptcy procedure, appointing a liquidator. The file is on the dockets.

- The file no. 1867/90/2010, on the dockets of Valcea Tribunal by which the Company requested the registration to the statement of affairs of the debtor S.C. Total Electric Oltenia S.A. with the amount of RON 198,602.5 representing the value of the delay penalties corresponding to the invoice no. 1881695/30.06.2006 issued according to the sale-purchase contract of electric power no. 378/2006 and a number of 66 invoices, in relation with the provisions of the Market participation convention for the following day no. 5857/2005. The court disposed the transition to the general bankruptcy procedure, appointing a liquidator. The file is on the dockets.

- The file no. 7238/120/2012, on the dockets of Dambovita Tribunal by which the Company requested the registration to the statement of affairs of the debtor S.C. Eco Energy S.R.L. with the amount of RON 2,464,059.64. By the decision made, the court recorded the Company in the preliminary table with the entire amount. Against the mentions of the preliminary table, the debtor formulated contestation, and the court rejected the contestation and disposed the provisory registration of the Company debt in the final receivables table until the settlement of the litigation. The court solution can be appealed. The file is on the dockets.

*Litigations of administrative law*

- The file no. 6561/2/2012, on the dockets of the High Court of Cassation and Justice by which the Company requested the court (i) the partial cancellation of the decision no. 89 of 02.08.2012 of the Contestations settlement commission of the Court of Auditors in Romania, by which the Contestation no. 6562/04.07.2012 formulated by the Company against the Decision no. 14 of 15.06.2012, issued by the Court of Auditors in Romania was partly rejected, (ii) the partial cancellation of the Decision no. 14 of 15.06.2012, issued by the Court of Auditors in Romania, for the application of the recovery measures of the findings in the Control report no. 4739 of 16.05.2012, (iii) the partial cancelling of the Control report no. 4739 of 16.05.2012, concluded following the control action of the Court of Auditors, made by the Company in the period 08.01.2012 – 16.05.2012, with the theme „Situation, evolution and administration manner of the public and private patrimony of the state at

Nuclearelectrica". The court rejected the action formulated by the Company, and the latter formulated appeal. The file is on the dockets.

- The file no. 6079/2/2010, on the dockets of the High Court of Cassation and Justice by which the Trade Union of CNE Cernavoda, trade union organization represented at the level of the Company, requested the Bucharest Court of Appeal to find the nullity of the Government Decision no. 56/2010 regarding the establishment of measures for the reorganization of the electric and thermal power producers under the authority of the Ministry of Economy, Trade and Business Environment, by the incorporation of the National Company Electra - S.A. and the National Company Hidroenergetica - S.A, published in the Official Gazette of 05.02.2010, rectified on 04.03.2010 and of the Government Decision no. 357/2010, by which was modified and supplemented the GD 56/2010. The court rejected the action formulated by the Trade Union of CNE Cernavoda but admitted partially the request regarding the other trial expenses in the sense that it compels the defendants - The Romanian Government and the Ministry of Economy, Trade and Business Environment to pay the amount of RON 1,000 each, to the claimants and interventions in its own interest representing attorney fees. Against this decision and exclusively aimed at compelling the parties to pay the trial expenses, the Romanian Government and the Ministry of Economy, Trade and Business Environment formulated appeal, recorded on the dockets of the High Court of Cassation and Justice. The Supreme Court rejected the appeals as unjustified. The solution is irrevocable.

- The file no. 937/256/2010, on the dockets of the Constanta Court of Appeal by which the Company contested the contravention minute issued by the Mayor of Cernavoda City in which the Company was fined with the amount of RON 100,000. The court admitted the complaint formulated by the Company and cancelled the contravention minute no. 2/28.01.2010 issued by the Mayor of Cernavoda city. The solution of the court can be appealed.

*Criminal litigation*

- The file no. 48031/299/2010, on the dockets of the Bucharest Court of District 1. The Company joined the case as civil party in this file on the performance by Rotaru Ioan, Irimie Traian Cezar, Ispas Gheorghe, Prisecariu Tereza, Nemtanu Raducu, Anghelescu Andrei Tudor of corruption acts following the breach of the legal provisions referring to public acquisitions in order to award contracts whose payments were made from the loans contracted with the stateguarantee, the Company being caused a prejudice of RON 12,629,551. As a civil responsible party the trade company Tess Conex S.A. Iasi appears in the trial. The trial is in process of settlement.

# 3. ELECTRICITY MARKET ANALYSIS

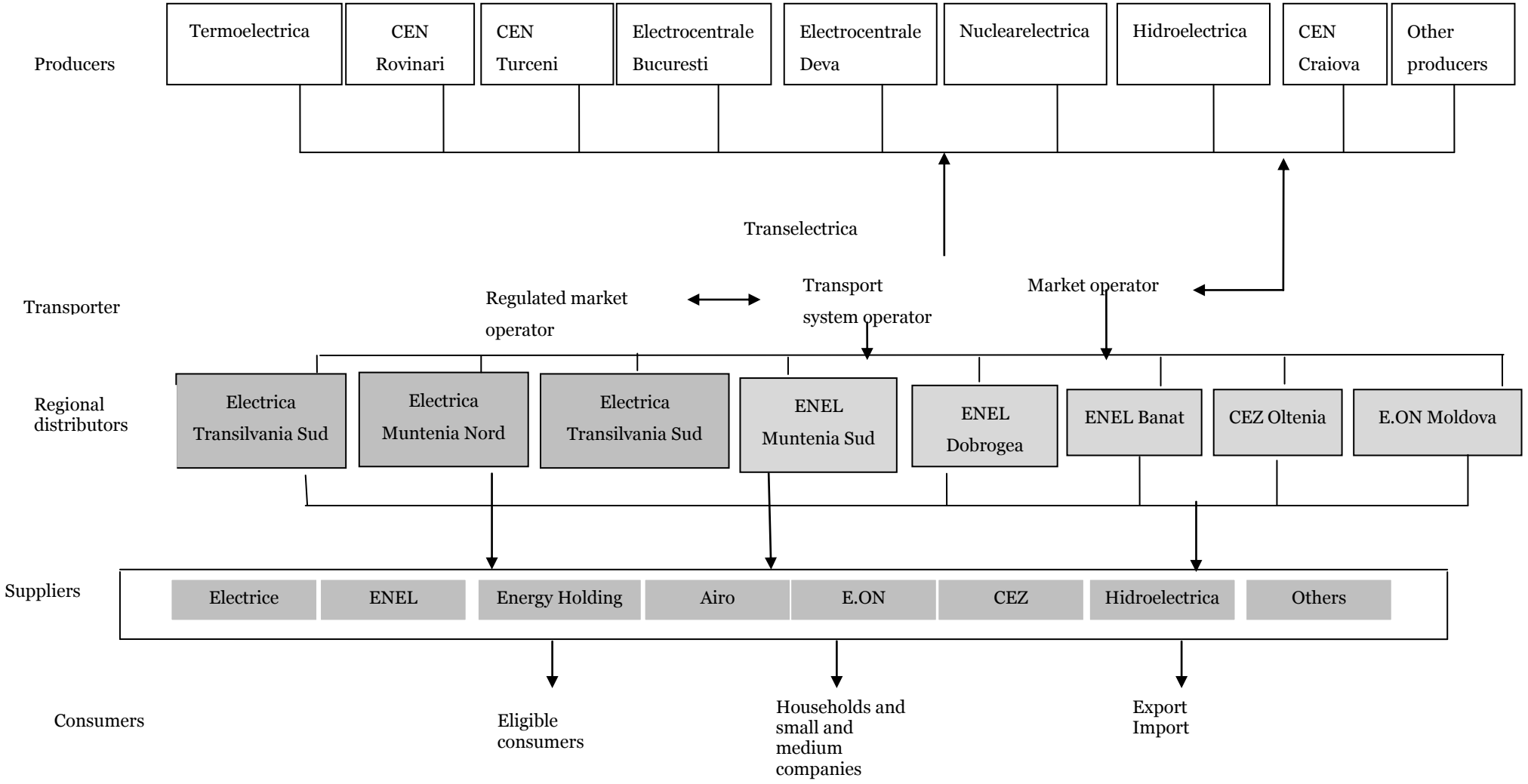
## 3.1 Electricity market structure in Romania

The participants to electrical power market of Romania, which are certified by the National Authority of Regulation in the Power Field ("ANRE") are:

- Electricity producers
- The Electricity Transportation Company, Transelectrica
- Distribution companies
- Power suppliers

In the following diagram, the structure of electrical power market of Romania is shown:

Image 6: Structure of the electricity market in Romania



*Source: ANRE*

*During 2012 year, CEN Turceni, CEN Craiova, CEN Rovinari and SNLO had merged, establishing Complexul Energetic Oltenia*

The supply of Romania with electrical power is issued on two market segments:

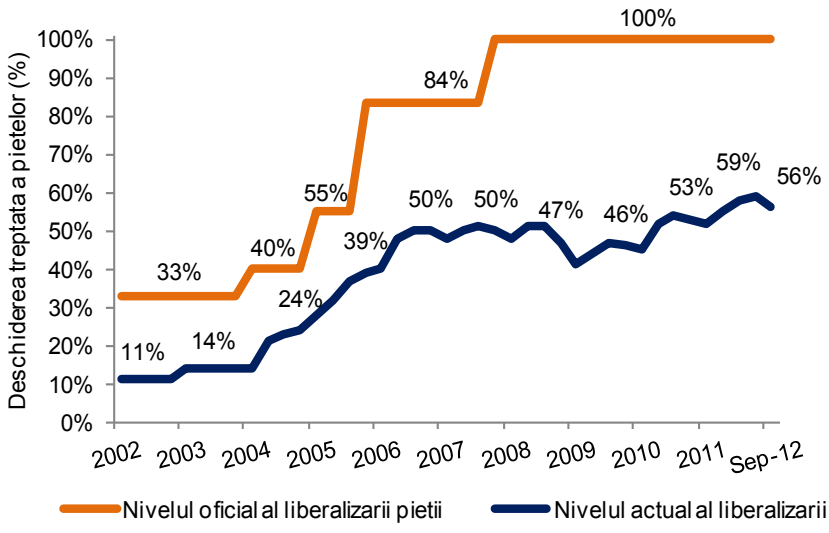
- Regulated market;
- Competition market.

The regulated consumption regards the consumption of the households and some of the consumption of industrial field.

In Romania, the progressive opening of the market officially started in 2000, but the real competition started in 2003 by the approval of the Electrical Power Law (Law no. 318/2003) regarding the adoption of the European Directive no. 54/2003/EC for the Romanian power market.

In accordance with the legislation in force, the electrical power market of Romania was fully liberalized starting with 1.07.2007. However, in practice, the electrical power supply was supported in a regulated regime at wide scale. On December 2012, 56% of the total of consumed electrical power was traded by regulated contracts.

Figure 7. Gradual opening of the electrical power market




Official level of the market liberalization  Current level of the market liberalization

*Source: ANRE monthly reports 2002 – 2012*

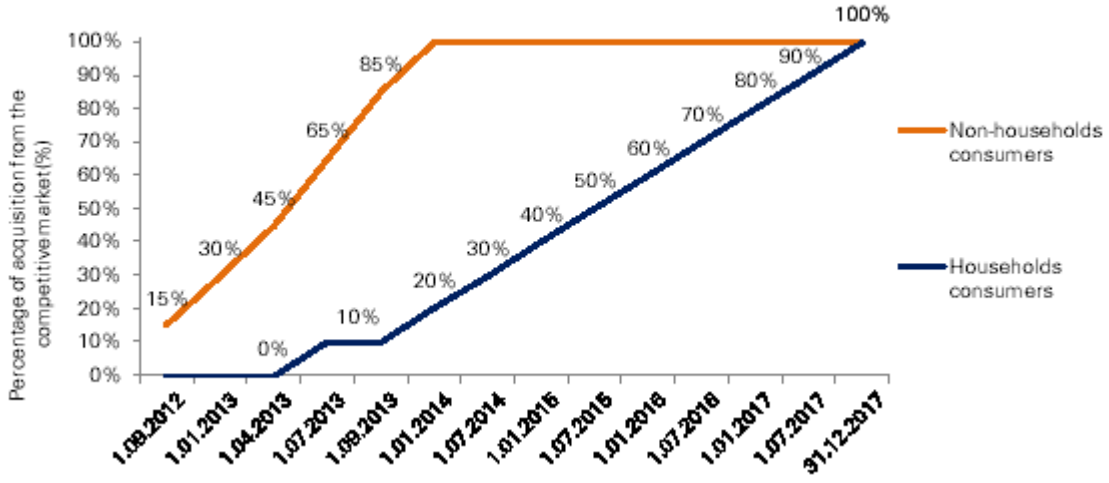
Consequently, on June 2009, the European Commission issued an official notification letter to

Romania, regarding the maintenance of a regulated price system, which infringed the EU directives and the implementation of changes foreseen for the following years. On April 2011, the European Commission issued a notice to Romania regarding the liability of ensuring the household consumers and the small and medium companies the possibility to select their provider, due to the fact that the regulated prices for the final consumers are applicable to all the household consumers and to the small and medium companies, which have not yet exercised their right to change the provider.

Moreover, on 29.09.2011, the European Commission initiated infringement procedures against Romania and other member states for the infringement of the community right by the inability of transposing the Directive 72/2009 on the internal market of electrical power. The Ministry of Economy established that ANRE concludes the transposing documents of the directive and send them to the Commission on September, being subjected to the Government approval after the Commission sent its position with respect to their compatibility to the EU legislation.

According to the above mentioned, a New Law of Power and Natural Gas (Law no. 123/10.07.2012) was issued. According to it, the removal of regulated prices will be made starting from 1.09.2012 for the industrial consumers and starting from 1.07.2013 for the household consumers. This way, in accordance with the calendar proposed for the removal of regulated tariffs, published by ANRE, the regulated tariffs for electrical power to the household consumers, which are lower than the tariffs on the competitive market, will be removed starting from July 2013, by 10%, continuing in the same rhythm on two bi-annual stages from 2014, while in the case of non-household consumers, the liberalization will take place with a more accelerated rhythm.

Figure 8: Gradual opening of the electrical power market




*Source: ANRE Order no. 30/2012, SNN Analysis*

It is foreseen that the Romanian regulated market will be fully eliminated until 2018. Moreover, it is expected that the electrical power regulated market to be covered by all the power producers, especially by the current situation, when the only producers that participate on this market are owned by the state. Currently, "the regulated power trunk" is assigned based upon the production

cost, for the purpose that the electrical power prices to have a low impact on the population.

3.1.1. Regulated market

By the regulated market, the electrical power is supplied to captive consumers or to the consumer that did not exercise their eligibility right. Among the regulated market participants, there are the electrical power producers and the suppliers of captive consumers.

On the regulated market, the regulation authority ANRE both establishes the regulated quantities that are to be traded between the participants and the regulated prices for electrical power. The prices and quantities are distinctly established for each producer.

The regulated contracts are concluded between the producers (state companies), the suppliers of captive consumers and the distribution companies (for the coverage of technological losses) and are intended to protect the contracting parties against the fluctuation risk of the electrical power price on the competition market.

The structure of electrical power sales on the regulated market during the period 2008 – 2012, depending on the resources used for the production of electrical power was:

Table 16: Structure of electrical power sales on the regulated market, depending on the resources used for its production

| Structure of power sales on the regulated market | | | | | |
|---|---|---|---|---|---|
| Type of producer | | | | Quantity (GWh) | |
| | **2008** | **2009** | **2010** | **2011** | **2012** |
| Producers that use fossil fuels* | 17.315 | 17.470 | 16.333 | 12.994 | 12.450 |
| Nuclear producers | 7.200 | 7.229 | 6.418 | 6.685 | 7.500 |
| Hydro producers | 3.730 | 3.880 | 4.092 | 3.896 | 4.104 |
| Other producers | 858 | 1.606 | 2.076 | 2.194 | 124 |
| **Total sold power on the regulated market** | **29.104** | **30.186** | **28.919** | **25.770** | **24.178** |
| **Total power consumption** | **54.627** | **49.923** | **52.027** | **53.740** | **52.315** |
| % regulated market of the total consumption | 53% | 60% | 56% | 48% | 46% |

**Including the electrical power sold to CNTEE for the coverage of technological losses.*

*Source: ANRE monthly reports*

The electrical power sold on the regulated market was quite constant during the last five years. However, the percent occupied on the regulated market of the total consumption does not follow a constant tendency, consequently to the decrease of consumption in the industrial field, which was affected by the financial crisis starting from 2009, this leading to the decrease of electrical power consumption at the national level.

3.1.2. Wholesale market

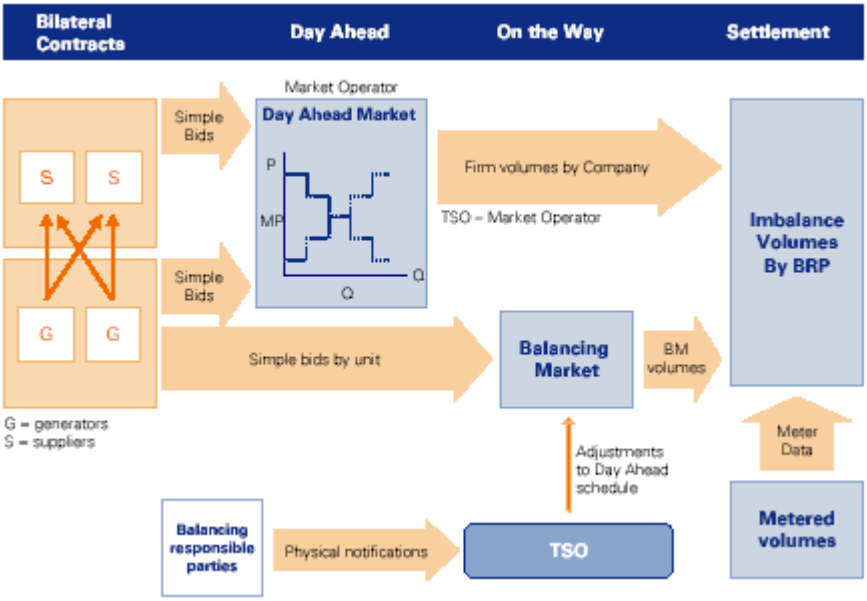
Currently, the Romanian competition market includes the following markets:

- The centralized markets managed by OPCOM:

- Centralized Market of Bilateral Contracts ("PCCB");
- Day-Ahead Market ("DAM");
- The intra-day market ('IDM"), starting from 2011;
- The Centralized Market of Green Certificates ("PCCV"); and
- Transaction Platform of the Certificates of gas Exhaustions with a greenhouse effect (PTCE);

- The market of bilateral contracts, directly negotiated;
- The balancing market;
- The ancillary services market.

Figure 9: Wholesale market structure




*Source: ANRE*

The market players may procure the electrical power by the bilateral contracts (Bilaterally negotiated contract), based on direct negotiation or by the centralized market, administered by OPCOM. OPCOM has the role of electrical power market operator, granting a platform for the trading transactions within the electrical power engross market, by the trading on four different markets (Centralized Market of Bilateral Contracts issued by public bids and the Centralized Market of Bilateral Contracts by permanent negotiation, DAM, IDM and PCCV).

By the trading platform, OPCOM ensures the transparence of the electrical power prices, the total traded volume in 2011 being about 14 TWh of electrical power, which means 26% of the total of electrical power request of Romania. By this liquidity, OPCOM was appointed at the end of 2010 year, the centralized market with the best trading liquidity of electrical power in the south-east of

Europe.

***Centralized market of bilateral contracts (PCCB)***

PCCB is a volunteer market that includes the Centralized Market of Bilateral Contracts denominated by public bids (PCCB) and the Centralized Market of Bilateral Contracts with a Continous Negotiation (PCCB-NC).

By PCCB, OPCOM organizes public bids, having as object the sale and purchase of electrical power. The sale/ purchase tenders are registered from each producer/ supplier/ consumer by the market operator, with the specification of minimum/ maximum price and the frame that will be agreed and whereby it is planned the delivery/ purchase of electrical power. The tenders are not standardized from the point of view of the volume and of the contractual terms. The sale and purchase tenders specify the supply conditions (including the volume, period and minimum/ maximum price, and the contractual frame). The quantities of the original tender cannot be changed by negotiations. The winner firmly accepts to supply/ consume the specified volume of electrical power in the original tender. The delivery term is at least one month.

The bilateral contracts may be concluded by permanent negotiation (PCCB-NC) between the power market participants (producers/ suppliers/ eligible consumers). On PCCB-NC, the tenders are standardized from the point of view of quantity, daily load (on the band, during the rush hours or during the period outside the rush hours) and of the delivery periods (one week, one month, one quarters or one year).

***Day-Ahead Market***

The day-ahead market (DAM) is used for the trading of standard products, at an hourly range and for the following calendar day. The market participation for the following day is voluntary and regards all the registered and licensed participants (producers, suppliers and system operators). To be registered on DAM, it is necessary that the participant concludes an agreement with OTS for the balancing responsibility or he/ she may transfer the responsibility to a party responsible for the balancing. The market operator OPCOM is the admitted intermediary of all the trades on the DAM.

***Balancing market***

The balancing market is a mandatory market for all the participants and is used to balance the deviations from the planned values for production/ consumption. Each participant must assign a production capacity and a dispatcher load upon the planning, to ensure that the liabilities of primary reserve are obtained.

Transelectrica, as balance market operator, is the counter-party of all the trades. It approves the balance market participants, gathers, checks and process the tenders and ensures on the fulfillment of compensation procedures.

***Ancillary Services Market***

Transelectrica buys system technological services from the producers by an ANRE regulated

procedure and on a partially competitive market. The types of the acquired system technological services include secondary reserves, slow third reserves from the conventional sources or in cogeneration and fast third reserves. The primary reserves are not acquired by a competitive system, but they are ensured by Transelectrica.

***Intra-day market (IDM)***

Besides the trading on DAM, OPCOM launched in 2011 the intra-day market that allows the trading for the current delivery day. The intra-day market grants the participants the change to balance their sale portfolio for the delivery day by trades issued after the conclusion of DAM.

***Centralized market of green certificates (PCCV) and the Trading platform of the $CO_2$ exhaustion certificates***

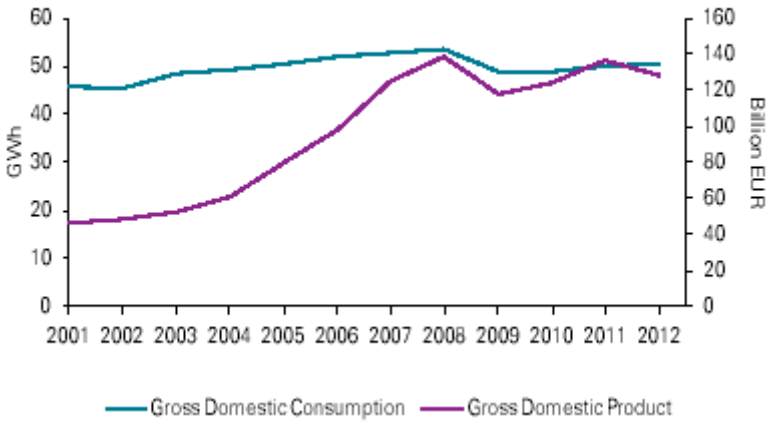
PCCV grants a way to trade the green certificates (GC) on the Romanian market. As well as the PCCB platform, the market participants have the chance to show sale and purchase tenders for GC, which they own or they want to acquire.

The trading platform of the certificates of gas exhaustion with a greenhouse effect grants a market to the regulated entities to buy certificates of exhaustions in the case of a deficit, as well as the opportunity of selling a surplus in the case of participants with a surplus of certificates.

3.1.3. Electrical power demand and supply

The electricity consumption rate in Romania felt significant fluctuations during the last two decades. The internal electricity consumption had significantly decreased during the period 1989-2000, greatly due to the collapse of industrial request after 1989. The statement was stabilized in 2000, when the electrical power request increased for the first time after a decade. After a constant increment, the peak was reached in 2008. The following diagram shows the evolution of gross power consumption in Romania, during the last decade, correlated to the GIP.

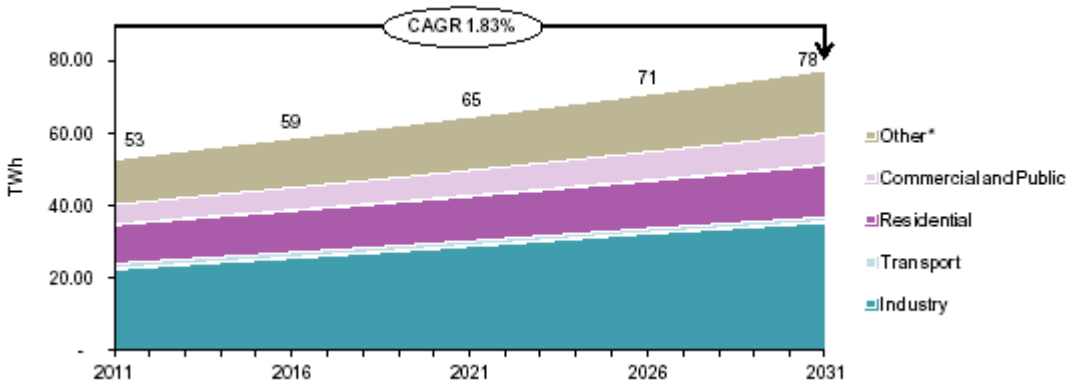
Figure 10: Electrical power consumption in Romania and the GDP increment




*Source: UE, SNN analyses*

In 2012, the electrical power gross consumption of Romania reached 50.38 TWh, representing an increment of 1.11% compared to 2011. On medium term, it is expected that the electrical power request increases reaching 78 TWh until 2031. This supposes a yearly rate made of increment (CAGR) of 1.83% during the period 2011-2031, being in accordance with the GDP/capita increase, and, also, with the foreseen changes in the consumption structure of the households compared to industrial field.

Figure 11: Forecast over the gross electric power request during 2011-2031




*Source: EIU, SNN analysis*

For the first nine months of 2012 in Romania, the electric power request was not satisfied by the level of production. Hence, Romania did not continue to be a net exporter of electric power and imported 150GWh. During 2011 and 2010, Romania exported 1.900GWh, 2.910GWh respectively.

According to the Romanian Energetic Strategy, Romania intends to remain an important electric power exporter until 2020 and, likewise, to continue to be an active player within the Central Europe free market.

In 2012, Romania had a gross production capacity of over 20GW and a net capacity of approximately 17 GW, hence being the country with the biggest facility for electric power production in South-Eastern Europe.

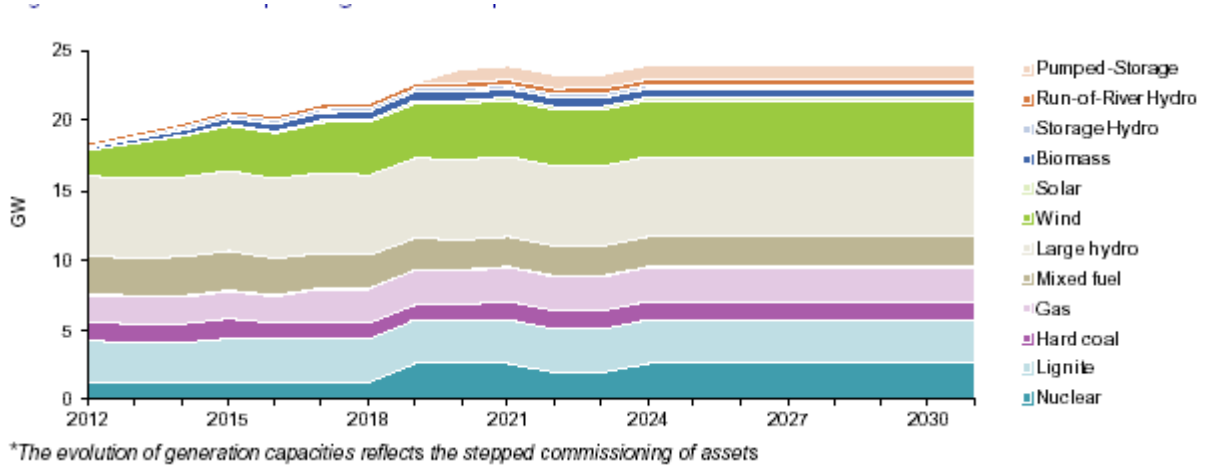
The production facilities for the electric power in Romania are confronted with a series of challenges, since a big part of them outran the technical life duration. Proximately 30% from the production facilities are older than 40 years and other 25% have around 30 years old. Approximately 15% from the production facilities were put into function in the last 5 years.

During the last 10 years, almost 3 GW from the thermal production facility were decommissioned in Romania. It is expected that during this decade other decommissions may take place , since electric plants need refurbishment and modernization in order to fulfill the EU requests within the compulsory terms convened for updating.

3.1.4. Production facilities

According to the public available data, the net production capacity of Romania is estimated to grow from approximately 17 GW in 2012 until 24 GW, in 2031. This forecast is based on the existent capacities and on the new planned capacities (such as 1.000 MW associated with the storage hydro-electric plant from Tarniţa and the two supplementary nuclear units from Cernavodă, with an installed capacity of 724 MW each), as well as on the expectation related by reaching the quotes established for the renewable energy in 2020.

Figure 12: Evolution of power generation capacities in Romania

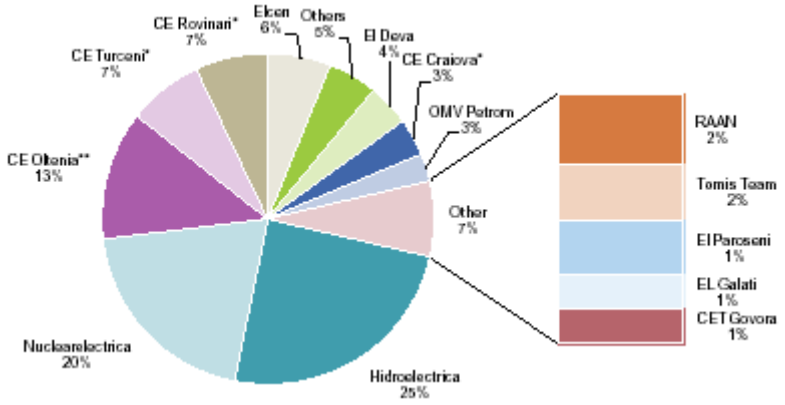



*Source: ENTSO-E, SNN Analysis*

The total electric power produced in Romania reached 42,40 TWh for the first nine month of 2012 (including exports and technological losses), the coal and the hydrologic resources representing approximately 56,1% of the production. The nuclear production had a 24,1% contribution within the total produced electric power, while the rest was covered by gas resources, other liquid fuels and other conventional resources.

The main electric power suppliers in Romania are Hidroelectrica, Nuclearelectrica, Electrocentrale Deva, Complexul Energetic Oltenia formed after the merging of CEN Turceni, CEN Rovinari, CEN Craiova and SNLO. They sum up approximately 77,5% from the total national electric power production. In September 2012, the market leader in terms of electric power suppliers was Hidroelectrica, with a market share of 24,6%, followed by Nuclearelectrica with approximately 19,8 market share.

Figure 13: The share of electricity delivered by the producers in NES in 2011




*Source: ANRE*

At present, one of the most important investments that follow to be achieved is the one associated with the pump storage hydro-electric plant from Tarniţa of 1.000 MW (estimated putting into service -2020);

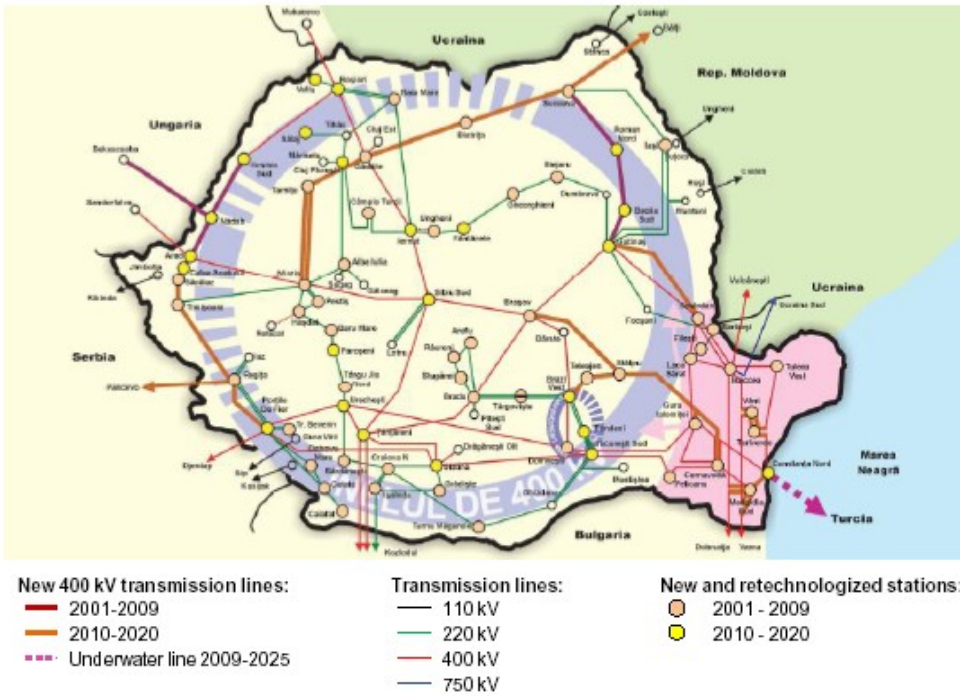
Until 2020 it is estimated to enlarge the production facility for Aeolian energy with 3.000 MW, of the biomass with 600 MW and of the solar capacity with 260 MW (according to the National action plan within the domain of renewable energy domain, issued by the Ministry of Economics, in 2010).

Beside the above mentioned investments, the gas turbine with combined cycle developed by Petrom Brazi, with an installed capacity of 860 MW was put into service in October 2012.

3.1.5. Transport network of the electric power in Romania

Transelectrica is responsible for the transport operation system, including the administration of the electric power market (by means of its subsidiary, the OPCOM market operator) and of the interconnection with the energetic systems of the neighboring countries. The Romanian transport operator for the electric energy is a member of UCTE from May 2013, and a member of ENTSO-E. The next figure presents the transport system for the electric energy in Romania, in 2011.

Figure 14: Romanian network for electric power transportation




*Source: Transelectrica*

On the grounds of the ENTSO-E forecasts, Romania has an import capacity of 2.000 MW and an export capacity of 1.900 MW.

### 3.1.6 The wholesale electricity market in Romania

In Romania, the prices of the electrical energy had increased with an annual average of 5.73% from 2006 until 2008, but registered a 30% decrease in the year 2009, pursuant to the economical and financial crisis. In 2010, the wholesale prices of the electrical energy transacted on DAM had registered an increase of 6.35%, being followed by an increase of 41.53% in 2011. In 2012, the prices of the electrical energy transacted on DAM, had registered a light decrease of 2.67% up against 2011.

## 3.2 Nuclear Energy Market

### 3.2.1. General overview of the nuclear energy market

The nuclear technology makes use of the energy released through the division of the atoms from different elements, such as uranium and plutonium.

In comparison with other conventional energy resources, the power stations have the following advantages:

- Are viable electrical energy resources, with an operating duration that can be extended up until 60 years;

- The cost of the electrical energy is competitive
- In the condition of normal operating, the pollution of the environment is almost inexistent;
- Are used small fuel quantities for the production of a dense quantity of electricity;
- The quantity of the produced waste is very small, in comparison with those resulted from the classic stations;
- The initial capital costs (investments) are big, but the operating and maintenance costs are low and predictable.

This technology was launched during the year 1940. The first commercial power station was carried into action in the 50's. In conformity with the World Nuclear Association, currently there are 432 nuclear reactors that function in 30 countries and other 63 reactors in construction. These deliver approximately 14% of the total electrical energy in the world, in base load, and their efficiency is in growth.

According to the World Nuclear Association, currently there are 16 countries that depend on the nuclear energy, this representing a quarter of the total energy. France receives almost three quarters from the electrical energy from the power stations, while other countries like Belgium, Bulgaria, Czech Republic, South Korea, Switzerland, Slovakia, Slovenia, Sweden, Ukraine and Hungary receive at least a third. A general overview of the nuclear reactors from all over the world (operating or in construction) is detailed in the Annex 2.

Japan, Germany and Finland could cover more than a quarter from the electrical energy necessary for the consumption through the power stations, while in the USA only a quintile. Among the countries that do not detain power stations, there is Italy, which receives approximately 10% of the electrical energy from foreign power stations and Denmark with 8%. A quarter of the reactors of the world have a loading factor bigger than 90% and approximately 2 tierces have a factor bigger than 75%. The USA detains almost one third of the power stations of the world and almost half from the first 25 reactors.

In addition to the commercial power stations, there are also about 250 research reactors in 56 countries and more in construction. These have several utilizations, including research and formation.

Among the advantages of the nuclear energy, there are also the small costs regarding the fuel in comparison with the gas or the coal. However, the uranium must be processed, increased and transformed into fuel elements and approximately half of its cost is due to the increasing and fabrication. On the long term, the advantage of the uranium, in comparison with the fossil fuel, is represented by the reduced impact on the increase of its price upon the production cost of the electrical energy.

The installed nuclear capacity has initially increased rapidly, reaching, from less than 1 GW in 1960, 100 GW at the end of 1970 and 300 GW until the end of the year 1980. Starting with the end of 1980, the capacity at a global level has increased more slowly, reaching 366 GW in 2005.

Between the years 1970-1990, a bigger capacity than 50 GW was in construction (reaching higher than 150 GW between 1970 and 1990), and in 2005 it was planned a new capacity, of approximately 25 GW. During the years 1970 and 1980, the increase of the economic costs (amplification of the construction time, mostly related to the regulation modifications and to the intensity raised by the pressure groups) and the decrease of the fossil fuel prices, has lead to the fact that the nuclear stations in construction had become less attractive.

Currently, the world's biggest nuclear stations in construction use the European Pressurized Reactor (EPR) type, which is a third generation nuclear reactor. According to the data from 2012, four European Pressurized Reactors will be built world-wide:

- The first EPR will be built in Olkiluoto, Finland, with the common effort of the AREVA from France and Siemens AG from Germany and will have 1.600 MWe. The established delivery date is 2013 and the operation should start in August 2014.

- The second EPR ever built is located in Flamanville, Mache, France and will have a capacity of 1.650 MWe. The construction should be finalized in 2016.

- In 2009 and 2010, the construction of two additional Units has started (Taishan 1 and 2), construction planned to last 46 months and which is estimated to be built faster and a lot under the price of the first EPR's, from Finland and France.

### 3.2.2. CANDU Technology

There are several nuclear reactors in the world, as shown below:

Table 17: Operational nuclear plants

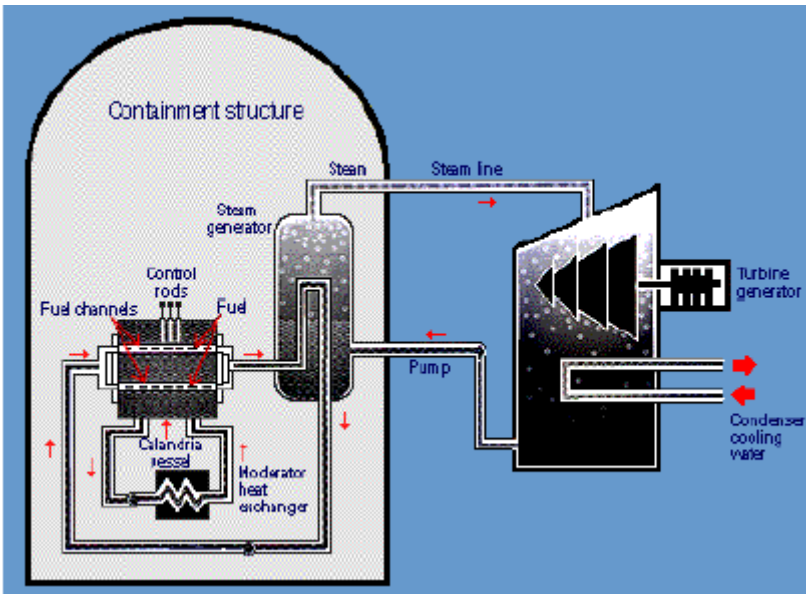
| Reactor type | Main countries | No. | GW's | Fuel | Cooling Agent | Moderator |
|---|---|---|---|---|---|---|
| Pressurized water reactor (PWR) | USA, France, Japan, Russia, China | 265 | 252 | Enriched $UO_2$ | water | water |
| Boiling water reactor (BWR) | USA, Japan, Sweden | 94 | 86 | Enriched $UO_2$ | water | water |
| "CANDU" Pressurized heavy water reactor (PHWR) | Canada | 44 | 24 | Natural $UO_2$ | heavy water | heavy water |
| Advanced gas-cooled reactor (AGR & Magnox) | United Kingdom | 18 | 11 | Natural U (metal) Enriched $UO_2$ | $CO_2$ | graphite |
| Graphite moderated light water cooled reactor (RBMK) | Russia | 12 | 12 | Enriched $UO_2$ | water | graphite |
| Fast breeder reactor (FBR) | Japan, Russia | 2 | 1 | $PuO_2$ and $UO_2$ | liquid sodium | none |
| Other reactors | Russia | 4 | 0 | Enriched $UO_2$ | water | graphite |

*Source: World Nuclear Association*

CANDU is the main technology at national level in Canada, but also the export basis of the energy industry. CANDU reactors use uranium ore as raw material for the purpose of manufacturing clusters of fuel and heavy water as a moderator. CANDU reactors are refueled continuously in

order to operate at maximum capacity, with loading/unloading cars connected to individual fuel channels being used during operation.

Figure 15: CANDU nuclear reactors




*Source: World Nuclear Association*

At this time, there are 44 heavy water CANDU reactors in the world (3 are being refurbished: 2 in Ontario and 1 in Brunswick, while 2 others are being under presevation in safe conditions in Ontario). The sale of CANDU reactors on the competitive international market by Atomic Energy of Canada Limited (AECL) was a success that has positioned the CANDU technology alongside products from industry giants such as General Electric, Hitachi, Westinghouse and AREVA. AECL has consistently built reactors for the past 30 years, and, besides its initial exports to India and Pakistan, it has designed, built and delivered CANDU reactors to customers in Argentina, China, Romania and South Korea.

The most important components of the CANDU nuclear steam fueled system are the following: the reactor, fuel handling, heat transport, water supply and steam systems. The fuel handling system provides fresh fuel and removes the used fuel from the reactor. The heat produced by the reactor subsequent to the nuclear fission in the fuel is eliminated through the heavy water transport system and is transferred to the fuel water through the steam generators, with the resulting steam being supplied to the turbine.

# 4. ANALYSIS OF OPERATIONAL AND FINANCIAL-ECONOMIC PERFORMANCE OF THE COMPANY

The analysis of operational and financial-economic performance of the Company was performed by comparison with producers of electric power in Romania, as well as with other companies which operate similar nuclear power plants on the international market.

## 4.1 Indicators of operational performance

Table 18: Nuclear Safety and Radiological Indicators safety(2010-2012)

| Indicator | Measurement unit | 2010 | 2011 | 2012 |
|---|---|---|---|---|
| Number of reportable events (at most level 1 on the INES international scale) | Numerical units | 0 | 0 | 0 |
| Radiation collective dose of the personnel of the two nuclear units– cumulated (regulated level – no more than 1000 man mSV) | Man mSv | 787 | 393 | 918 |
| Volume of radioactivity released into water and air – cumulated (regulated level – no more than 20 μSv) | μSv | 6 | 4 | 6 |

*Source: SNN Analysis*

Units 1 and 2 have a high level of nuclear safety, with the Company keeping an insignificant radiological impact on the environment and population between 2010 and 2012, as a result of a very good operation of the nuclear reactors and of the quality of the nuclear fuel, by permanently observing the internally and internationally stipulated norms for radioactive emissions.

Table 19: Internal technological consumption of electric power (2010-2012)

| Indicator | Measurement unit | 2010 | 2011 | 2012 |
|---|---|---|---|---|
| Internal technological consumption of electric power | % | 7,90% | 7,96% | 7,90% |

*Source: SNN Analysis*

SNN's internal technological consumption of electric and thermal power has maintained a constant trend during 2010 – 2012, with no major fluctuations existing in the purchase of energy used to cover the former. An important part of the internal technological consumption is purchased during the planned outages of the facilities.

Table 20: The Gross Capacity Factor – SNN and other CANDU units (2010-2012)

| Indicator | MU | Nuclearelectrica | | | Ontario Power Generation | | | | | | | | | Hydro-Quebec | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Pickering A | | | Pickering B | | | Darlington | | | Gentility-2 | | |
| | | 2010 | 2011 | 2012 | 2010 | 2011 | 2012 | 2010 | 2011 | 2012 | 2010 | 2011 | 2012 | 2010 | 2011 | 2012 |
| Gross Capacity Factor | % | 94% | 95% | 93% | 62% | 68% | 78% | 76% | 76% | 78% | 88% | 95% | 93% | 64% | 67% | 82% |

*Source: SNN, IAEA, WNA Analysis*

The capacitygross capacity factor forUnits 1 and 2, as average of the two units, during 2010 – 2012 is high compared to similar reactors in the world (Pickering A, Pickering B, Darlington and Gentility-2). Performing the operation activities consistent with the nuclear safety standards ensures a small number of unplanned shutdowns and consequently a high efficiency during operation.

The remarkable results of the Cernavoda nuclear plant regarding the operation performance, nuclear safety and radioprotection measures of the population, of the environment and of the personnel were verified and certified by the World Association of Nuclear Operators ("WANO"). As far as statistics for the CANDU technology go, Cernavoda NPP Unit 2 of is the most efficient nuclear reactor of its type in the world, according to IAEA reports in 2011.

Table 21: Top 10 CANDU units since in service (2011)

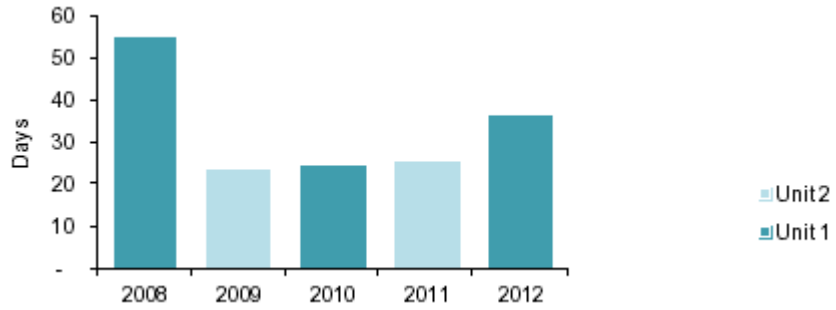
| | ENP | Capacity factor |
|---|---|---|
| 1 | Cernavoda 2 | 95.30% |
| 2 | Wolsong 3 | 94.90% |
| 3 | Wolsong 4 | 94.00% |
| 4 | Wolsong 2 | 93.80% |
| 5 | Qinshan 5 | 91.30% |
| 6 | Qinshan 4 | 90.20% |
| 7 | Cernavoda 1 | 89.40% |
| 8 | Darlington 3 | 86.30% |
| 9 | Darlington 4 | 85.70% |
| 10 | Embalse | 84.90% |

*Source: IAEA (2011)*

### *Planned and unplanned outages*

A broader view over the capacity factor shows that losses caused by planned and unplanned outages were at a low level. Unit 1 had a series of planned outages varying from 25 to 55 days per year, while Unit 2 from 24 to 26 days per year. The evolution of planned outages for the last 5 years is presented below.

Figure 16: Planned outages during 2008-2012



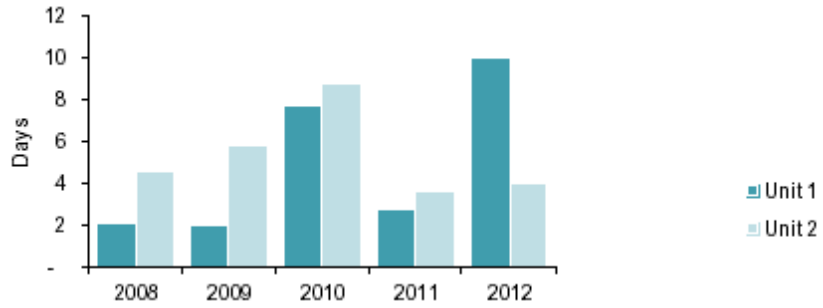

*Source: SNN*

Annual inspections for the  nuclear units in operationat Cernavoda NPP are performed alternately. Thus, planned outages are performed once every two years for each nuclear reactor.

Visual inspections, non-destructive examinations and maintenance activities are performed during the planned outages. The works are performed to improve the original design of the facilities, by increasing the reliability of the plant and the critical components and also to improve the operational activity of some equipment and systems.

Besides planned outages, unplanned outages may occurshutdowns,  which might cause disfunctionality in operationg.operating. These outages are very short term and may appear due to faults in equipment or human operation errors. Unit 1 has had a series of unplanned outages, from 2 to 10 days in a year, while Unit 2 from 4 to 9 days in a year. The evolution of unplanned outages over the last 5 years is presented below:

Figure 17: Unplanned outagesoutage during 2008-2012




*Source: SNN*

## 4.2 Economic and financial performance indicators

4.2.1 Comparative analysis with other energy producers at national level

Comparative analysis –SNN , Hidroelectrica, CE Oltenia

The economic and financial results of SNN were analyzed by comparison with other energy owned by the Romanian State, taking into consideration the fact that the specificity of their activity does not make them directly comparable with SNN from the perspective of the production source and of the type ofelectricity.

Table 22: Economic and financial indicators –SNN and other energy producers in Romania (2010-2012)

| Indicators | Measuring unit | Formula | Nuclearelectrica | | | Hidroelectrica | | Companies that merged with CE Oltenia | | | | | | CE Oltenia |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | CE Turceni | | CE Rovinari | | CE Craiova | | |
| | | | 2010 | 2011 | 2012 | 2010 | 2011 | 2010 | 2011 | 2010 | 2011 | 2010 | 2011 | 2012 |
| Turnover | Mil. RON | Row 01 Ballance Form 20 | 1,515 | 1,588 | 1,653 | 3,287 | 3,044 | 1,452 | 1,957 | 852 | 1,059 | 1,170 | 1,374 | 2,237 |
| Operating expenses as to turnover | % | Operating expenses/Turnover | 88.46% | 89.94% | 90.88% | 84.70% | 94.81% | 101% | 92% | 137% | 130% | 99% | 99% | 148% |
| EBIT | Mil. RON | Operating profit | 179 | 163 | 153 | 503 | 161 | 4 | 179 | 22 | 78 | 11 | 24 | 44 |
| EBIT Margin | % | EBIT/Turnover | 11.83% | 10.24% | 9.21% | 15.30% | 5.29% | 0.28% | 9.15% | 2.58% | 7.37% | 0.94% | 1.75% | 1.97% |
| Labor productivity | Thou. RON/employee | Turnover/Number of employees | 695 | 733 | 774 | 629 | 581 | 322 | 435 | 190 | 242 | 510 | 632 | 119 |
| Current Liquidity rate | Unit value | Current assets/current debts | 3.37 | 3.37 | 2.38 | 0.28 | 0.23 | 1.47 | 1.61 | 1.19 | 1.25 | 1.17 | 1.35 | 1.34 |

*Source: Analysis SNN, EMIS*

Taking into account the high value of the electrical energy sold during 2010-2012 on the regulated market (see Table 3), the values of the economic and financial indicators of SNN did not show significant increases. However, in this period, the EBIT level and the EBIT margin (in average: 165 mill. lei respectively 10,4%) are significantly superior to those registered by CE Oltenia during 2010-2012 (in average: 121 mill. lei respectively 8%) and by Hidroelectrica (161 mill. lei respectively 5,29%).

The average of the operation expenses necessary to the achievement of the turnover registered by SNN during 2010-2012, of 89,76%, reflects the financial performances similar to the results of Hidroelectrica (90%) and clearly superior to the results of CE Oltenia (122%). Furthermore, labor productivity at the SNN level (in average 735) is better in comparison with the results of Hidroelectrica (in average 605) and CE Oltenia (in average 350).

The level of the current liquidity of SNN during 2010-2012 was high, indicating a good use of the working capital and of the financial resources and a positive impact on the available cash. The current liquidity rate was superior to a reference indicative value of 2, but also to the value of the same indicator of Hidroelectrica (0,25) and of CE Oltenia (1,34).

4.2.1. The comparative analysis with other international level energy producers

Comparative analysis- SNN, Ontario Power Generation, Hydro-Quebec, EDF Group, E.ON AG, Enel AG, RWE Group and Iberdrola Endesa Group

The analysis of the performances of SNN as opposed to those of certain international energy producers was conducted with two companies operating nuclear reactors similar to Units 1 and 2, namely Ontario Power Generation and Hydro-Quebec (Figure 23) and with five of the largest energy companies in Europe which operate nuclear reactors integrated within the activity of electrical energy production (Figure 24). As a consequence, the financial performances of these

companies are not totally comparable to those of SNN especially considering the fact that they operate on other markets and use different energy production capacitiesof.

Although during 2010-2012, the results of SNN compared to the analyzed companies were inferior from the point of view of the level of the operation expenses as opposed to the turnover (89,76% compared to 81,9%) and to the labor productivity , however, the EBIT margin, in average 10,4%, is not significantly inferior to the average of 12% of the same indicator in the analyzed companies (except for Hydro-Quebec). The current liquidity ratio of SNN (in average 3) is significantly superior compared to the average of the other companies, of 1,08.

We also emphasize the fact that the results of SNN (the EBIT margin of 10,4% as opposed to the average of 12%) were obtained under the conditions in which the largest part of the electrical energy was sold in regulated regime and, as a consequence at inferior prices to those on the international competitive markets. Furthermore, compared to SNN, the capacities of energy production capacities used by the analyzed companies (EDF Group, E.ON AG, Enel AG, RWE Group, Iberdrola Endesa Group) allow to optimize production, flexibility and lead to their improved financial performances.

Figure no. 23: Economic and financial indicators of SNN, Ontario Power Generation, Hydro-Quebec and EDF

| Indicators | Measuring unit | Formula | Nuclearelectrica | | | Ontario Power Generation | | | Hydro-Quebec | | | EDF Group | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2010 | 2011 | 2012 | 2010 | 2011 | 2012 | 2010 | 2011 | 2012 | 2010 | 2011 | 2012 |
| Turnover | Mill. RON | Row 01 Ballance Form 20* | 1,515 | 1,588 | 1,853 | 16,579 | 15,588 | 16,431 | 38,563 | 38,167 | n/a | 274,991 | 276,765 | 324,080 |
| Operating expenses as to turnover | % | Operating expenses/Turnover | 88,46% | 89,94% | 90,88% | 79,39% | 82,57% | 85,31% | 90,40% | 91,50% | n/a | 67,74% | 69,21% | 67,65% |
| EBIT | Mill. RON | Operating profit | 179 | 163 | 153 | 2,363 | 1,432 | 1,913 | 15,572 | 15,733 | n/a | 38,718 | 36,675 | 41,151 |
| EBIT margin | % | EBIT/Turnover | 11,83% | 10,24% | 9,21% | 14% | 9% | 12% | 40,38% | 41,22% | n/a | 14,08% | 13,25% | 12,70% |
| Labor productivity | Thou. RON/ employee | Turnover/Number of employees | 695 | 733 | 774 | 1,405 | 1,367 | 1,516 | 1,670 | 1,696 | n/a | 1,761 | 1,823 | 2,094 |
| Current liquidity rate | Unit value | Current assets/current debts | 3,37 | 3,37 | 2,88 | 1,18 | 1,58 | 1,91 | 0,61 | 0,90 | n/a | 1,28 | 1,33 | 1,17 |

**for entities outside Romania, the turnover was excerpted from Profit and Loss Account*
*Source: SNN, Annual Reports and Financial Statements of analysed companies outside Romania (converted in RON using the medium annual exchange rate RON/CAD and RON/EUR published by BNR)*

Figure no. 24: Economic and financial indicators of E.ON, ENEL, RWE, Iberdrola Endesa

| Indicators | Measuring unit | Formula | E-ON AG | | | Enel AG | | | RWE Group | | | Iberdrola Endesa Group | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2010 | 2011 | 2012 | 2010 | 2011 | 2012 | 2010 | 2011 | 2012 | 2010 | 2011 | 2012 |
| Turnover | Milll. RON | Excerpt from Income Statement | 390,944 | 478,688 | 588,606 | 308,910 | 336,972 | 378,265 | 224,472 | 219,040 | 237,180 | 128,111 | 134,121 | 152,400 |
| Operating expenses as to turnover | % | Operating expenses/Turnover | 106,51% | 113,77% | 105,08% | 76,56% | 78,20% | 80,33% | 85,73% | 91,27% | 91,67% | 84,83% | 85,92% | 86,96% |
| EBIT | Mill. RON | Operating profit | 39,800 | 23,046 | 31,312 | 47,395 | 48,168 | 34,467 | 29,650 | 21,840 | 18,907 | 20,334 | 19,092 | 19,504 |
| EBIT margin | % | EBIT/ Turnover | 10% | 5% | 5,32% | 15% | 14% | 9,11% | 13% | 10% | 7,97% | 16% | 14% | 12,8% |
| Labor productivity | Thou. RON/ employee | Turnover/ Number of employees | 4,594 | 6,068 | 8,166 | 3,945 | 4,472 | 5,132 | 3,168 | 3,039 | 3,378 | 4,322 | 4,088 | 4,863 |
| Current liquidity rate | Unit value | Current assets/ current debts | 1,23% | 1,10% | 1 | 1,06% | 0,88% | 1,08% | 1,07% | 0,93% | 1,02% | 1,02% | 1,14% | 1,13% |

**Source: Annual Reports and Financial Statements of analysed companies outside Romania (converted in RON using the medium annual exchange rate RON/CAD and RON/EUR published by BNR)*

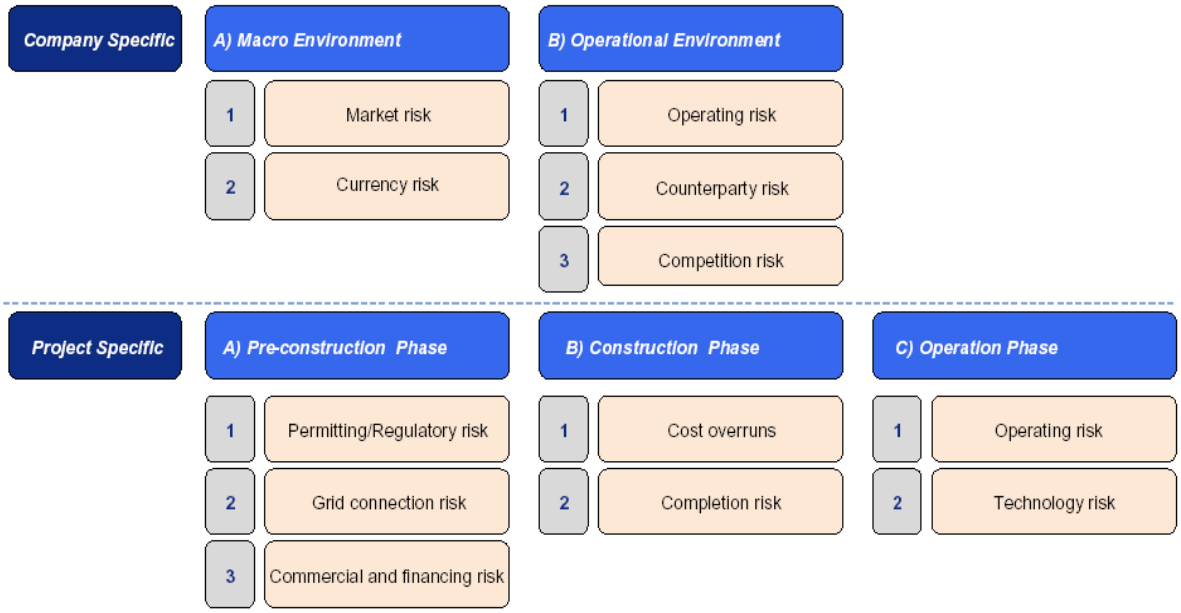
## 4.3 Risk analysis regarding the current activities and the business strategy

SNN established its main medium and long term strategies taking into consideration mainly the maintenance of the nuclear safety, the continuous growth and the increase of the profit of its stakeholders, the risk analysis of the activity being important in this context.

On medium term (2013-2017) the sale activity of the electrical energy will be influenced by the evolution of the energy prices and of the gradual liberalization of the market. On medium and long term, the activity of SNN will be influenced both by the evolution of energy prices and the investment projects which the Company develops: Extension of the life duration of Unit 1, participation in the development of Units 3 and 4 and/or participation in the development of CHEAP Tarnita-Lapustesti.

As a consequence, the main risks as far as the activities and the objectives of SNN are concerned (risks concerning the market and the Project Development) were analyzed. The figure below contains the overview of the main objectives, the critical elements with respect to the implementation of strategies and the risks the Company will face.

Figure 18. Overview of the main risks



### 4.3.1. External environment specific risks - the macroeconomic environment

The future profitability of the Company's operations and its project feasibility are dependent on the market conditions in Romania and the neighboring countries. The main macroeconomic environment risk factors are grouped into three categories:

Market Risk

Market risk category includes general market risks and risks associated with the electricity market in Romania. This risk combines the effects of macroeconomic performance, development of the electricity market and electricity price volatility. Analysis of market risk has a direct impact on the overall performance of the Company.

Legal risk

Legislative risk is represented by the changes that may occur within the legal area in Romania. Possible changes may relate to the imposition of new taxes by local and central authorities and / or the authority that regulates nuclear power. The effect of the legal risk may be the unanticipated increase of the production costs, which could lead to lower profit margins.

Currency risk

Currency risk is determined by the current activities of the Company given that some of them involve currency transactions. These transactions include the reimbursement of the loans contracted for financing of Unit 2 (in EUR, USD and CAD), technical assistance and contributions for the decommissioning of the two units, which are denominated in foreign currency.

**Operational environment**

Company's current operations are influenced by various additional risk factors that have a major impact on current profitability. The main risk categories are the following:

Operational Risk

Operational risks are associated with the Company's activity, with its ability to generate revenues and maintain competitive operating margins. These risks depend on the Company's ability to produce the necessary quantity of electricity which it has undertaken to supply through contracts on the regulated and competitive markets, taking into account both planned and unplanned outages of Units 1 and 2. Taking into account production profile, nuclear energy is generally less exposed to operational risks than electricity based on natural gas, coal, hydro energy and renewable sources of energy. Considering that raw materials (heavy water, uranium and process water) are purchased from unique suppliers without a clear methodology of pricing, there is also a risk that the costs of production may vary. However, this variation has a moderate impact, considering the relatively small share of these costs (excluding depreciation) in the total the operating costs of a nuclear power plant.

The operational risk also includes the potential termination of contracts concluded on the competitive market due to the reduction of the activity of existing customers, which will lead to

lower demand for the electricity produced by Units 1 and 2. In addition, prolonged and strong drought and unexpected technical problems may have a major impact on electricity production, as a result of the unplanned outages.

One of the factors that can mitigate these risks is to take into consideration negotiating long-term contracts with predefined prices and specific commercial terms regarding the liquidation and damage, in order to reduce the volatility of collecting period by providing the necessary cash flow for operations and investments. This also depends on the effective regulations that can allow or not the conclusion of such contracts. The available price mechanisms may include " take or pay " contracts types and "capacity fee" contracts to cover the fixed costs recorded by SNN (mainly investment expenses) and a " variable price" to be covered by other costs (fuel, water, etc. . ) .

Other factors that reduce operational risk can be represented by the Company's ability to plan outages during the periods when the electricity price decreases or the Company's ability to conclude agreements to support production when units do not produce enough electricity due to unplanned outages.

**Counterparty risk**

*Counterparty risk* is the risk of business partners that do not act in compliance with the terms and conditions specified in the signed agreements. In the current financial crisis, this risk can cause significant financial difficulties to customers, which will be reflected in the increase of the collecting period of receivables, or in the worst case scenario, in the customer's bankruptcy (which determines an increase in the general expenses). However, historically, the Company concluded in the last three years more than half of its contracts on the regulated market. In the context of market liberalization, SNN will seek to conclude energy sale contracts including long term contracts, for a large part of its production capacity, this being a prerequisite for ensuring the cash flow required by the credit institutions, especially given the additional funding needed for the investment development. In order to mitigate this risk, the Company has a policy of selecting customers based on their credit risk, seeking to conclude contracts only with solvent commercial agents.

**Competitive risk**

The competitive risk must be analyzed in the context of ongoing liberalization of the market that facilitates SNN's access to selling its production at higher prices on the free market. Regional integration is also envisaged. SNN will be exposed to the increasing regional competition and future improvements, refurbishment, extensions and new constructions, expected to be made by manufacturers of the national electricity market. However, as a specific characteristic of nuclear energy, the cost of nuclear power is expected to remain below the cost of production facilities that rely on coal or natural gas, which are very sensitive to the increase of the fuel price and to the cost regarding the compliance to regulations on environmental protection (e.g. carbon dioxide emissions). At the same time, the renewable energy projects are very volatile in terms of production, the lack of projections on the availability of fuel sources (e.g. wind, solar energy). Hydropower, although it is less expensive and currently represents 25-30% of Romania's electricity production depends on water availability. In conclusion, nuclear power produced from nuclear sources has the lowest production cost, out of the electric power sources with available, predictable

and stable fuel, **Table 25: Analysis of company-specific risk factors**

| No. Risk category[2] | Level[3] | Impact | | Mitigation method |
|---|---|---|---|---|
| **1. Macroeconomic environment** | | | | |
| 1.1 Market risk | Medium | Strong | - | -price mechanism allowing elements of the "take-or-pay";<br>-barter type arrangements on electricity or long-term bilateral contracts, with fixed prices or price formulas defined; |
| 1.2 Legal risk | Medium | Moderate | - | -using the best technologies to ensure environmental sustainability, continuous communication with the authorities; |
| 1.3 Currency risk | High | Strong | - | - appropriate hedging strategies could include currency forward transactions, swaps, currencies, natural hedging, etc.. |
| **2. Operational environment** | | | | |
| **2.1 Operational risk** | | | | |
| 2.1.1 Revenues | High | Strong | - | -negotiating contracts for a period exceeding one year with default prices;<br>-strong customers' assessment policy;<br>- export opportunities assesment. |
| 2.1.2 Regarding costs | High | Moderate | - | -conclusion of contracts to support production when power plants are shut down, anticipating, thus the unplanned outages. |
| 2.1.3 Regarding dimension | Medium | Moderate | - | -exploring export possibilities to neighbor countries |
| 2.2 Counterparty risk | Medium | Moderate | - | -complete and detailes long term contracts<br>-applying a rating system for the parties with which bilateral contracts are concluded<br>-bank guarantee |
| 2.3 Competitive risk | Medium | Moderate | - | -applying a policy of cost control |

2 *"Risk category" defines the probability, high, medium and low;
3 ** "Impactcategory" defines the effect on company's performance: strong, moderate, weak.

## 4.4 PESTEL Analysis

The external environment or the macro-environment, in which the company operates, takes into consideration a range of external factors that can differently influence the Company on a long term The assessment of the impact that changes in the external environment may have on the Company is of major importance, all the more, the evolution of external factors cannot be controlled by the Company, and influences that the company can cause, in its turn, on these factors is insignificant.

The following figure shows the analysis of the main factors of influence in which the company operates.

Table 26: Analysis of the main factors affecting the company's business

| Influence factors | Impact |
|---|---|
| **Policy** | |
| Political stability - parliamentary elections in Romania took place at the end of 2012 rusulting in a governmental majority, which has a positive influence on political stability | ↗ |
| Effective legislation on internal market - the energy law was recently amended, and among its provisions it is mentioned that full liberalization of the market will take place until 2017, when all electricity will be traded in the competitive market | ↗ |
| European legislation – the integration of national energy market at European level will have a positive impact on domestic producers which will be able to export energy on the markets where the price for the end consumer is higher than that in Romania | ↗ |
| Government policies – there are discussion about a new energy strategy of Romania that will focus on the production of nuclear power | ↗ |
| Country's foreign policy - foreign policy declared by the government is a pro-European one and of integration at all levels. Also there are no open conflicts with none of the regional partners | ↗ |
| **Economic** | |
| Economic situation - Romania is still affected by the global economic crisis. But there are signs of economic growth but not at a significant level compared to the period prior to 2008. However, a gradually increase in electricity consumption is expected on the medium and long term | ↘ |
| Implemented austerity measures - although decrease in population income caused by the austerity measureshas no major impact on the demand for electricity, it adversely affects the purchasing power of goods and indirectly energy consuming manufacturing industry. | ↘ |
| Distribution and transmission fees - they are regulated, and the growth rate is not significant, which does not create an additional burden on the end consumers. | ↗ |
| Inflation rate - EIU forecasts low level inflation rate | ↗ |
| Unemployment rate - EIU forecasts low unemployment rates | ↗ |
| GDP - due to the economic crisis a moderate increase in GDP is expected in coming years | ↗ |
| Cost of financing - EIU forecasts a reduction of the financing costs | ↗ |
| Exchange rates and their fluctuations - NBR policy to maintain a stable RON/ EUR exchange rate . Also, Romania intends to join the Euro area as soon as possible | ↗ |
| Cost and the qualification of the workforce – Romania does not lack skilled labor force. This can lead to a possible labor migration to more developed countries once Romania enters the Schengen area | ↗ |
| **Social** | |
| Demographic structure - Romanian population is decreasing according to statistics. Also Romania's entry into the Schengen area may contribute to labor migration abroad. | ↘ |
| Population structure backgrounds - in Romania's population a large part of the population still lives in the rural areas, compared to other European countries, which contributes to a relatively low consumption of electricity | ↘ |
| Evolution Lifestyle evolution – lifestyle has improved considerably after 1989, particularly during periods of accelerated growth, with positive impact onelectricity consumption | ↗ |
| **Technological** | |
| Governmental Investment policy - from the beginning of the economic crisis, governmental investments decreasedand austerity policy is likely to continue in the next period. | ↘ |
| Replacement rate of electronic equipment - as outdated and obsolete, old equipment | ↘ |

| | |
|---|---|
| is replaced with newer and more energy efficient one, which impacts electricity consumption. | |
| **Ecological** | |
| Environmental policies and environmental protection – the compliance of coal energy based energy producers with the environment legislation is of major impact on electricity market, leading to a significant investment required in industry and energy price increase, with impact on consumptions especially the industrial one. | ↗ |
| Consumption and energy sources - because of the targets assumed by Romania regarding the share of Romania renwable based energy consumption. electricity production based on these technologies has seen a boom in the recent years and will continue to grow in importance. | ↘ |
| **Legal** | |
| Effective legislation and regulations relating to the energy sector - in Romania the electricity market is regulated by ANRE. After 2017, the electricity market will be fully liberalized, leading both to the increase of competitiveness but also to the growth of electricity producers' revenues. | ↗ |
| Tax legislation - Romania maintains the flat tax which contributes to business growth, however the tax is relatively unstable and susceptible to change. | ↘ |

## 4.5 SWOT Analysis

| Strengths |
|---|
| • High operational stability and performance indicators (low production costs) that increase the competitiveness of the company;<br>• Expertise in nuclear energy production industry and sales activities;<br>• Stable relationships and credibility in the business environment;<br>• The production process is based on a new and efficient technology, bundles of fuel are produced internally;<br>• Reliable sources of domestic raw materials and a reduced dependency on fuel need (operation and maintenance cost predictability);<br>• Membership in international organizations to support and develop knowledge;<br>• Lack of C02 emissions. |
| **Weaknesses** |
| • A large part of its production is sold on the regulated market where the price is lower;<br>• Significant exposure to the exchange rate due to the current credit agreement, which negatively affects the financial position;<br>• Negotiating power of suppliers (supplier for raw materials: heavy water, process water |

| |
|---|
| and uranium) is high, |

| Opportunities |
|---|
| • It is expected that the energy market will be deregulated and large part of the production to be sold at higher prices; |
| • Hedging opportunities for differences in exchange rate; |
| • Consumption growth will determine the need for investment, the existing production capacities in Romania being outdated; |
| • forecasted increase in energy prices; |
| • Significant expertise in nuclear energy production (CANDU); |
| **Threats** |
| • Maintaining significant sales on regulated market in the future, even if Law no. 123/2012 establishes total deregulation until 2018. |
| • Changing international opinion on nuclear energy following the recent negative events in the field; |
| • Climatic and hydrological events that could cause unplanned outages; |
| • The economic crisis; |
| • Market liberalization and increase in competition; |
| • Variability of electricity prices; |
| • Strict regulations on licensing and operation of nuclear power plants; |

**Strengths**

Operational performance and stability that have been obtained so far are among the strengths of SNN. The nuclear power plant has consistently recorded an above average capacity factor. This coupled with proven expertise in the nuclear power industry and energy sales activities have ensured increased competitiveness for the Company on the Romanian energy market. The technology used reflects the highest standards in the industry (CANDU technology), and the performance achieved places the Company in top positions within the international rankings.

The success and reputation have helped develop strong relationships and business credibility. The company (that uses fuel of low intensity) receives raw materials produced mainly at nationwide level (uranium/ fuel bundles and heavy water). This ensures stability and cost control and activity predictability. Affiliation and collaboration with international organizations in the nuclear field and CANDU technology provide support and exchange of information and effective knowledge when

needed. Romanian State, as a major shareholder and decision maker in terms of local legislation, has generally supported the Company in the development of its projects.

**Weaknesses**

A specific and constant weakness that the Company has, for now, is the obligation to sell a large part of its production on the regulated market, at prices set by ANRE. This affects profitability by decreasing revenues due to low prices in comparison with the constant monthly cost (because most costs are fixed) .

However, the situation is expected to improve with market liberalization. Another feature of the financing structure of SNN is the exposure to exchange rate fluctuations in the currency in which the company has its loans, which has a major influence on the profitability of the Company. Also, the Company is imposed raw material suppliers by the State for heavy water and uranium, while other suppliers benefit of a higher power of negotiation due to their uniqueness (technical consultancy, technological water) .

**Opportunities**

An important opportunity for the company is represented by the fact that production sold on the regulated market is expected to have a constant downward trend in the coming years, being completely eliminated by early 2018. Consequently, electricity will be sold at higher prices and, therefore, higher margins of profit will be obtained. Also, profitability could be improved by applying more effective hedging strategies against foreign exchange exposures for loans in various foreign currencies. Hedging methods may consist, to the extent possible, in developing a natural hedging strategy, for example by matching the currency cash flow to the Company to that from the Company (for example, sales in EUR in line with expenses expected to be in EUR). Significant expertise on nuclear technology can increase SNN role in the expansion of nuclear energy production and the emergence of new major players on the national market for electricity. The forecast increase in electricity consumption for energy will cause nationwide of an increase in the need to invest in order to develop the existing production capacities and to build new capacity.

**Threats**

An important threat to the Company regarding its potential for income is the possibility that ANRE does not significantly decrease the amount of energy sold on the regulated market, despite the ongoing existing legal framework. Consequently, SNN may not benefit from high prices of electricity or it may not benefit from these prices as soon as expected. As it concerns income, an economic crisis (caused by changing economic conditions nationally and internationally on short and medium term ) and a negative trend of climatic and hydrological conditions (as those recorded in the second half of 2011) can influence price variability, sold volumes or unplanned outages. At the international level (which may be reflected locally), the decrease of the acceptance level of the population for the nuclear projects could affect the future projects of development.

# 5. THE OBJECTIVES AND THE ADMINISTRATION PLAN

The objectives of the administration plan are quintessential to the analysis of the current situation of SNN as well as to the opportunities, the risks and the evolution envisioned for the economy and the electricity market, equally focusing on the mission, the vision and the values of SNN.

## 5.1. Mission, vision, values

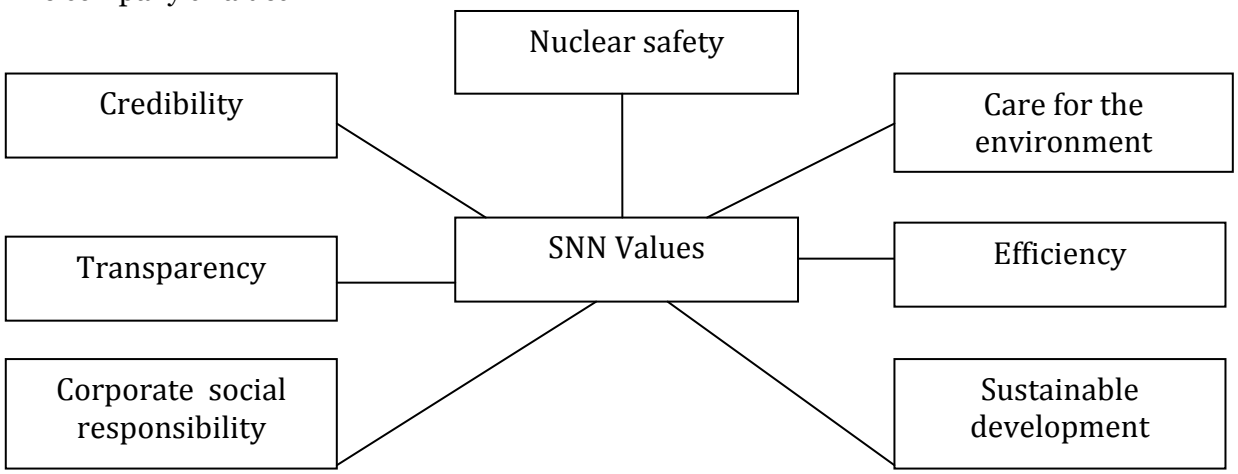
The company's mission

SNN's mission resides in producing electrical and thermal energy by means of nuclear procedures, in developing the nuclear energy as well as in producing nuclear fuel in observance of maximum safety conditions, in the spirit of economic efficiency, with care towards the people and the environment.

The company's vision

The company's vision consists in obtaining the acknowledgement of the Company as a main contributor to the security of electricity supply required to meet the demands and consequently as an economic stability factor in tomorrow's world.

The company's values




## 5.2. Objectives

Following the analysis undertaken within the previous chapters, the objectives had been established based on the anticipated opportunities, risks and evolution of the electricity market, while taking into consideration specific aspects such as:

From the commercial perspective:

- The electricity market is undergoing a process of gradual de- regulation that is estimated to complete by means of full liberalization by the end of 2017, aspect that will facilitate the selling of some larger amounts of electricity the competitive market at higher prices than the regulated ones.

- Once the economy will recover and re-start growing, yet under the influence of the effects of the financial crisis, a gradual increase of electricity consumption is expected

From an operational and financial perspective:

- The production process is based on an efficient, internationally proven technology having a high level of nuclear safety and the SNN personnel holds an over 20 years/reactor operation experience (CANDU) .

- Unit 1 and 2 are among the most efficient nuclear plants in the world having a gross capacity factor above the international average in the nuclear industry (79%)

- The supply of raw materials is secure, the fuel dependency is low and the average of the nuclear fuel-related costs is relatively low and stable within the entirety of costs.

- The financial expenses (as a result of the exchange rate fluctuation) the taxes as well as some operating costs (such as those regarding the purchase of uranium and of the technological cooling water) are not under SNN's control.

From the point of view of the corporate governance, following the quotation of SNN shares, a boost in transparency is required just like the efficiency in reporting to the investors and the setting up of some specific structures and committees.

Therefore the main objectives of the Board of Administration for the mandate period are as follows:

- operating the nuclear units in nuclear ensuring safety and protection for personnel, population, environment and the production assets

- maintaining the production capacity above the present average level within the industry

- meeting the main objectives concerning the investments

- boosting the ratios concerning the financial efficiency of the Company.

## 5.3. Management Plan

The Management Plan shall be monitored in accordance with the provisions of Emergency Government Ordinance 109/2011.

If circumstances or events beyond the control of SNN so require, the Management Plan shall be amended/varied/supplemented accordingly, to comply with the level of the performance indicators.

5.3.1. Measures in view of achieving the targets

In relation to the operation of the **nuclear units under nuclear safety and security conditions for the employees, population, environment and manufacturing equipment:**

- To maintain the maximum availability of technological and safety-feature systems;

- To improve/maintain a high level of professional training for the personnel operating the two nuclear installations;

- To maintain the volume of radioactive discharge into water and air below the regulated level;

- To maintain memberships to the international organizations in the sector of nuclear energy and, if applicable, memberships to other organizations;

- To set up a nuclear safety oversight board.

In view of maintaining the electricity generation capacity **above the average level in the industry:**

- To prepare maintenance and repair plans meant to increase the feasibility of equipment and systems and the operation of the nuclear units in a safety and secure manner;

- To implement management programs for the service life of the components and systems of Cernavoda NPP (reactor, steam generator, turbo-generator, etc.)

- To carry on the programs for the replacement of the components and equipments used and decommissioned;

- To maintain the usage coefficient for the installed power above the average level in the nuclear industry;

- To conduct, in a timely manner and under conditions of the highest quality, the mandatory annual inspection programs in relation to vital nuclear components (fuel pipes, heat exchangers, etc.)

- To initiate actions in order to procure uranium, through the initiation of market studies, followed by offers from leading suppliers (please see Romania's Energy Strategy for 2007-2020, specifying that the existing uranium resources should be supplemented by alternative sources).

**In relation to the achievement of the major investment targets:**

- To set forth and monitor an investment strategy at the level of SNN, able to ensure the support necessary for the operation of the production units under conditions of maximum nuclear safety and security;

- To identify the targets required to be promoted and to prepare a long-term priority list in a realistic manner, depending on SNN's capabilities of allocating the necessary technical, human and financial resources;

- To conduct the necessary feasibility study and to initiate works on the major investment targets.

In relation to the improvement of the **indicators referring to the Company's financial performances:**

- To set forth the trade policy and strategy able to ensure predictability and stability of revenues, in consideration of: supporting the production activity and the ability to finance major investment projects; ensuring the Company's future revenues against the fluctuations of electricity

price (long-term agreements); gradual market de-regulation by 2018;

- To monitor and improve the internal control system, including compliance with the provisions of OMFP 946/2005;

- To take over and extend the integrated management model, also in relation to the Headquarters and FCN Piteşti Branch, entailing direct results on cost efficiency increase;

- To improve the procurement process in respect of products, services and works by means of dynamic and priority planning, to timely and accurately ensure the necessary amounts of products and services, by means of concluding long-term agreements intended to ensure continuity of business;

- To optimize production costs for nuclear fuel and electricity by judicious planning and continuous monitoring of operation and maintenance expenses.

Reduce overdue receivables (Row 55 Form BVC), reduce overdue obligations (Row 04 Form 30 of the Balance Sheet)

5.3.2. Performance Indicators

Table 27 sets forth the performance indicators for the members of the Board of Directors, in view of monitoring targets' achievement:

Table 27 – Performance indicators for directors

| Item | Target/Performance indicators | Measurement | Unit of Measuret | Weigh | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|---|---|---|---|
| Improvement of the Company's financial performance | | | | | | | | | |
| 1 | Annual turnover | Row 01 form 20 Balance Sheet | RON million | 0.2 | 1,892 | 1,983 | 2,077 | 2,181 | 2,290 |
| 2 | Annual operation profit | Operation profit | RON million | 0.2 | 227 | 293 | 343 | 394 | 449 |
| 3 | Overdue payments | Row 03 Code 30 Balance Sheet | RON million | 0.15 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| Achievement of major investment targets | | | | | | | | | |
| 4 | Reaching the annual value of the investment plan (in accordance with Table 28 and the annual budgets) | Value of implemented investments/Value of planned investments | % | 0.15 | Min. 90% | Min. 90% | Min. 90% | Min. 90% | Min. 90% |
| Maintain the electricity generation capacity above the average level in the industry | | | | | | | | | |
| 5 | Gross capacity Factor (aggregated as of year start) | Achieved production MWh/Maximum theoretical production MWh | % | 0.15 | Min. 80% | Min. 80% | Min. 80% | Min. 80% | Min. 80% |
| Operation of nuclear units on ansuring safety and protection for the employees, population, environment and for the manufacturing equipment | | | | | | | | | |
| 6 | No operating events above level 1 on the International Nuclear Event Scale, as concerns the degradation of deep defense barriers, site or off-site impact | CNE Cernavoda | | 0,15 | Maximum level 1 | Maximum level 1 | Maximum level 1 | Maximum level 1 | Maximum level 1 |

In substantiating the indicators set forth in the table above, the following considerations were envisaged:

- To minimize the amount sold on the regulated market from 50% in 2013 down to 10% in 2017 (2014-40%, 2015- 35%, 2016-25%);

- To increase the price of electricity sold on the regulated market by the forecast inflation rate, respectively from RON 142 / MWh in 2013 to RON 157 / MWh in 2017;

- Variation in the price of electricity sold on the competitive market, respectively from RON 186 / MWh in 2013 to approximately RON 197 /MWh in 2017;

- Gradual increase of turnover, so that to reach an increase by approximately 30% as compared to 2012, at the end of the reference period;

- At the end of the period, the gross profit to increase approximately 3.6 times, as compared to 2012;

- As major investment targets, significant investments in terms of nuclear security and sustainable development were selected, planned to take place in the following four years (please see Table 10). Throughout the period, the major targets shall be updated /supplemented depending on the Company's needs;

- The arithmetic average of the gross capacity factor of the two units, aggregated from the year start, has a target value higher than the average achieved by the electricity producers in the nuclear industry (78%), and for the amounts of electricity, the production delivered in the past 3 years and scheduled down times of approximately 30 days/ year were taken into consideration (for the period 2013 - 2017);

- Operational events classified above level 1 on the INES scale exceed the abnormality category and fall under the incident category.

The indicators described above also form a component part of the management agreement for each member of the Board of Directors.

Table 28 – Major investment targets (RON thousand)

| Project code | Project name/project target | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|---|
| PJ-05-016 | **Intermediary Dry Spent Fuel Storage (including SICA U#2)** | **44,335** | **48,563** | **18,910** | **18,910** | **6,910** |
| | Complete the building for the modules in row 1, continue with module MACSTOR 400 and conduct in stages the construction works for this type of module in row 2 DICA, arrange and commission the loading bay for spent fuel in unit 2, together with the implementation works on the corresponding physical protection system. | | | | | |
| PJ-04-001 | **Upgrade and extend physical protection system** | **21,505** | **42,743** | **63,415** | **35,636** | |
| | Conduct designing and construction and installation works in order to build a new access control point at the railway gate, revamp and supplement the Physical protection system - prepare, approve and authorize the performance documents, procurement of equipment and installation, together with the performance or works deriving from the study on maintaining the operability of critical installations in the vital structures, in case of threats beyond design basis.<br>During this period, physical protection works shall also be conducted in relation to the development of U#5 as post-Fukushima facilities area. | | | | | |
| PJ-11-006 | **Improve the response of Cernavoda NPP, respectively of nuclear safety features in case of events beyond the design basis, following the nuclear accident occurred in the nuclear plant of Fukushima 1, Japan.** | **84,665** | **33,925** | **37,636** | **43,605** | |
| | The performance of construction and installation works for the implementation of a emergency filtered depressurization system for the containments of units 1 and 2 of Cernavoda NPP, the implementation of a rupture disk assembly system and of a water addition system to the calandria vault in U1 and U2, the implementation of a monitoring and control system for H2 concentration in the containment atmosphere for | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | U1 and U2, by installing a hydrogen monitoring system in the atmosphere of the containment "HERMETIS" type and by installing a "FR1- 380T" type passive autocatalytic recombiners;<br>Within the same project, the necessary areas and corresponding logistics for the actions required to be taken in case of a major accident shall also be arranged in U5; storage area for mobile equipments necessary in case of severe accident, area necessary for the fire fighters and corresponding equipment, Emergency Control Center on site, area intended for the Physical Protection personnel. | | | | | |
| | **TOTAL** | **150,505** | **125,231** | **119,961** | **98.150** | **6,910** |

## 6. CORPORATE GOVERNANCE

Upon the selection of the new members of the Company's Board of Directors, the implementation of the new corporate governance system was initiated, in accordance with Emergency Government Ordinance 109/2011 to ensure the control and suitable directions for the Company, both at present and throughout the future development of the Company.

In accordance with Emergency Government Ordinance 109/2011, SNN shall have the following consultative boards:

1. Audit board
2. Appointment and remuneration board
3. Nuclear safety board
4. Financing and risk management board

### 1. Audit board

In accordance with Emergency Government Ordinance 109/2011, the audit board shall be mandatory and shall consist of non-executive directors, of which at least one is an independent member.

The main responsibilities of the audit board shall be:

- to assist the Company's officers in fulfilling their responsibilities relating to financial reports, internal audit and financial control,
- to assist the Company's officers in monitoring the credibility and integrity of the financial information reported by the Company;
- to approve the annual plan for internal audit;
- to analyze internal audit reports and to suggest solutions for the identified shortcomings (e.g.: to make recommendations to the Company's officers in relation to the selection, contracting, change and remuneration of the internal auditor and to review the reports submitted by the Company's outsourced financial auditor);
- to monitor the independence and accuracy in accordance with all the applicable laws, both in relation to the internal, and to external financial auditor.

### 2. Appointment and remuneration board

In accordance with Emergency Government Ordinance 109/2011, the nomination and remuneration board shall be mandatory and shall consist of non-executive directors, of which at least one is an independent member,

The main responsibilities of the appointment and remuneration board shall be:

- to submit proposals for the implementation of a new transparent, ethical and efficient corporate governance system, to ensure:

- both an efficient and correct role, and reasonable responsibilities for the Members of the Board of Directors, with the purpose of implementing the Company's Management Plan and to ensure efficient and long-standing relationships between the Company's shareholders, the Members of the Board of Directors, the Company's officers and employees.

- the transparence and accurate presentation of all the information necessary for the Company's shareholders and other third parties;

- the ethics and integrity of the Members of the Board of Directors, of the officers and of the employees;

- to take into consideration the Company's Shareholders' interests and the Company's commitments to the suppliers, client, financial partners, employees;

- to submit proposals for the positions as members of the Board of Directors, to prepare and to submit to the Board of Directors the selection procedure for the applicants to the positions as executive officers and for other management positions;

- to assess the personal and professional skills of the members of the Board of Directors, of the Company's officers and of other individuals holding management positions;

- to assess the trainings and courses necessary for the personnel holding management positions, in order to ensure their continuous professional development;

- to prepare the remuneration policy for directors, officers and individuals holding the other management positions.

3. Nuclear security board

In accordance with Emergency Government Ordinance 109/2011, the nuclear security board is not mandatory.

The main responsibilities of the nuclear security board shall be:

- to endorse and submit the Nuclear Security Policy of SNN to the approval of the Board of Directors;

- to regularly analyze the implementation of the applicable standards and best practices in the nuclear industry in terms of nuclear security;

- to regularly analyze the significant nuclear security concerns in CNE Cernavoda and the radio-protection concerns in FCN Piteşti;

- to monitor the relationships with the regulatory authorities and the manner in which the Company complies with the requirements in the authorizations and licenses for the operation of nuclear installations;

• to monitor the implementation of the Company's improvement and upgrading programs and the manner in which the provisions in the Company's nuclear security policy are observed.

4. Financing and risk management board

In accordance with Emergency Government Ordinance 109/2011, the financing and risk management board is not mandatory.

The main responsibilities of the financing and risk management board shall be:

• to revise and recommend solutions to the members of the Board of Directors in respect of

• Risk management policies;

• The Company's financing programs;

• Annual budgets and their updates.

• Regular monitoring of the Company's financial results;

• To monitor risk management.

In addition, in order to implement best practice standards in the field of corporate governance, the following shall be implemented:

• Observance of best practice standards in the field of corporate governance, by updates to the articles of incorporation;

• Implementation of the provisions of Emergency Government Ordinance 109/2011 and corporate governance standards by ensuring the operability of consultative boards and increasing the transparence level.

**ANNEXES:**

## Annex 1 – Overview of the heavy water market and uranium market

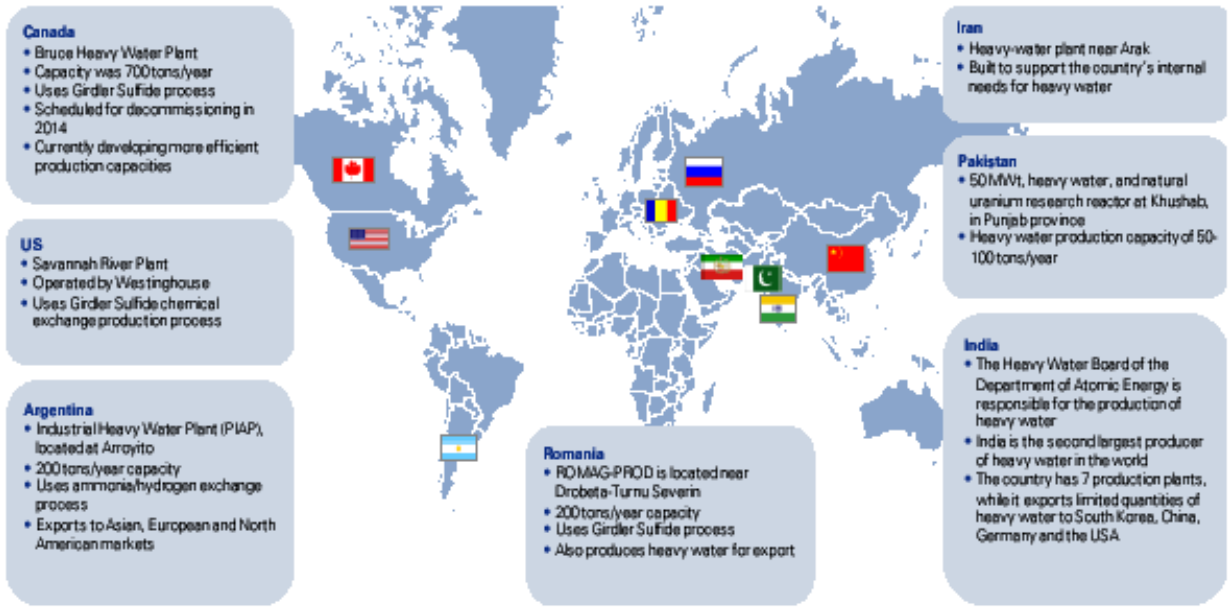
*Heavy water*

Given that there are only a few heavy water manufacturers worldwide, there is no active market for heavy water, allowing for the prices to be easily compared.

Small quantities of heavy water are exported by Canada, Argentina, and India. The price of heavy water ranged, in 2006, between USD 600 and USD 700.

In the past, heavy water has been rented at a rate comparable to its purchase price. This arrangement was used in respect of reactors in Canada, India and China, and afterwards, upon the completion of the reactor's technical service life, the heavy water was returned to the manufacturer.

Figure 19: Manufacturers of heavy water and heavy water resources worldwide




*Overview of the international uranium market*

Australia, Kazakhstan and Russia are the world's largest producers of uranium ore. In Europe, Russia is the largest producer, followed by Ukraine, the Czech Republic, Romania and France. Uranium may be carried as ore or processed, as fuel. Taking into account the high density of processed uranium, carriage costs do not account for a significant part of the fuel price.

Figure 29: Uranium reserves, according to the origin state (U tons) in 2009

| Country | Reserves in U tons | Contribution at worldwide level |
|---|---|---|
| Australia | 1,661,000 | 31% |
| Kazakhstan | 629.000 | 12% |
| Russia | 487,200 | 8% |
| Canada | 468,700 | 9% |
| Niger | 421,000 | 8% |
| South Africa | 279,100 | 5% |
| Brazil | 276,700 | 5% |
| Namibia | 261,000 | 5% |
| USA | 207,400 | 4% |
| China | 166,100 | 3% |
| Ukraine | 119,600 | 2% |
| Uzbekistan | 96,200 | 2% |
| Mongolia | 55,700 | 1% |
| Jordan | 33,800 | 1% |
| Other | 164,000 | 3% |
| Worldwide total | 5,327,200 | 100% |

*Source: World Nuclear Association*

435 reactors with an overall capacity of more than 370 GWe require 77,000 tons of uranium oxide concentrate, containing 65,500 tons of uranium (tU) from mines (or the equivalent of warehouses or secondary sources) per year. The capacity is slightly increasing, and, at the same time, reactors are used more profitably, with higher capacity factors, and a higher level power. Nevertheless, such factors of the fuel demand increase are set off by an increasing efficiency trend, therefore the demand will decrease – along the 20 years. Since 1970, there was a reduction by 25% until today of the uranium demand per kWh in Europe, due to such improvements.

Table 30: Mine production (U tons)

| Country | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|---|---|---|
| Kazakhstan | 3,719 | 4,357 | 5,279 | 6,637 | 8,521 | 14,020 | 17,803 | 19,451 |
| Canada | 11,597 | 11,628 | 9,862 | 9,476 | 9,000 | 10,173 | 9,783 | 9,145 |
| Australia | 8,982 | 9,516 | 7,593 | 8,611 | 8,430 | 7,982 | 5,900 | 5,983 |
| Niger | 3,282 | 3,093 | 3,434 | 3,153 | 3,032 | 3,243 | 4,198 | 4,351 |
| Namibia | 3,038 | 3.147 | 3,067 | 2,879 | 4,366 | 4,626 | 4,496 | 3,258 |
| Russia | 3,200 | 3,431 | 3,262 | 3,413 | 3,521 | 3,564 | 3,562 | 2,993 |
| Uzbekistan | 2,016 | 2,300 | 2,260 | 2,320 | 2,283 | 2,657 | 2,874 | 3,000 |
| USA | 878 | 1,039 | 1,672 | 1,654 | 1,430 | 1,453 | 1,660 | 1,537 |
| Ukraine (East) | 800 | 800 | 800 | 846 | 800 | 840 | 850 | 890 |
| China (East) | 750 | 750 | 750 | 712 | 769 | 1,200 | 1,350 | 1,500 |
| Malawi | | | | | | 104 | 670 | 846 |
| South Africa | 755 | 674 | 534 | 539 | 655 | 563 | 583 | 582 |
| India (East) | 230 | 230 | 177 | 270 | 271 | 290 | 400 | 400 |
| Brazil | 300 | 110 | 190 | 299 | 330 | 345 | 148 | 265 |
| Czech Republic | 412 | 408 | 359 | 306 | 263 | 258 | 254 | 229 |
| Romania (East) | 90 | 90 | 90 | 77 | 77 | 75 | 77 | 77 |
| Germania | 77 | 94 | 65 | 41 | | | | 52 |
| Pakistan (East) | 45 | 45 | 45 | 45 | 45 | 50 | 45 | 45 |
| France | 7 | 7 | 5 | 4 | 5 | 8 | 7 | 6 |
| Worldwide total | 40,178 | 41,719 | 39,444 | 41,282 | 43,798 | 51,450 | 54,660 | 54,610 |
| Tons $U_3O_8$ | 47,382 | 49,199 | 46,516 | 48,683 | 51,651 | 60,675 | 64,461 | 64,402 |

*Source: World Nuclear Association*

In 2011, eight companies account for 85% of the world's uranium production (U tons).

Table 31: Uranium production

| Company | U tons | % |
|---|---|---|
| KazAtomProm | 8884 | 17% |
| Areva | 8790 | 16% |
| Cameco | 8630 | 16% |
| ARMZ - Uranium | 7088 | 13% |
| Rio Tinto | 4061 | 8% |
| BHP Billiton | 3353 | 6% |
| Navoi | 3000 | 5% |
| Paladin | 2282 | 4% |
| Other | 8521 | 15% |
| Total | 54610 | 100% |

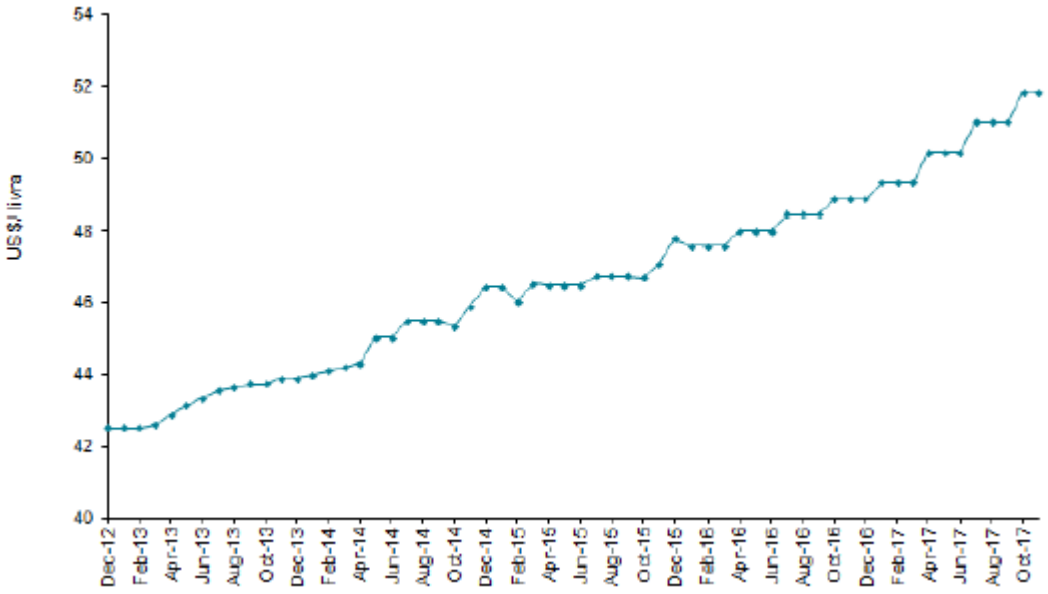
*Source: World Nuclear Association*

At worldwide level, the uranium price is quoted on a daily basis in the Chicago Mercantile Exchange and New York Mercantile Exchange. The true uranium quotation price is currently USD 42.5$. "Prices" apply only to the marginal trading from one day to the next and usually accounts for less than 20% of the procurement. Most trade takes place by means of 3 -15 year long term agreements, with manufacturers selling directly to the utilities sector. Nevertheless, the price set forth in these agreements is often dependant on the price displayed at the delivery time.

In order to take into consideration a future trend of the uranium price at an international level, the futures agreement price listed on the Chicago Mercantile Exchange was taken into account. The chart below sets forth the uranium price deemed to have an increasing trend in the following years, reaching a level of USD 51.85/pound in 2017, therefore witnessing an increase of approximately 22% as compared to the current price of USD 42.5 / pound.

Figure 20: CME future prices ($/pound)

CME future prices ($/pound)




*Source: www.cmegroup.com*

## Annex 2 – Nuclear reactors worldwide

Table 32: Nuclear reactors worldwide

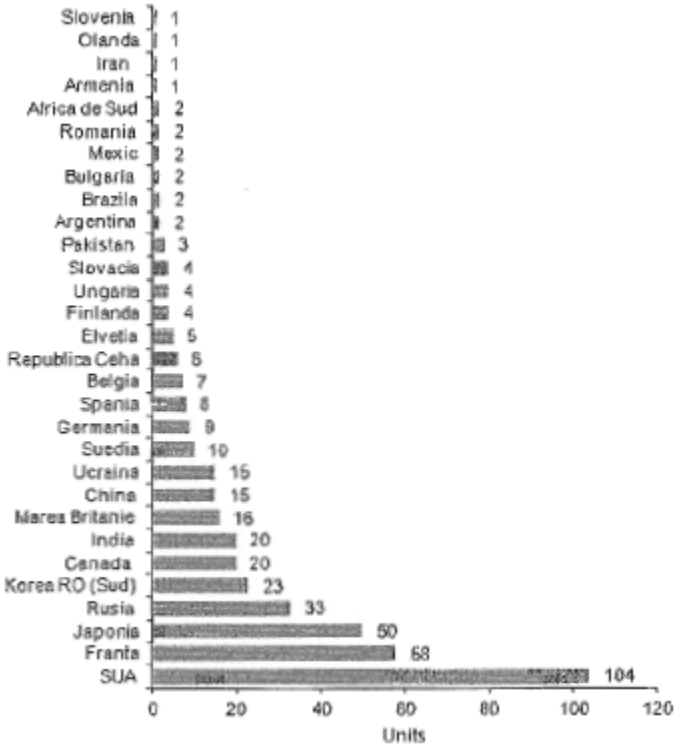
| COUNTRY | NUCLEAR ENERGY GENERATED 2011 | OPERATING REACTORS | | REACTORS BEING BUILT | | PLANNED REACTORS | | PROPOSED REACTORS | | URANIUM DEMAND 2011 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | November 2012 | | November 2012 | | November 2012 | | November 2012 | | |
| | Billion KWh | no. | net MWe | No. | gross MWe | no. | gross MWe | no. | gross MWe | |
| Argentina | 5.9 | 2 | 935 | 1 | 745 | 1 | 33 | 2 | 1400 | 124 |
| Armenia | 2.4 | 1 | 378 | 0 | 0 | 1 | 1060 | | | 64 |
| Bangladesh | 0 | 0 | 0 | 0 | 0 | 2 | 2000 | 0 | 0 | 0 |
| Belarus | 0 | 0 | 0 | 0 | 0 | 2 | 2400 | 2 | 2400 | 0 |
| Belgium | 45.9 | 7 | 5943 | 0 | 0 | 0 | 0 | 0 | 0 | 995 |
| Brazil | 14.8 | 2 | 1901 | 1 | 1405 | 0 | 0 | 4 | 4000 | 321 |
| Bulgaria | 15.3 | 2 | 1906 | 0 | 0 | 1 | 950 | 0 | 0 | 313 |
| Canada | 88.3 | 20 | 14169 | 0 | 0 | 2 | 1500 | 3 | 3800 | 1694 |
| Chile | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4400 | 0 |
| China | 82.6 | 15 | 11881 | 26 | 27640 | 51 | 57480 | 120 | 123000 | 6550 |
| Czech Republic | 28.7 | 6 | 3764 | 0 | 0 | 2 | 2400 | 1 | 1200 | 583 |
| Egypt | 0 | 0 | 0 | 0 | 0 | 1 | 1 000 | 1 | 1000 | 0 |
| Finland | 22.3 | 4 | 2741 | 1 | 1700 | 0 | 0 | 2 | 3000 | 471 |
| France | 423.5 | 58 | 63130 | 1 | 1720 | 1 | 1720 | 1 | 1100 | 9254 |
| Germany | 102.3 | 9 | 12003 | 0 | 0 | 0 | 0 | 0 | 0 | 1934 |
| Hungary | 14.7 | 4 | 1880 | 0 | 0 | 0 | 0 | 2 | 2200 | 331 |
| India | 28.9 | 20 | 4385 | 7 | 5300 | 18 | 15100 | 39 | 45000 | 937 |
| Indonesia | 0 | 0 | 0 | 0 | 0 | 2 | 2000 | 4 | 4000 | 0 |
| Iran | 0 | 1 | 915 | 0 | 0 | 2 | 2000 | 1 | 300 | 170 |
| Israel | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1200 | 0 |
| Italy | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 17000 | 0 |
| Japan | 156.2 | 50 | 44396 | 3 | 3036 | 10 | 13772 | 3 | 4000 | 4636 |
| Jordan | 0 | 0 | 0 | 0 | 0 | 1 | 1000 | | | 0 |
| Kazakhstan | 0 | 0 | 0 | 0 | 0 | 2 | 600 | 2 | 600 | 0 |
| Korea OPR (North) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 950 | 0 |
| Korea RO (South) | 147.8 | 23 | 20787 | 4 | 5205 | 5 | 7000 | 0 | 0 | 3967 |
| Lithuania | 0 | 0 | 0 | 0 | 0 | 1 | 1350 | 0 | 0 | 0 |
| Malaysia | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2000 | 0 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Mexico | 9.3 | 2 | 1600 | 0 | 0 | 0 | 0 | 2 | 2000 | 279 |
| The Netherlands | 3.9 | 1 | 485 | 0 | 0 | 0 | 0 | 1 | 1000 | 102 |
| Pakistan | 3.8 | 3 | 725 | 2 | 680 | 0 | 0 | 2 | 2000 | 117 |
| Poland | 0 | 0 | 0 | 0 | 0 | 6 | 6000 | 0 | 0 | 0 |
| Romania | 10.8 | 2 | 1310 | 0 | 0 | 2 | 1310 | 1 | 666 | 177 |
| Russia | 162.0 | 33 | 24164 | 10 | 9160 | 24 | 24180 | 20 | 20000 | 5488 |
| Saudi Arabia | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 17000 | 0 |
| Slovakia | 14.3 | 4 | 1816 | 2 | 880 | 0 | 0 | 1 | 1200 | 307 |
| Slovenia | 5.9 | 1 | 696 | 0 | 0 | 0 | 0 | 1 | 1000 | 137 |
| South Africa | 12.9 | 2 | 1800 | 0 | 0 | 0 | 0 | 6 | 9600 | 304 |
| Spain | 55.1 | 8 | 7448 | 0 | 0 | 0 | 0 | 0 | 0 | 1355 |
| Sweden | 58.1 | 10 | 9399 | 0 | 0 | 0 | 0 | 0 | 0 | 1394 |
| Switzerland | 25.7 | 5 | 3252 | 0 | 0 | 0 | 0 | 3 | 4000 | 527 |
| Thailand | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5000 | 0 |
| Turkey | 0 | 0 | 0 | 0 | 0 | 4 | 4800 | 4 | 5600 | 0 |
| Ukraine | 84.9 | 15 | 13168 | 0 | 0 | 2 | 1900 | 11 | 12000 | 2348 |
| United Arab Emirates | 0 | 0 | 0 | 1 | 1400 | 3 | 4200 | 10 | 14400 | 0 |
| United Kingdom | 62.7 | 16 | 10038 | 0 | 0 | 4 | 6680 | 9 | 12000 | 2096 |
| USA | 790,4 | 104 | 102195 | 1 | 1218 | 13 | 15660 | 13 | 21600 | 19724 |
| Vietnam | 0 | 0 | 0 | 0 | 0 | 4 | 4000 | 6 | 6700 | 0 |
| WORLD | 2518 | 436 | 374,135 | 62 | 62,789 | 167 | 182,095 | 317 | 359,655 | 67,990 |
| | Billion KWh | no. | MWe | No. | MWe | no. | MWe | no. | MWe | U tons |
| | NUCLEAR ENERGY GENERATED 2011 | OPERATING REACTORS | | REACTORS BUILT | BEING | ORDERED PLANNED REACTORS | OR | PROPOSED REACTORS | | URANIUM DEMAND 2012 |

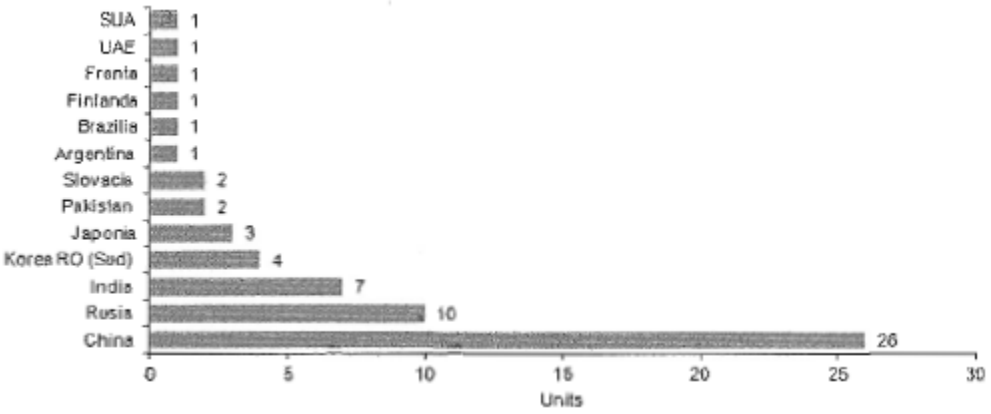
*Source: WNA*

Figure 21: Number of operational reactors and reactors being built worldwide

Number of operational nuclear reactors worldwide




Number of nuclear reactors being built worldwide




*Source: WNA*

## Annex 3 – Worldwide analysis of the CANDU technology

Figure 22: CANDU technology worldwide


*Source: www.cna.ca*

CANDU type reactors designed by AECL ("Atomic Energy of Canada Limited") in two versions. CANDU 6 has a capacity of approximately 700 MWe, being the model used or built by all the companies in possession of the CANDU technology. The CANDU 6 design has been used for almost 20 years.

CANDU 9 benefits from a capacity of approximately 900 MWe, being similar in many regards to the CANDU 6 technology, but it was designed for a larger electricity market. CANDU 9 is based on the model used in the newest Canadian stations, with several new production facilities, converted into self-standing facilities.

While the name of CANDU was not used until the 1960s, the CANDU program may be deemed to have started in 1954. At that time, a team referred to as the "Nuclear Power Group" was created in order to conduct studies aimed at identifying the potential of the nuclear power system in Canada. Even though the team was operating under the auspices of AECL and was located in building 456 belonging to AECL – the Chalk River Laboratory, the members of the team formed part of several Canadian organizations in the industrial and utilities sectors, with the expertise in the nuclear field being provided by the AECL employees.

The defense philosophy for CANDU 6 reactors allows the possibility for unexpected events to occur, but they are actually counteracted. The high safety level is determined by four key elements:

- *Prevention* – A fundamental element for safety is a correct design and the enforcement of strict quality control during the plant designing, manufacturing and building stages. Equipment flaws and human errors are anticipated and tackled.

- *Protection* – Protection aims at stopping accidents before causing more damages to the reactor. In order to shut down the reactor and remove heat, redundant systems are provided.

- *Mitigation* – Restore the ability to remove heat if affected, in order to prevent/limit the fuel degradation degree.

- *Containment* – Is aimed at stopping the release of radioactive materials in the environment through physical barriers.

A variety of physical barriers have been implemented in order to preclude the release of radioactive materials. The ceramic fuel, uranium dioxide (UO2) containing more than 90% radioactive products, created further to fission is solid, and is stored in sealed conditions within a metal lining. The fuel is sealed in a transportation and cooling system and is surrounded by a concrete safety container.

The main components of CANDU are: reactor, fuel handing system, heat conveyance system, water supply system and steam system. The fuel handling system ensures fuel renewal and removes the used fuel from the reactor. The heat generated inside the reactor further to the fission process of nuclei in the fuel is removed by the heat conveyance system, using heavy water and is transferred by means of steam generators to the supply system, using regular water, while the resulting steam is guided to the turbines.

Units 1 and 2 at Cernavoda have been created in reliance upon the CANDU 600 technology - (CANada Deuterium Uranium 600 - Pressurized Water Reactor). This type of reactor "burns" the uranium fuel by natural means, using heavy water of nuclear gradation (with an isotopic content higher than 99.75 D20) as moderator and cooling fluid, in two closed independent systems. Further on, in the four steam generators, the heat in the heat conveyance system is turned into regular water, generating saturated steam. Through its expansion, the steam rotates the turbines, which have an average pressure cylinder and three low pressure cylinders; inside the electricity generator, the mechanical power of the turbine is converted into electricity. After leaving the turbines, condensed steam is removed, and so is the heat, by the cooling water in the Danube. The water circuit is resumed: condense is pumped back in order to actuate the steam generators.