

# **Nuclear Decommissioning Assistance Programme**

## **Ignalina Programme**

### **Work Programme 2021-2022**

#### **Annex 3**

##### **Decommissioning programme**

## DEFINITIONS, ABBREVIATIONS AND ACRONYMS

|   |   |
|---|---|
| <b>Accident</b>                                     | Any nuclear or radiological event (accident and incident), that has a significant radiological impact on people and environment and rated at levels 1 – 7 according to the international INES scale, an event that has insignificant safety impact (Below the Scale / Level 0), or event that does not have any relevance to radiation or nuclear safety (not rated at the scale) |
| <b>Baseline</b>                                     | According to FDP chapter 4 Decommissioning activities and cost planning annex 3 “Ignalina INPP Decommissioning schedule”  |
| <b>Budget at completion</b>                         | According to FDP section 4 Decommissioning activities and cost planning annex 5 Planned value (calculated from 2014-01-01)  |
| <b>CPMA</b>   | Central Project Management Agency   |
| <b>D&amp;D</b>                                      | Dismantling and Decontamination   |
| <b>DFHS</b>   | Damaged Fuel Handling System  |
| <b>EIAR</b>   | Environmental Impact Assessment Report  |
| <b>EBRD</b>   | European Bank of Reconstruction and Development   |
| <b>FDP</b>  | Final Decommissioning Plan approved on 11 August 2020, by Order of the Minister of Energy No. 1-248   |
| <b>FIHC</b>   | Fuel Inspection Hot Cell  |
| <b>WAC</b>  | Waste acceptance criteria   |
| <b>IIDSF</b>  | Ignalina International Decommissioning Support Fund   |
| <b>INES</b>   | International Nuclear and Radiological Event Scale  |
| <b>INPP</b>   | Ignalina Nuclear Power Plant  |
| <b>ISFSF</b>  | Interim Spent Fuel Storage Facility   |
| <b>“Hot” trials</b>                                 | equipment testing with the use of radioactive materials   |
| <b>LRW</b>  | Liquid Radioactive Waste  |
| <b>MTF</b>  | Metal Waste Treatment Facility  |
| <b>PV</b>   | The portion of the baseline total cost of the project that is scheduled to be completed as of the project data date (calculated from 2014-01-01). In according to FDP chapter 4   |
| <b>RWISF</b>  | Radioactive Waste Interim Storage Facility  |
| <b>SAR</b>  | Safety Analysis Report  |
| <b>SBF</b>  | State budget fond   |
| <b>SFAs</b>   | Spent Nuclear Fuel Assemblies   |
| <b>SFP</b>  | Spent Nuclear Fuel Storage Pools  |
| <b>SRW</b>  | Solid Radioactive Waste   |
| <b>TD</b>   | Technical Design  |
| <b>Technical Design Documentation (TDD, design)</b> | Includes: Technical Solution for performance of INPP equipment dismantling and decontamination, Plan of Activities on project development, Project Management Procedure, Technological Design, D&D Safety Analysis Report, D&D Environmental Impact Assessment Report, Construction Design of simple repair, Detailed Design documents (Method Statement)                         |
| <b>Unusual events</b>                               | Any adverse event, related to violation of the conditions of licensed and regulated activities or the requirements for the operation of a nuclear facility, that has or may have an adverse effect on safety  |
| <b>TS</b>   | Technical Specification   |
| <b>VATESI</b>                                       | State Nuclear Power Safety Inspectorate   |

## 1 CURRENT STATE

### 1.1 Brief summary

The overall cost of INPP decommissioning (estimate at completion, including contingencies) is estimated at 3,327 MEUR for INPP activities, and 3,577.2 MEUR including Physical security and Fire protection activities. The planned completion date is the end of 2038. In 2017, the Lithuanian government announced its political commitment to maintaining a minimum level of national contributions to decommissioning at 14% for the Ignalina Programme's entire duration. In 2018 the national contribution to INPP decommissioning (activities included in Decommissioning Plan) amounted to 17%, and in 2019 - 18%.

In 2020, INPP was faced with challenges associated with the global COVID-19 pandemic. When the government of Lithuania announced an emergency situation as a result of the COVID-19 pandemic, INPP also put its own measures in place to tackle the pandemic challenges to its activities. Staff missions, training, official visits and excursions were cancelled, and remote working was organized for many of INPP's non-industrial employees. From 6 April 2020, by the order of the INPP General Director, the physical decommissioning activities were suspended, and furlough was announced for many employees, leaving only the provision of the essential activities on site, and some remote working activities that were also vital for the programme. As the rate of COVID-19 cases fell and nationwide restrictions began to be lifted, INPP staff were also gradually returned to normal working conditions. With this situation, INPP lost 72.6 thousand man-hours, the cost of which was 607.4 thousand Eur. INPP decided that many of the special measures introduced will continue to be applied at INPP to reduce the risk of virus infection and minimise possible future disruption. While the performance of INPP was affected, with some targets not being met due to the COVID-19 quarantine, this did not affect the schedule of overall decommissioning programme implementation.

Despite the challenges posed by the pandemic, the safety of INPP was not compromised. The INPP reactor units and technological equipment were maintained in accordance with nuclear safety requirements. In 2020, there were no violations of the INPP limits and conditions of safe operation and maintenance set by the licences. The number of unusual events is zero; the number of accidents during operation and maintenance of INPP systems is also zero.

In order to perform plant decommissioning more efficiently and strengthen project management capacity, a more result-oriented organizational structure was put in place. In recent years, INPP has adapted to changing conditions and revised its organizational structure by centralizing radioactive waste logistics and solid radioactive waste management. The latest phase was characterised by centralizing the functions of the INPP's laboratories in the fields of radiological characterisation, ecology and chemistry. The new INPP structure entered into force on 1 January 2020.

The removal of spent fuel assemblies (SFAs) from both INPP reactor buildings (Units 1 and 2) started in September 2016 with the start of "Hot" trials of the Interim Spent Fuel Storage Facility (ISFSF). Industrial operation of the B1 ISFSF, launched in May 2017, continues with no disruptions as well as the transfer of spent nuclear fuel from Unit 1 and 2 SFP to the ISFSF. The reactor of Unit 1 was defueled (from reactor core to the SFP) in 2009, Unit 2 - in February 2018, i.e. 9 months earlier than planned. As of 30 November 2020, **15,025** SFAs (more than 97% of the total quantity to be transferred) were safely loaded into casks and put into the ISFSF; it is planned for 15,040 SFAs to be loaded by the end of 2020. The manufacturing and delivery of CONSTOR RBMK 1500/M2 casks for spent nuclear fuel transportation was planned to be completed in February 2021, but the Contractor (Consortium GNS-NUKEM) has completed it one year earlier – the last consignment of the 191 manufactured casks was delivered to INPP on 24 February 2020. The unloading of spent fuel in undamaged assemblies from Unit 1 and 2 SFP is nearing completion; however, there are also 369 damaged spent fuel assemblies stored in Units' 1 and 2 SFPs (182 - in Unit 1 and 187 - in Unit 2). The damaged-fuel handling is significantly more complex and requires special equipment. In 2020/Q2, tests of damaged-fuel handling equipment in Unit 1 using damaged-fuel assembly simulators (without radioactive materials) were completed, and in July 2020, the "Hot" trials using real damaged-fuel assemblies was started. All spent nuclear fuel is scheduled to be removed from the INPP Units by October 2022.

Also, there are nuclear fuel cartridge elements and other radioactive sediment remaining at the bottom of the SFPs. The issue of SFP decontamination after completion of spent nuclear fuel unloading is being solved by INPP with initiation of project P.3.1.3103 "Collection and disposal of nuclear fuel debris from the bottom of SFP in the Units 1 and 2". This is essential work that must be completed in advance of draining down, decontamination and dismantling of the SFP themselves. INPP plans to use, for this purpose, some of the equipment manufactured under project B1 for handling of damaged fuel and advanced remote technology. Unit 1 SFP must be cleaned by the end of 2021, Unit 2 – in 2022.

In order to increase the efficiency of the decommissioning process, in 2021 INPP also plans to introduce advanced technologies for dismantling of its drums-separators (INPP is preparing the TS for procurement of drums-separator dismantling services), and plans to purchase modern equipment for reactor channel processing in Unit 2.

The new Solid Waste Treatment and Storage Facilities, one of the major waste management infrastructure projects needed to proceed with decommissioning, have been in operation since the start of the commissioning tests ("Hot" trials) on 9 June 2017. The VATESI permission for the new Solid Waste Retrieval Unit RU1 and the Landfill Sorting Facility B2-1 (intended for the management of class G1 radioactive waste) industrial operation was obtained in May 2019, and for the new Solid Waste Retrieval and Sorting Units RU2, RU3 (the Landfill Sorting Facility B2-2, intended for the management of classes G2/G3 radioactive waste) industrial operation - in June 2020. The additional "Hot" trials procedures caused by implementation of additional protective shielding measures for reduction of G3 waste high activity are completed, and B3/4 licensing for industrial operation is currently underway. The VATESI permission for the Solid Waste Treatment and Storage Facilities (B3/4) industrial operation is planned to be obtained in 2021. Construction of the Landfill Facility for Short-Lived Very Low-Level Waste (B19-2), another major waste management infrastructure project, is almost completed. The VATESI permission for industrial operation is planned to be obtained in April 2022, after successful realization of a "first campaign" of waste transportation and loading into the Landfill Facility. INPP is also currently conducting a repeated tendering procedure for the construction of the Near Surface Repository for Low and Intermediate Level Short-Lived Radioactive Waste (NSR) and plans to sign the NSR construction contract in May 2021.

INPP has made significant progress in the dismantling and decontamination of equipment. From 2014 to the end of November 2020, **43,351** tonnes of INPP equipment were dismantled in total and **19,526** tonnes of Class A waste have been processed through the Free Release Measurement Unit (B10), **96,9%** of which (**18,917** tonnes) have been decontaminated to Class 0. The target to dismantle 3,716 tonnes of INPP equipment during 2020 and **43,494** tonnes as cumulative amounts from 2014 till the end of 2020 is almost reached. INPP plans to dismantle 3,310 tonnes during 2021, and 3,964 tonnes during 2022. In total, from 2014 to the end of November 2020, **41,626** m<sup>3</sup> of radioactive waste were processed and **8,171** m<sup>3</sup> of radioactive wastes were transported to storage facilities. INPP plans to process 35,234 m<sup>3</sup> of radioactive wastes by the end of 2020 (target is almost reached), 49,325 m<sup>3</sup> by the end of 2021, and 58,475 m<sup>3</sup> by the end of 2022. A site for chemical decontamination of radioactive waste is planned to be created in Building 130/2 (MTF) in 2022. INPP is now investigating the need for additional equipment (a melting facility) to further expand the capacity and/or capability of the MTF. INPP conducted research and prepared the Site Evaluation Report and a draft of concept to transform the Bituminized Waste Storage Facility into a Surface Repository; it is planned for the concept to be finalised and approved with VATESI by the end of 2020.

INPP is continuing to develop the design documentation for dismantling and decontamination of Unit 1 reactor zones R1 and R2, above and below the reactor core respectively. The project TD and SAR are prepared; VATESI's agreement is anticipated in 2020/Q4. The reactor core (zone R3) dismantling and decontamination is a very complex task and, as a result, it is split into several parts. First, an optioneering study will be developed. To this end, INPP developed the procurement documents for the choice of dismantling technologies, waste storage options, preparation of the conceptual design and environmental impact assessment. In parallel, INPP is continuing preparatory works targeted to gather technical information about R3 zone structures and materials. The safe implementation of dismantling of the Unit 1 and 2 reactors is the next major step in decommissioning funded by the Ignalina Programme.

To proceed smoothly with decommissioning, INPP must obtain a Decommissioning License as soon as both units are defueled. As per current schedule, the defueling will be completed in November 2022, and the Decommissioning Licence will be issued in September 2023 (this takes into account time for VATESI scrutiny of the presented documentation); at present, this term does not affect the INPP decommissioning schedule. It is a legal obligation to obtain the Decommissioning License but, in addition, there are expectations that it would allow to carry on decommissioning activities in a more effective and simplified way compared to the current regulatory regime which is inherited from the operational status of the plant. INPP is preparing the key documents – FDP and SAR. The FDP was agreed with VATESI and all State Institutions in 2020/Q1, and approved by the Ministry of Energy on 11 August 2020. The SAR is under preparation; its submission to VATESI is scheduled for 2021/Q2.

In order to reduce operating costs in accordance with the criteria of the "Make or Buy" methodology, INPP has to fulfil its commitment to outsource the final activities from the "Make or Buy" programme, as agreed at the Monitoring Committee meeting on 22 March 2019. The remaining activities under procurement; the "Make or Buy" programme will be completed by the end of 2020. The approximate economic effect of the "Make or Buy" analysis (completed earlier) is about 600,000 Eur per year. Also, INPP is looking for new energy saving opportunities and is committed to the introduction of new innovative technologies. In line with the National Energy Independence Strategy, one of the goals of which is to achieve at least 45% the country's energy consumption from renewable sources by 2030, INPP has explored the options for installation of a photovoltaic solar power facility. The INPP Board supported this idea, and in 2020/H1, a detailed study of the installation of a photovoltaic solar power station was carried out, in which 8 alternative options for the installation of such facility were evaluated, the optimal technology was proposed, and preliminary calculations performed. The installation of a 10.95 MW solar power station with double-sided modules mounted on a fixed system is the most technically and economically optimal. The investment in such a facility would preliminarily repay in 7.7 years. According to preliminary calculations, the such solar facility will produce about 385 GWh of electricity in 30 years and yield about 23.8 MEUR benefits from cost savings. Currently, INPP is coordinating with Visaginas Municipality its decision on the possibilities of installing a photovoltaic solar power facility.

## **1.2 Implementation strategy**

The strategy for implementation of the decommissioning programme has the following main elements.

Ignalina NPP will be decommissioned by immediate dismantling that is a continuous process until its completion on reaching the defined end-state.

It should be noted that the decommissioning programme does not cover all nuclear facilities at the disposal of the Ignalina NPP. Two Spent Fuel Stores, a solid radioactive waste management complex, a very low-activity short-lived radioactive waste disposal facility and a planned Low-activity radioactive waste surface disposal facility. The spent fuel storage facility and the solid radioactive waste management facility will continue to operate for decades. Their decommissioning is not part of the decommissioning programme. The very low-activity short-lived radioactive waste disposal facility and the low- and medium-activity short-lived radioactive waste disposal facility will be closed after the demolition of the sites on the Ignalina NPP site.

The end-state to be achieved is to clean up and transfer to non-controlled use the largest possible part of the Ignalina NPP site (giving that part of the 'green site' status).

"Green field" means the final condition of a nuclear facility/site at which the radionuclide activity concentration in the buildings and site (or part of it) does not exceed the unconditional non-controlling radioactivity levels and there are no restrictions on the use of the facility's buildings and site due to possible exposure to ionising radiation.

The condition of the "green site" is currently the planned target condition, but depending on the level of contamination of the buildings and site and the possibility to continue using the buildings and infrastructure, a decision may be taken that the final condition is "brown site" (brown site). The decision on the target status of the site must be made after completion of the engineering studies on the cessation of control of the buildings of the unit, which should be completed by 2027-03-31 according to the current schedule.

"Brownfield" means the final state of the nuclear facility/site at which the radionuclide activity concentration in the buildings and/or site (or part of it) exceeds the unconditional release levels, and the use of the facility's buildings

and site (or part of it) due to the potential exposure to ionising radiation is only possible with limitations, in which case safety is ensured by administrative measures during subsequent use of the site. Restrictions on the use of the 'crew site' can only be imposed with knowledge of the actual uses of the 'brown site' (as well as of the buildings and structures on it).

### **1.3 Scope of the decommissioning programme**

The scope of the decommissioning programme is defined by the activities in Table 2. At the implementation level, it is further clarified that they concern only facilities and infrastructure in use for the power operation of Ignalina NPP or essential to its decommissioning; and that they are consistent with the end-state and the implementation strategy.

### **1.4 Waste management strategy**

The Radioactive Waste Management Development Programme also defines waste management objectives and principles: "In order to implement safety principles, spent fuel and radioactive waste shall be permanently isolated from humans and living environments and their safety shall be ensured by passive means and measures. This can be achieved by concentrating spent fuel and radioactive waste into disposal facilities. The storage of spent fuel and radioactive waste, including in the long term, a temporary solution that does not ensure safety in the long term. Storage cannot be an alternative to waste disposal".

In accordance with these principles, a strategy for the management of radioactive waste has been developed for the SE Ignalina NPP in order to:

- treat all radioactive waste and spent fuel (SF), ensuring a high level of nuclear and radiation protection and environmental protection during management;
- ensure the long-term safety of SF and long-lived radioactive waste;
- reduce the amount of radioactive waste and aim at the elimination of radiation control for as many waste/substances as is reasonably practicable and economically justified.

### **1.5 Optimisation of INPP operations**

Among the objectives of INPP is continuous improvement of the efficiency of the company activities. For several years, in compliance with the requirements set by the EC, INPP implemented the "Make or Buy" (MoB) analysis, which aimed to assess whether it is more economically effective when certain activities are carried out by the Enterprise's personnel, or when the services are purchased on the market. The main criteria used to determine which activities are to be analysed was the market supply, the importance of the performed activities for INPP (main or supportive activity), the requirements of the regulatory authorities, the legal regulation of the performed activities, and risk factors. In 2019 the MoB analysis was discontinued due to the legislative provisions ("transfer of business" case) that made MoB non-effective economically. The result of successfully implemented MoB in the period 2017–2020 was the following: number of positions at INPP was reduced by 113, the financial effect from the successfully implemented MoB activities approximately amounts to 630 000 Eur per year for at least 3 years period of savings on services and approximately 790 000 Eur savings from the purchase of 10,000 units of 200L drums.

Currently INPP follows the strategy that goods and services are purchased in the market when in-house resources are insufficient for successful progress of decommissioning activities while implementing measures to improve efficiency of daily operations.

In the period 2020–2021, INPP has been implementing measures aimed at analysing and improving efficiency of the activities of the Programmes P0 "Enterprise activity organisation programme" ("General activities") and P5 "Post-operation programme". The main focus is on the review and optimization of the scope of activities, and reallocation of the personnel to achieve planned results with fewer resources.

For the period 2021–2024, the measures are planned aiming to increase efficiency of INPP activities in the following areas: saving energy resources, using energy from renewable sources, improving projects and risks management, reviewing processes or activities and developing and implementing proposals for increasing their efficiency; developing the results-oriented organizational structure of the company, preserving the knowledge of employees who are critical to the INPP activities, increasing involvement and empowerment of employees.

After the unloading of spent nuclear fuel from power units in July 2022, the activities of INPP will be focused on the radioactive waste management, dismantling, demolition of buildings, construction of new radioactive waste infrastructure, etc. With this in mind, a substantial restructuring of the Decommissioning Department is planned. During the restructuring, the structural level of Services of the Department (in particular, Technological Processes Service and the Maintenance Service) will be abolished, and the activities and functions of the Department will be reviewed and clarified. Project Management Service will be transformed into the Project Management Department, which will perform only the functions directly related to the implementation of projects. Changes are also planned within other divisions of INPP: Activity Planning Division, Procurement and Contracts Division, Safety and Quality Management Division, Document Management Division and Transportation Division. The aforementioned changes to the organisational structure will lead to more efficient management and use of the human, financial and material resources of the company, i. e. the functions of the personnel involved in the restructuring will be analysed, reviewed and clarified, the number of the personnel will be optimized (it is planned to dismiss approximately 200 employees), and the management of processes will be optimized and concentrated.

## 2 DESCRIPTION OF THE ACTION

### 2.1 List of projects included in the DP

The summary project descriptions with the scopes of works planned under ongoing projects in 2021 and 2022, as well as recently completed, cancelled, closed, suspended or in the near future planned projects are presented in this table.

| Project Identifier |  | Description   | Anticipated actions / Ignalina Programme support 2021-2022  | Funding |                             |   |   |                     |                   |   |  |                            |
|--------------------|--|---|---|---------|-----------------------------|---|---|---------------------|-------------------|---|--|----------------------------|
| ID                 | Name   |   |   |         |                             |   |   |                     |                   |   |  |                            |
| (1)                | (2)  | (3)   | (4)   | (5)     |                             |   |   |                     |                   |   |  |                            |
| <b>P.0</b>         | <b>Enterprise Activity Organising Programme</b>    |   |   |         |                             |   |   |                     |                   |   |  |                            |
|                    |  | <ul style="list-style-type: none"> <li>- Activity administration, legal services. Internal and external communication, planning, document and record management, procurement management, personal management, finance management, accounting.</li> <li>- Quality-management system implementation and supervision, technical safety assurance and supervision, emergency, preparedness assurance and supervision, fire safety assurance and supervision, occupational safety and health assurance and supervision.</li> <li>- Waste disposal, sale of goods and materials no longer necessary, leasing of objects to outside organisations, consultancy services on exchange of decommissioning experience.</li> <li>- Radiation safety assurance and supervision, environmental safety assurance and supervision.</li> <li>- Physical security assurance and supervision.</li> <li>- Workplaces arrangement, IT maintenance, telecommunications maintenance, general transport maintenance, warehouses maintenance and stock management.</li> <li>- Consultancy and legal support for INPP decommissioning.</li> </ul> | <table border="1"> <tr><td>✓</td><td>In-house activities of INPP</td></tr> <tr><td>✓</td><td>Purchase of consulting and legal services</td></tr> <tr><td>✓</td><td>Purchase of goods</td></tr> <tr><td>✓</td><td>Purchase of physical implementation works/services</td></tr> </table> <p>Grant Application ADA.22 submitted to Monitoring Committee<br/>Grant Application ADA.23 submitted to Monitoring Committee</p> | ✓       | In-house activities of INPP | ✓ | Purchase of consulting and legal services | ✓                   | Purchase of goods | ✓ | Purchase of physical implementation works/services | IIDSF, CPMA, SBF and other |
| ✓                  | In-house activities of INPP                        |   |   |         |                             |   |   |                     |                   |   |  |                            |
| ✓                  | Purchase of consulting and legal services          |   |   |         |                             |   |   |                     |                   |   |  |                            |
| ✓                  | Purchase of goods                                  |   |   |         |                             |   |   |                     |                   |   |  |                            |
| ✓                  | Purchase of physical implementation works/services |   |   |         |                             |   |   |                     |                   |   |  |                            |
| <b>P.1</b>         | <b>Preparation for Decommissioning Programme</b>   |   |   |         |                             |   |   |                     |                   |   |  |                            |
| P.1.1.1101         | INPP equipment engineering inventory               | Collection of information on primary waste volumes, creation of a unified database containing information on the characteristics of INPP components and equipment required for planning and implementation of dismantling and waste management (volume of equipment, mass, materials, volume and materials of construction structures, etc.).   | <table border="1"> <tr><td>✓</td><td>In-house activities of INPP</td></tr> <tr><td>✓</td><td>Purchase of goods</td></tr> </table> <p>The coming steps:<br/>To be inventoried 1,650 tonnes of equipment in 2021 (project completion).</p>  | ✓       | In-house activities of INPP | ✓ | Purchase of goods                         | CPMA, SBF and other |                   |   |  |                            |
| ✓                  | In-house activities of INPP                        |   |   |         |                             |   |   |                     |                   |   |  |                            |
| ✓                  | Purchase of goods                                  |   |   |         |                             |   |   |                     |                   |   |  |                            |



| Project Identifier |  | Description  | Anticipated actions / Ignalina Programme support 2021-2022  | Funding |                             |                     |                   |   |  |                     |
|--------------------|--|--|---|---------|-----------------------------|---------------------|-------------------|---|--|---------------------|
| ID                 | Name   |  |   |         |                             |                     |                   |   |  |                     |
| (1)                | (2)  | (3)  | (4)   | (5)     |                             |                     |                   |   |  |                     |
| P.1.1.1102         | Radiological characterisation                      | Collection of information on radiological characteristics of dismantled INPP objects (contamination with radionuclides, dose rate, etc.). This information is needed for the planning of dismantling and waste management, planning and design of storage facilities and repositories, and preparation of various safety and environmental impact reports. | <table border="1"> <tr> <td>✓</td> <td>In-house activities of INPP</td> </tr> <tr> <td>✓</td> <td>Purchase of goods</td> </tr> <tr> <td>✓</td> <td>Purchase of physical implementation works/services</td> </tr> </table> <p>The coming steps (2021-2022):</p> <ol style="list-style-type: none"> <li>To perform the main radiological research of the Building 117/2 structures.</li> <li>To perform radiological research of Building 111 (boxes 7-9).</li> <li>To perform radiological research of Building 152/1 equipment.</li> <li>To perform radiological research of Buildings 137 and 137 a, b, v, g equipment.</li> <li>To perform radiological research of Buildings 137 and 137 a, b, v, g structures.</li> <li>To perform the final radiological research of the passage of Building 130/2.</li> <li>To perform radiological research of the equipment of Buildings 120/1 and 123/1.</li> <li>To perform radiological research of the equipment of the Buildings 120/2 and 123/2, 139A1, 139A2 structures.</li> <li>To determine of nuclide vector in Block A2 (including reactor zones R1, R2, R3).</li> <li>To determine the nuclide vector for secondary waste of class B and C.</li> <li>To determine the nuclide vector for the ash from B3/4 complex incineration facility.</li> <li>To prepare a research report on the waste radiological activity in the industrial waste disposal site and agreed it inside INPP.</li> </ol> | ✓       | In-house activities of INPP | ✓                   | Purchase of goods | ✓ | Purchase of physical implementation works/services | CPMA, SBF and other |
| ✓                  | In-house activities of INPP                        |  |   |         |                             |                     |                   |   |  |                     |
| ✓                  | Purchase of goods                                  |  |   |         |                             |                     |                   |   |  |                     |
| ✓                  | Purchase of physical implementation works/services |  |   |         |                             |                     |                   |   |  |                     |
| P.1.1.1103         | Decommissioning Licensing                          | Obtaining of decommissioning license immediately after all spent nuclear fuel has been removed from the Units. The scope of the project includes preparation of documents required for obtaining a license and their agreement with the interested authorities.  | <table border="1"> <tr> <td>✓</td> <td>In-house activities of INPP</td> </tr> </table> <p>The coming steps (2021-2022):</p> <ol style="list-style-type: none"> <li>To submit INPP decommissioning SAR for approval to VATESI.</li> <li>To receive VATESI agreement of INPP decommissioning SAR.</li> </ol>  | ✓       | In-house activities of INPP | CPMA, SBF and other |                   |   |  |                     |
| ✓                  | In-house activities of INPP                        |  |   |         |                             |                     |                   |   |  |                     |

| Project Identifier |  | Description   | Anticipated actions / Ignalina Programme support 2021-2022  | Funding                    |                             |   |   |                            |  |                     |
|--------------------|--|---|---|----------------------------|-----------------------------|---|---|----------------------------|--|---------------------|
| ID                 | Name   |   |   |                            |                             |   |   |                            |  |                     |
| (1)                | (2)  | (3)   | (4)   | (5)                        |                             |   |   |                            |  |                     |
| P.1.2.1201         | B1 - Interim spent fuel storage facility (ISFSF)               | Construction of a new spent fuel storage facility with the necessary infrastructure, production of casks, which will contain all spent nuclear fuel from Units 1 and 2; design and installation of equipment required for loading the spent nuclear fuel into casks and transportation to the ISFSF. The scope of the project also includes the design, manufacture and installation of equipment required for the damaged fuel handling. | <table border="1"> <tr> <td>✓</td> <td>In-house activities of INPP</td> </tr> <tr> <td>✓</td> <td>Purchase of physical implementation works/services</td> </tr> </table> <p>The coming steps (2021):<br/>Installation of DFHS equipment in Unit 2 during 2021 (project completion).</p>   | ✓                          | In-house activities of INPP | ✓ | Purchase of physical implementation works/services  | IIDSF, CPMA, SBF and other |  |                     |
| ✓                  | In-house activities of INPP                                    |   |   |                            |                             |   |   |                            |  |                     |
| ✓                  | Purchase of physical implementation works/services             |   |   |                            |                             |   |   |                            |  |                     |
| P.1.2.1202         | B2 - Solid waste management and storage facility (SWMSF)       | Permission for B2-1 industrial operation was obtained in May 2019, for B2-2 - in June 2020. The project is completed.   | Not applicable  | Not applicable             |                             |   |   |                            |  |                     |
| P.1.2.1203         | B3/4 - Solid waste treatment and storage facilities            | Construction of a new solid radioactive waste management complex (long-lived and short-lived waste storage facilities and waste management facilities) and the necessary infrastructure. The B, C, D, E, F classes SRW removed from old storage facilities will be handled in this complex, as well as the B, C, D, E classes SRW generated during dismantling.   | The coming steps (2021):<br>To obtain a VATESI permission for industrial operation.   | IIDSF, CPMA, SBF and other |                             |   |   |                            |  |                     |
| P.1.2.1206         | B19-2 - Landfill Facility for short-lived very low level waste | Construction and commissioning of the Landfill Facility for short lived very low-level waste and required infrastructure; procurement and installation of the equipment; carrying out of necessary tests and putting the Landfill Facility into operation.  | <table border="1"> <tr> <td>✓</td> <td>In-house activities of INPP</td> </tr> <tr> <td>✓</td> <td>Purchase of technical assistance or design services</td> </tr> <tr> <td>✓</td> <td>Purchase of physical implementation works/services</td> </tr> </table> <p>The coming steps (2021-2022):<br/>1. Completion of Landfill Facility construction (State Construction Completion Act).<br/>2. Obtaining of VATESI permission for "1<sup>st</sup> campaign" of waste disposal.<br/>3. Completion of "1<sup>st</sup> campaign"</p> | ✓                          | In-house activities of INPP | ✓ | Purchase of technical assistance or design services | ✓                          | Purchase of physical implementation works/services | CPMA, SBF and other |
| ✓                  | In-house activities of INPP                                    |   |   |                            |                             |   |   |                            |  |                     |
| ✓                  | Purchase of technical assistance or design services            |   |   |                            |                             |   |   |                            |  |                     |
| ✓                  | Purchase of physical implementation works/services             |   |   |                            |                             |   |   |                            |  |                     |

| Project Identifier |   | Description  | Anticipated actions / Ignalina Programme support 2021-2022  | Funding        |                             |   |   |   |  |   |  |                     |
|--------------------|---|--|---|----------------|-----------------------------|---|---|---|--|---|--|---------------------|
| ID                 | Name  |  |   |                |                             |   |   |   |  |   |  |                     |
| (1)                | (2)   | (3)  | (4)   | (5)            |                             |   |   |   |  |   |  |                     |
| P.1.2.1207         | B25 - Near surface repository for low and intermediate level short-lived radioactive waste                | Design and construction of a near surface repository (NSR) for low and intermediate level short-lived radioactive waste (classes B and C) and auxiliary infrastructure required for this repository. | <table border="1"> <tr> <td>✓</td> <td>In-house activities of INPP</td> </tr> <tr> <td>✓</td> <td>Purchase of technical assistance or design services</td> </tr> <tr> <td>✓</td> <td>Purchase of major equipment / installation</td> </tr> <tr> <td>✓</td> <td>Purchase of physical implementation works/services</td> </tr> </table> <p>The coming steps (2021-2022):</p> <ol style="list-style-type: none"> <li>1. Contract signing for NSR construction (1<sup>st</sup> stage – 1 and 2 vault group construction) and start of construction.</li> <li>2. Contract signing for design and construction of Mock-up for NSR engineering barrier.</li> <li>3. Contract signing for construction of external infrastructure.</li> </ol> | ✓              | In-house activities of INPP | ✓ | Purchase of technical assistance or design services | ✓ | Purchase of major equipment / installation | ✓ | Purchase of physical implementation works/services | CPMA, SBF and other |
| ✓                  | In-house activities of INPP   |  |   |                |                             |   |   |   |  |   |  |                     |
| ✓                  | Purchase of technical assistance or design services   |  |   |                |                             |   |   |   |  |   |  |                     |
| ✓                  | Purchase of major equipment / installation  |  |   |                |                             |   |   |   |  |   |  |                     |
| ✓                  | Purchase of physical implementation works/services  |  |   |                |                             |   |   |   |  |   |  |                     |
| P.1.2.1208         | Engineering study of the possibility of industrial waste disposal site conversion into a final repository | Project was closed in July 2016.   |   | Not applicable |                             |   |   |   |  |   |  |                     |
| P.1.2.1218         | B38 - Interim storage buildings for reactor D&D waste   | Project was completed in October 2018.   |   | Not applicable |                             |   |   |   |  |   |  |                     |

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|--------------------|---|---|---|---------|-----------------------------|---|---|---|--|---------------------|--|---------------------|
| ID                 | Name  |   |   |         |                             |   |   |   |  |                     |  |                     |
| (1)                | (2)   | (3)   | (4)   | (5)     |                             |   |   |   |  |                     |  |                     |
| P.1.2.1219         | Installation of Radioactive Metal Waste Treatment Facility in bldg. 130/2 | <p>This facility was established under Project B27 1/MTF.01, primarily in order to decontaminate free-release materials that were already in temporary storage. The fragmentation, decontamination these materials under MTF.01 are in operation from 2017. In the middle of 2019, the Building 130/2 was repaired (old metal-framed windows replaced to plastic double-glazed windows).</p> <p>The aim of follow-up project MTF.02 is to increase the capacity of the Metal Waste Treatment Facility in order to enhance overall throughput of waste decontamination thereby avoiding the build-up of backlogs arising in the Blocks G1/ G2 facilities and providing greater flexibility and security in decontamination. The main works were completed in 2019 by installation of cutting equipment (belt machines, plasma cutting equipment), decontamination equipment (shot blasting, high pressure water), lifting mechanisms, compressors and other auxiliary equipment. INPP is now investigating the need for installation of metal smelting facility to reduce the amount of dismantling waste and further expand the capability of the facility.</p> | <table border="1"> <tr> <td>✓</td> <td>In-house activities of INPP</td> </tr> <tr> <td>✓</td> <td>Purchase of technical assistance or design services</td> </tr> <tr> <td>✓</td> <td>Purchase of goods</td> </tr> </table> <p>The coming steps (2021-2022):</p> <ol style="list-style-type: none"> <li>1. TS preparation for the procurement for modernisation of ventilation system.</li> <li>2. The contract signing, equipment delivery and installation.</li> </ol>   | ✓       | In-house activities of INPP | ✓ | Purchase of technical assistance or design services | ✓ | Purchase of goods                          | CPMA, SBF and other |  |                     |
| ✓                  | In-house activities of INPP   |   |   |         |                             |   |   |   |  |                     |  |                     |
| ✓                  | Purchase of technical assistance or design services                       |   |   |         |                             |   |   |   |  |                     |  |                     |
| ✓                  | Purchase of goods   |   |   |         |                             |   |   |   |  |                     |  |                     |
| P.1.2.1221         | Optimization of electric power supply schemes for INPP consumers          | <p>The project aim is to restructure (optimize) the electricity supply to the facilities at INPP site taking into account the decommissioning needs and restrictions: to eliminate the Units 1 and 2 equipment from the supply chain by construction a new 110/6 kV substation and power line connecting this substation with 110 kV switchyard, laying 6 kV power supply lines to new facilities.</p>  | <table border="1"> <tr> <td>✓</td> <td>In-house activities of INPP</td> </tr> <tr> <td>✓</td> <td>Purchase of technical assistance or design services</td> </tr> <tr> <td>✓</td> <td>Purchase of major equipment / installation</td> </tr> <tr> <td>✓</td> <td>Purchase of physical implementation works/services</td> </tr> </table> <p>The coming steps (2021-2022):</p> <ol style="list-style-type: none"> <li>1. To agree the new substation construction TD and TD of its connection to common electricity transmission networks with the stakeholders and to perform the expertise of the new substation construction TD.</li> <li>2. To obtain a permission for a new substation construction.</li> <li>3. To sign a contract for a new substation construction and its connection to common electricity transmission networks.</li> </ol> | ✓       | In-house activities of INPP | ✓ | Purchase of technical assistance or design services | ✓ | Purchase of major equipment / installation | ✓                   | Purchase of physical implementation works/services | CPMA, SBF and other |
| ✓                  | In-house activities of INPP   |   |   |         |                             |   |   |   |  |                     |  |                     |
| ✓                  | Purchase of technical assistance or design services                       |   |   |         |                             |   |   |   |  |                     |  |                     |
| ✓                  | Purchase of major equipment / installation                                |   |   |         |                             |   |   |   |  |                     |  |                     |
| ✓                  | Purchase of physical implementation works/services                        |   |   |         |                             |   |   |   |  |                     |  |                     |

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|--------------------|--|---|---|----------------|-----------------------------|---|---|----------------------------|
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| (1)                | (2)  | (3)   | (4)   | (5)            |                             |   |   |                            |
| P.1.2.1222         | B20 - Upgrade of bituminized waste vaults in Building 158                      | Concept, design, safety justification and construction work on transformation of bituminized waste storage into final repository.   | <table border="1"> <tr> <td>✓</td> <td>In-house activities of INPP</td> </tr> <tr> <td>✓</td> <td>Purchase of technical assistance or design services</td> </tr> </table> <p>The coming steps (2021-2022):<br/>1. Approval of Repository Concept.<br/>2. Approval of Site Evaluation Report.</p>  | ✓              | In-house activities of INPP | ✓ | Purchase of technical assistance or design services | CPMA, SBF and other        |
| ✓                  | In-house activities of INPP  |   |   |                |                             |   |   |                            |
| ✓                  | Purchase of technical assistance or design services                            |   |   |                |                             |   |   |                            |
| P.1.2.1223         | Erection and modification of communication lines and utilities                 | Project was closed in May 2017.   |   | Not applicable |                             |   |   |                            |
| P.1.2.1224         | Construction of new temporary waste treatment facility                         | This is a future project - <b>planned start in January 2029</b> , within the framework of which it is planned to install new more efficient facilities for a managing of radioactive waste (especially LRW), which will replace LRW handling facilities in Building 150. So far, terms and scope planning of this project is a declarative character. | No activities or support is currently foreseen.   | Not applicable |                             |   |   |                            |
| P.1.2.1225         | Modification of the existing FIHC at ISFSF to handle with three types of casks | Within the scope of the project, modification of the ISFSF fuel inspection hot cell will be performed, which will allow reloading of spent nuclear fuel from CASTOR / CONSTOR model casks. These casks could be transported by rail from the old storage to ISFSF, where they could be reloaded if necessary.   | <table border="1"> <tr> <td>✓</td> <td>In-house activities of INPP</td> </tr> <tr> <td>✓</td> <td>Purchase of goods</td> </tr> </table> <p>The coming steps in 2021:<br/>1. To manufacture, test and supply of new equipment.<br/>2. To prepare and approve a report on the implementation of FIHC modification (project completion).</p> | ✓              | In-house activities of INPP | ✓ | Purchase of goods                                   | IIDSF, CPMA, SBF and other |
| ✓                  | In-house activities of INPP  |   |   |                |                             |   |   |                            |
| ✓                  | Purchase of goods  |   |   |                |                             |   |   |                            |
| P.1.2.1226         | New Building Construction <sup>1</sup>   | Project was cancelled in October 2019.  |   | Not applicable |                             |   |   |                            |

<sup>1</sup> Scope extension funded exclusively by INPP.

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| ID                 | Name   |  |   |                     |                             |                     |  |   |  |                     |
| (1)                | (2)  | (3)  | (4)   | (5)                 |                             |                     |  |   |  |                     |
| P.1.2.1227         | Installation of automatic sewage pumping station in Building 437/1                       | On 24 May 2019, the CPMA approval was received for financing the installation of an automatic underground sewage pumping station from the Ignalina Programme. The aim of project is to design, construct and commissioning a new sewage pumping station, which will replace technically worn and inefficient pumping station in bldg. 437/1. The new pumping station implementation is planned to be completed by the end of 2020.   | The support concerns - none   | CPMA, SBF and other |                             |                     |  |   |  |                     |
| P.1.2.1228         | Construction of a solar power facility for INPP own use                                  | The project aim is to install a solar photovoltaic power facility in the planned territory of the land plot for INPP own use. The scope of project include installation of photovoltaic structures and photovoltaic modules, installation and configuration of inverters, installation of power transformers, installation of distribution panel and switching equipment, connection of all elements of photovoltaic station to a single operating system and connection to the INPP internal network, as well as commissioning and adjustment works of the photovoltaic facility. | <table border="1"> <tr> <td>✓</td> <td>In-house activities of INPP</td> </tr> <tr> <td>✓</td> <td>Purchase of major equipment / installation</td> </tr> <tr> <td>✓</td> <td>Purchase of physical implementation works/services</td> </tr> </table> <p>The coming steps (2021-2022):</p> <ol style="list-style-type: none"> <li>1. To obtain a permit from the State Energy Regulatory Authority for electricity generation.</li> <li>2. To sign a contract for photovoltaic facility design and construction services.</li> </ol> | ✓                   | In-house activities of INPP | ✓                   | Purchase of major equipment / installation | ✓ | Purchase of physical implementation works/services | CPMA, SBF and other |
| ✓                  | In-house activities of INPP  |  |   |                     |                             |                     |  |   |  |                     |
| ✓                  | Purchase of major equipment / installation   |  |   |                     |                             |                     |  |   |  |                     |
| ✓                  | Purchase of physical implementation works/services                                       |  |   |                     |                             |                     |  |   |  |                     |
| P.1.2.1229         | Construction of reactor waste interim storage facility                                   | To construct (if required) a reactor waste interim storage facility for storage of long-lived radioactive waste (graphite, metal and reactor structure fillers) that will result from the dismantling of reactor zones R3. A detailed scope of project is in planning stage.   | <table border="1"> <tr> <td>✓</td> <td>In-house activities of INPP</td> </tr> </table> <p>The coming steps (2021-2022):</p> <p>To prepare the tender documents for construction works procurement.</p>  | ✓                   | In-house activities of INPP | CPMA, SBF and other |  |   |  |                     |
| ✓                  | In-house activities of INPP  |  |   |                     |                             |                     |  |   |  |                     |
| P.1.2.1230         | Installation of a new modular boiler house to meet the heating needs of B1, B3.4 objects | In order to supply heat to these facilities after INPP disconnects from Visaginas municipality district heating network, it is necessary to design and construct a new heat supply unit (modular boiler house fired by natural gas) and build a local gas supply line.   | <table border="1"> <tr> <td>✓</td> <td>In-house activities of INPP</td> </tr> <tr> <td>✓</td> <td>Purchase of major equipment / installation</td> </tr> <tr> <td>✓</td> <td>Purchase of physical implementation works/services</td> </tr> </table> <p>The coming steps (2021-2022):</p> <ol style="list-style-type: none"> <li>1. To sign a contract for the preparation of the technical design.</li> <li>2. To sign a contract for development of laying a gas pipeline.</li> </ol>   | ✓                   | In-house activities of INPP | ✓                   | Purchase of major equipment / installation | ✓ | Purchase of physical implementation works/services | CPMA, SBF and other |
| ✓                  | In-house activities of INPP  |  |   |                     |                             |                     |  |   |  |                     |
| ✓                  | Purchase of major equipment / installation   |  |   |                     |                             |                     |  |   |  |                     |
| ✓                  | Purchase of physical implementation works/services                                       |  |   |                     |                             |                     |  |   |  |                     |

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|--------------------|--|--|--|----------------|-----------------------------|---|---|---------------------|--|---|--|---------------------|
| ID                 | Name   |  |  |                |                             |   |   |                     |  |   |  |                     |
| (1)                | (2)  | (3)  | (4)  | (5)            |                             |   |   |                     |  |   |  |                     |
| P.1.3              | Isolation of other INPP facilities equipment                         | Preparation of technological equipment for dismantling, carrying out the shutdown of systems, radiological measurements and isolation.   | <table border="1"> <tr> <td>✓</td> <td>In-house activities of INPP</td> </tr> <tr> <td>✓</td> <td>Purchase of goods</td> </tr> </table> <p>The coming steps (2021-2022):<br/>21 systems should be partially isolated during 2021.<br/>7 systems should be fully isolated during 2022.</p>  | ✓              | In-house activities of INPP | ✓ | Purchase of goods                                   | CPMA, SBF and other |  |   |  |                     |
| ✓                  | In-house activities of INPP  |  |  |                |                             |   |   |                     |  |   |  |                     |
| ✓                  | Purchase of goods  |  |  |                |                             |   |   |                     |  |   |  |                     |
| P.1.4              | Decontamination of process systems, equipment and facilities         | Project was completed in January 2019.   |  | Not applicable |                             |   |   |                     |  |   |  |                     |
| <b>P.2</b>         | <b>Objects Dismantling/Demolition and Site Remediation Programme</b> |  |  |                |                             |   |   |                     |  |   |  |                     |
| P.2.1.2101         | Unit 1 reactor facilities dismantling (areas R1 and R2, UP01 Unit 1) | To develop the dismantling technologies for structures and equipment from INPP Unit 1 reactor shafts in zones R1 and R2; to dismantle the reactor structures and equipment from INPP Unit 1 reactor shafts in zones R1 and R2 applying these developed technologies. Installation of remote Controlled Mechanisms for D&D of Equipment in Zones with High Dose Rates.  | <table border="1"> <tr> <td>✓</td> <td>In-house activities of INPP</td> </tr> <tr> <td>✓</td> <td>Purchase of goods</td> </tr> </table> <p>The coming steps (2021-2022):<br/>1. To dismantle 402 tonnes of equipment during 2021.<br/>2. To dismantle 450 tonnes of equipment during 2022.</p>   | ✓              | In-house activities of INPP | ✓ | Purchase of goods                                   | CPMA, SBF and other |  |   |  |                     |
| ✓                  | In-house activities of INPP  |  |  |                |                             |   |   |                     |  |   |  |                     |
| ✓                  | Purchase of goods  |  |  |                |                             |   |   |                     |  |   |  |                     |
| P.2.1.2102         | Unit 2 reactor facilities dismantling (areas R1 and R2, UP01 Unit 2) | To develop the dismantling technologies for structures and equipment from INPP Unit 2 reactor shafts in zones R1 and R2; to dismantle the reactor structures and equipment from INPP Unit 2 reactor shafts in zones R1 and R2 applying these developed technologies. Installation of equipment for reactor Zones R1/R2 dismantling (in particular, reactor channels). Installation of remote Controlled Mechanisms for D&D of Equipment in Zones with High Dose Rates and Equipment for reactor Zones R1/R2 dismantling (in particular, reactor channels). | <p>This project is mostly implemented in-house by INPP's own staff but it is planned to award external contracts for design and installation of reactor channel processing equipment.</p> <table border="1"> <tr> <td>✓</td> <td>In-house activities of INPP</td> </tr> <tr> <td>✓</td> <td>Purchase of technical assistance or design services</td> </tr> <tr> <td>✓</td> <td>Purchase of major equipment / installation</td> </tr> <tr> <td>✓</td> <td>Purchase of physical implementation works/services</td> </tr> </table> <p>The coming steps (2021-2022):<br/>1. To develop TS for D&amp;D tools procurement.<br/>2. To prepare EIAR and to agree it with State Institutions.<br/>3. To obtain a State institutions agreement to General Data Set.<br/>4. To prepare Technological Design, SAR and submit them to VATESI for agreement.</p> | ✓              | In-house activities of INPP | ✓ | Purchase of technical assistance or design services | ✓                   | Purchase of major equipment / installation | ✓ | Purchase of physical implementation works/services | CPMA, SBF and other |
| ✓                  | In-house activities of INPP  |  |  |                |                             |   |   |                     |  |   |  |                     |
| ✓                  | Purchase of technical assistance or design services                  |  |  |                |                             |   |   |                     |  |   |  |                     |
| ✓                  | Purchase of major equipment / installation                           |  |  |                |                             |   |   |                     |  |   |  |                     |
| ✓                  | Purchase of physical implementation works/services                   |  |  |                |                             |   |   |                     |  |   |  |                     |

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| ID                 | Name  |  |  |                |                             |   |   |                     |  |                     |
| (1)                | (2)   | (3)  | (4)  | (5)            |                             |   |   |                     |  |                     |
| P.2.1.2103         | Engineering & licensing for Reactor zone R3 Unit 1 and Unit 2 and RWISF development | <p>The objective of the project is to obtain necessary permits from public authorities. To achieve this a set of engineering and licensing documents for dismantling of reactors R3 zone must be prepared and coordinated with authorities.</p> <p>The short-term (~3 year) objective is to select an optimal dismantling and waste management concept, on the basis of which engineering and licensing works will continue.</p> | <table border="1"> <tr> <td>✓</td> <td>In-house activities of INPP</td> </tr> <tr> <td>✓</td> <td>Purchase of technical assistance or design services</td> </tr> <tr> <td>✓</td> <td>Purchase of physical implementation works/services</td> </tr> </table> <p>The coming steps (2021-2022):</p> <ol style="list-style-type: none"> <li>1. Phase 1 (R3D.01) service contracts signed.</li> <li>2. Methodologies for the implementation of Phase 1 contracts have been developed and agreed with INPP.</li> <li>3. The optimal option for the dismantling and waste management of the R3 area has been selected and the agreement of the stakeholders has been obtained.</li> </ol> | ✓              | In-house activities of INPP | ✓ | Purchase of technical assistance or design services | ✓                   | Purchase of physical implementation works/services | CPMA, SBF and other |
| ✓                  | In-house activities of INPP   |  |  |                |                             |   |   |                     |  |                     |
| ✓                  | Purchase of technical assistance or design services                                 |  |  |                |                             |   |   |                     |  |                     |
| ✓                  | Purchase of physical implementation works/services                                  |  |  |                |                             |   |   |                     |  |                     |
| P.2.1.2104         | Reactor zone R3 dismantling at Unit 1 and Unit 2                                    | This future project - planned start in October 2023, will include preparatory works (procurement of equipment, its installation, etc.) as well as dismantling of R3 zones of both reactors and pre-treatment of generated waste. A detailed scope is in planning stage   | No activities or support is currently foreseen.  | Not applicable |                             |   |   |                     |  |                     |
| P.2.2.2201         | Dismantling within the surveillance area  | Engineering research of decontamination and dismantling technologies; development of the design documentation and agreement by state institutions; procurement of equipment and consumables required for performance of works: preparatory works, decontamination and dismantling; radiological measurements during dismantling within the surveillance area.  | <table border="1"> <tr> <td>✓</td> <td>In-house activities of INPP</td> </tr> <tr> <td>✓</td> <td>Purchase of goods</td> </tr> </table> <p>The coming steps (2021-2022):</p> <ol style="list-style-type: none"> <li>1. To dismantle 711 tonnes of equipment during 2021.</li> <li>2. To dismantle 437 tonnes of equipment during 2022.</li> </ol>  | ✓              | In-house activities of INPP | ✓ | Purchase of goods                                   | CPMA, SBF and other |  |                     |
| ✓                  | In-house activities of INPP   |  |  |                |                             |   |   |                     |  |                     |
| ✓                  | Purchase of goods   |  |  |                |                             |   |   |                     |  |                     |
| P.2.2.2202         | Dismantling of utilities outside the surveillance area                              | Engineering research of dismantling technologies; development of the design documentation and agreement by state institutions, procurement of equipment and consumables required for performance of works, preparatory works and dismantling outside the surveillance area.  | No activities or support is currently foreseen.  | Not applicable |                             |   |   |                     |  |                     |



| Project Identifier       |   | Description   | Anticipated actions / Ignalina Programme support 2021-2022   | Funding |                             |                     |                                  |   |                             |                     |   |                            |
|--------------------------|---|---|--|---------|-----------------------------|---------------------|----------------------------------|---|-----------------------------|---------------------|---|----------------------------|
| ID                       | Name  |   |  |         |                             |                     |                                  |   |                             |                     |   |                            |
| (1)                      | (2)   | (3)   | (4)  | (5)     |                             |                     |                                  |   |                             |                     |   |                            |
| P.2.2.2203               | D&D in Block A1   | Development of the design documentation and agreement by state institutions; procurement of services, equipment and consumables: preparatory works, decontamination and dismantling, initial waste treatment; radiological measurements.  | <table border="1"> <tr> <td>✓</td> <td>In-house activities of INPP</td> </tr> <tr> <td>✓</td> <td>Purchase of technical assistance</td> </tr> <tr> <td>✓</td> <td>Purchase of major equipment</td> </tr> </table> <p>The coming steps (2021-2022):</p> <ol style="list-style-type: none"> <li>To dismantle 813 tonnes of equipment during 2021.</li> <li>To dismantle 960 tonnes of equipment during 2022.</li> </ol>  | ✓       | In-house activities of INPP | ✓                   | Purchase of technical assistance | ✓ | Purchase of major equipment | CPMA, SBF and other |   |                            |
| ✓                        | In-house activities of INPP   |   |  |         |                             |                     |                                  |   |                             |                     |   |                            |
| ✓                        | Purchase of technical assistance  |   |  |         |                             |                     |                                  |   |                             |                     |   |                            |
| ✓                        | Purchase of major equipment   |   |  |         |                             |                     |                                  |   |                             |                     |   |                            |
| P.2.2.2203.2.<br>1.03.04 | Purchase of Dismantling design and Dismantling of Drums-Separator                             | Within the scope of this sub-project, it is also planned to carry out the engineering for drums-separators dismantling, which going to be outsourced. Execution of DS dismantling works by contractor will either be separated into a dedicated project or carried out within the framework of projects 2203 and 2210.  | <table border="1"> <tr> <td>✓</td> <td>In-house activities of INPP</td> </tr> <tr> <td>✓</td> <td>Purchase of technical assistance</td> </tr> <tr> <td>✓</td> <td>Purchase of major equipment</td> </tr> <tr> <td>✓</td> <td>Purchase of services (outsourcing of drums-separators dismantling and associated engineering)</td> </tr> </table> <p>The coming steps (2021-2022): to develop technical specifications and procurement services for Drums-Separators engineering and dismantling.</p> | ✓       | In-house activities of INPP | ✓                   | Purchase of technical assistance | ✓ | Purchase of major equipment | ✓                   | Purchase of services (outsourcing of drums-separators dismantling and associated engineering) | IIDSF, CPMA, SBF and other |
| ✓                        | In-house activities of INPP   |   |  |         |                             |                     |                                  |   |                             |                     |   |                            |
| ✓                        | Purchase of technical assistance  |   |  |         |                             |                     |                                  |   |                             |                     |   |                            |
| ✓                        | Purchase of major equipment   |   |  |         |                             |                     |                                  |   |                             |                     |   |                            |
| ✓                        | Purchase of services (outsourcing of drums-separators dismantling and associated engineering) |   |  |         |                             |                     |                                  |   |                             |                     |   |                            |
| P.2.2.2204               | D&D in Block B1   | This project planned to start in July 2022. The scope- will include engineering research of decontamination and dismantling technologies; development of the design documentation and agreement by state institutions; procurement of equipment and consumables required for performance of works: preparatory works, decontamination and dismantling; radiological measurements during dismantling in Block B1. A detailed scope is in planning stage. | <table border="1"> <tr> <td>✓</td> <td>In-house activities of INPP</td> </tr> </table> <p>The coming steps (2022):</p> <ol style="list-style-type: none"> <li>EIAR preparation.</li> <li>SAR and TD preparation.</li> </ol>  | ✓       | In-house activities of INPP | CPMA, SBF and other |                                  |   |                             |                     |   |                            |
| ✓                        | In-house activities of INPP   |   |  |         |                             |                     |                                  |   |                             |                     |   |                            |

| Project Identifier |                                       | Description   | Anticipated actions / Ignalina Programme support 2021-2022  | Funding        |                             |   |                                       |                            |
|--------------------|---------------------------------------|---|---|----------------|-----------------------------|---|---------------------------------------|----------------------------|
| ID                 | Name                                  |   |   |                |                             |   |                                       |                            |
| (1)                | (2)                                   | (3)   | (4)   | (5)            |                             |   |                                       |                            |
| P.2.2.2205         | D&D in Block V1                       | <p>Engineering research of decontamination and dismantling technologies; development of the design documentation and agreement by state institutions; procurement of equipment and consumables required for performance of works: preparatory works, decontamination and dismantling; radiological measurements during dismantling in Block V1.</p> <p>According to the D&amp;D design, the equipment to be dismantled in Block V1 was divided into 3 parts depending on the time of dismantling:</p> <p>phase D1 – equipment (ventilation systems, electrical systems, compressed air systems, etc.) not necessary for Block A1 operation – already done.</p> <p>phase D2 – equipment which to be dismantled after all works in Block A1 will be completed and these systems will not be needed any more.</p> <p>phase D3 – demolition of structures and building.</p> <p>The project suspended till 2023.</p> | The support concerns - none   | Not applicable |                             |   |                                       |                            |
| P.2.2.2210         | D&D in Blocks A2 & V2                 | <p>Engineering research of decontamination and dismantling technologies; development of the design documentation and agreement by state institutions; procurement of equipment and consumables required for performance of works: preparatory works, decontamination and dismantling; radiological measurements.</p>  | <table border="1"> <tr> <td>✓</td> <td>In-house activities of INPP</td> </tr> <tr> <td>✓</td> <td>Purchase of major equipment and goods</td> </tr> </table> <p>The coming steps (2021-2022):</p> <ol style="list-style-type: none"> <li>1. Technological design and SAR preparation for equipment dismantling in Blocks A2 and V2 and submit them to VATESI.</li> <li>2. Obtaining of permission to dismantling in Blocks A2 and V2.</li> <li>3. To dismantle 300 tonnes of equipment during 2021.</li> <li>4. To dismantle 871 tonnes of equipment during 2022.</li> </ol> | ✓              | In-house activities of INPP | ✓ | Purchase of major equipment and goods | IIDSF, CPMA, SBF and other |
| ✓                  | In-house activities of INPP           |   |   |                |                             |   |                                       |                            |
| ✓                  | Purchase of major equipment and goods |   |   |                |                             |   |                                       |                            |
| P.2.2.2213         | D&D in Block G2                       | <p>Engineering research of decontamination and dismantling technologies; development of the design documentation and agreement by state institutions; procurement of equipment and consumables required for performance of works: preparatory works, decontamination and dismantling; radiological measurements during dismantling in Block G2.</p>   | <table border="1"> <tr> <td>✓</td> <td>In-house activities of INPP</td> </tr> <tr> <td>✓</td> <td>Purchase of major equipment and goods</td> </tr> </table> <p>The coming steps:</p> <p>To dismantle 51 tonnes of equipment during 2021 (project completion).</p>   | ✓              | In-house activities of INPP | ✓ | Purchase of major equipment and goods | CPMA, SBF and other        |
| ✓                  | In-house activities of INPP           |   |   |                |                             |   |                                       |                            |
| ✓                  | Purchase of major equipment and goods |   |   |                |                             |   |                                       |                            |

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|--------------------|---------------------------------------|--|---|---------|-----------------------------|---------------------|---------------------------------------|---------------------|
| ID                 | Name                                  |  |   |         |                             |                     |                                       |                     |
| (1)                | (2)                                   | (3)  | (4)   | (5)     |                             |                     |                                       |                     |
| P.2.2.2214         | D&D in Block D2                       | Engineering research of decontamination and dismantling technologies; development of the design documentation and agreement by state institutions; procurement of equipment and consumables required for performance of works: preparatory works, decontamination and dismantling; radiological measurements during dismantling in Block D2.   | <table border="1"> <tr> <td>✓</td> <td>In-house activities of INPP</td> </tr> <tr> <td>✓</td> <td>Purchase of major equipment and goods</td> </tr> </table> <p>The coming steps (2021-2022):</p> <ol style="list-style-type: none"> <li>To dismantle 508 tonnes of equipment during 2021.</li> <li>To dismantle 298 tonnes of equipment during 2022 (project completion).</li> </ol>  | ✓       | In-house activities of INPP | ✓                   | Purchase of major equipment and goods | CPMA, SBF and other |
| ✓                  | In-house activities of INPP           |  |   |         |                             |                     |                                       |                     |
| ✓                  | Purchase of major equipment and goods |  |   |         |                             |                     |                                       |                     |
| P.2.2.2219         | D&D in Bldg. 135/1.2, 140/1, 152/1,2  | Engineering research of decontamination and dismantling technologies; development of the design documentation and agreement with state institutions; procurement of equipment and consumables required for performance of works, preparatory works, decontamination and dismantling; radiological measurements during dismantling.   | <table border="1"> <tr> <td>✓</td> <td>In-house activities of INPP</td> </tr> <tr> <td>✓</td> <td>Purchase of goods</td> </tr> </table> <p>The coming steps (2021-2022):</p> <ol style="list-style-type: none"> <li>Preparation of TD and SAR for equipment dismantling in bldg. 152/1 a, b and submit them to VATESI.</li> <li>To receive the VATESI agreement of TD and SAR for equipment dismantling in bldg. 152/1 a, b.</li> </ol> | ✓       | In-house activities of INPP | ✓                   | Purchase of goods                     | CPMA, SBF and other |
| ✓                  | In-house activities of INPP           |  |   |         |                             |                     |                                       |                     |
| ✓                  | Purchase of goods                     |  |   |         |                             |                     |                                       |                     |
| P.2.3.2301         | Demolition of Unit 1 facilities       | <p>During the 1<sup>st</sup> stage of INPP buildings demolition, 51 objects in 33 groups (of 150 INPP identifiable buildings and structures) will be demolished by the end of 2026. The later stages include demolition of the remaining buildings and other structures. 2 INPP no-longer-used buildings/structures will be demolished under the project by the end of 2026. The following activities should be performed:</p> <ul style="list-style-type: none"> <li>Preparation of the design documentation.</li> <li>Design documentation agreement with State Institutions.</li> <li>Unit 1 buildings demolition according to design solutions.</li> <li>Final works.</li> </ul> | <table border="1"> <tr> <td>✓</td> <td>In-house activities of INPP</td> </tr> </table> <p>The coming steps (2021-2022):</p> <ol style="list-style-type: none"> <li>Preparation of TD and SAR for D&amp;D of engineering systems in Block D1.</li> <li>To dismantle 280 tonnes of equipment during 2021.</li> <li>To dismantle 106 tonnes of equipment during 2022.</li> </ol>   | ✓       | In-house activities of INPP | CPMA, SBF and other |                                       |                     |
| ✓                  | In-house activities of INPP           |  |   |         |                             |                     |                                       |                     |

| Project Identifier |  | Description  | Anticipated actions / Ignalina Programme support 2021-2022  | Funding |                             |   |   |                     |  |                     |
|--------------------|--|--|---|---------|-----------------------------|---|---|---------------------|--|---------------------|
| ID                 | Name   |  |   |         |                             |   |   |                     |  |                     |
| (1)                | (2)  | (3)  | (4)   | (5)     |                             |   |   |                     |  |                     |
| P.2.3.2302         | Demolition of Unit 2 facilities                        | <p>During the 1<sup>st</sup> stage of INPP building demolition, 51 objects in 33 groups (of 150 INPP identifiable buildings and structures) should be demolished by the end of 2026. The 2 buildings/structures from this list will be demolished under this project by the end of 2026. The following activities should be performed:</p> <ul style="list-style-type: none"> <li>• Preparation of the design documentation.</li> <li>• Design documentation agreement with State Institutions.</li> <li>• Unit 2 buildings demolition according to design solutions.</li> <li>• Final works.</li> </ul>   | <table border="1"> <tr> <td>✓</td> <td>In-house activities of INPP</td> </tr> <tr> <td>✓</td> <td>Purchase of goods</td> </tr> </table> <p>The coming steps (2021-2022):</p> <ol style="list-style-type: none"> <li>1. To demolition 4,000 tonnes of metal and concrete structures during 2021.</li> <li>2. To demolition 4,000 tonnes of metal and concrete structures during 2022.</li> <li>3. To dismantle 17 tonnes of equipment during 2021.</li> <li>4. To dismantle 150 tonnes of equipment during 2022.</li> </ol>  | ✓       | In-house activities of INPP | ✓ | Purchase of goods                                   | CPMA, SBF and other |  |                     |
| ✓                  | In-house activities of INPP                            |  |   |         |                             |   |   |                     |  |                     |
| ✓                  | Purchase of goods                                      |  |   |         |                             |   |   |                     |  |                     |
| P.2.3.2304         | Demolition of structures in the surveillance area      | <p>During the 1<sup>st</sup> stage of INPP building demolition, 51 objects in 33 groups (of 150 INPP identifiable buildings and structures) should be demolished by the end of 2026. The 26 buildings/structures from this list will be demolished under this project by the end of 2026. The following activities should be performed:</p> <ul style="list-style-type: none"> <li>• Preparation of the design documentation.</li> <li>• Design documentation agreement with State Institutions.</li> <li>• Structures in the surveillance area demolition according to design solutions.</li> <li>• Removal of all waste ensuring its appropriate treatment.</li> <li>• Final works.</li> </ul>     | <table border="1"> <tr> <td>✓</td> <td>In-house activities of INPP</td> </tr> <tr> <td>✓</td> <td>Purchase of technical assistance or design services</td> </tr> </table> <p>The coming steps (2021-2022):</p> <ol style="list-style-type: none"> <li>1. TS preparation for procurement of design development services for dismantling and demolition of 330 kV high voltage power lines.</li> <li>2. Design development for demolition of INPP buildings 161, 161/1.</li> <li>3. Demolish Building 161 and landscaped area.</li> <li>4. Demolish Building 161/1 and landscaped area.</li> </ol>  | ✓       | In-house activities of INPP | ✓ | Purchase of technical assistance or design services | CPMA, SBF and other |  |                     |
| ✓                  | In-house activities of INPP                            |  |   |         |                             |   |   |                     |  |                     |
| ✓                  | Purchase of technical assistance or design services    |  |   |         |                             |   |   |                     |  |                     |
| P.2.3.2305         | Demolition of structures outside the surveillance area | <p>During the 1<sup>st</sup> stage of INPP building demolition, 51 objects in 33 groups (of 150 INPP identifiable buildings and structures) should be demolished by the end of 2026. The 20 buildings/structures from this list will be demolished under the project by the end of 2026. The following activities should be performed:</p> <ul style="list-style-type: none"> <li>• Preparation of the design documentation.</li> <li>• Design documentation agreement with State Institutions.</li> <li>• Structures outside the surveillance area demolition according to design solutions.</li> <li>• Removal of all waste ensuring its appropriate treatment.</li> <li>• Final works.</li> </ul> | <table border="1"> <tr> <td>✓</td> <td>In-house activities of INPP</td> </tr> <tr> <td>✓</td> <td>Purchase of technical assistance or design services</td> </tr> <tr> <td>✓</td> <td>Purchase of physical implementation works/services</td> </tr> </table> <p>The coming steps (2021-2022):</p> <ol style="list-style-type: none"> <li>1. Prepared demolition design for Buildings 3, 4, 4a, 5, 6, 6a, 7 and 13.</li> <li>2. Prepared demolition design for Buildings 75 and 75a.</li> <li>3. Demolish Buildings 3, 4, 4a, 5, 6, 6a, 7, 13 and landscaped area.</li> <li>4. Demolish Buildings 75, 75a and landscaped area.</li> </ol> | ✓       | In-house activities of INPP | ✓ | Purchase of technical assistance or design services | ✓                   | Purchase of physical implementation works/services | CPMA, SBF and other |
| ✓                  | In-house activities of INPP                            |  |   |         |                             |   |   |                     |  |                     |
| ✓                  | Purchase of technical assistance or design services    |  |   |         |                             |   |   |                     |  |                     |
| ✓                  | Purchase of physical implementation works/services     |  |   |         |                             |   |   |                     |  |                     |

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| (1)                | (2)  | (3)  | (4)   | (5)     |                             |   |  |                     |
| P.2.3.2306         | Demolition of Building 129                         | Preparatory works including reconstruction works of Gallery 174V and demolition of the Building 129.   | <table border="1"> <tr> <td>✓</td> <td>In-house activities of INPP</td> </tr> <tr> <td>✓</td> <td>Purchase of physical implementation works/services</td> </tr> </table> <p>The coming steps (2021-2022):</p> <ol style="list-style-type: none"> <li>To perform reconstruction works of Building 130/2.</li> <li>To perform INPP protected area security fence reconstruction works.</li> <li>To perform reconstruction works of the physical security system for the INPP protected area.</li> </ol> | ✓       | In-house activities of INPP | ✓ | Purchase of physical implementation works/services | CPMA, SBF and other |
| ✓                  | In-house activities of INPP                        |  |   |         |                             |   |  |                     |
| ✓                  | Purchase of physical implementation works/services |  |   |         |                             |   |  |                     |
| <b>P.3</b>         | <b>Spent Nuclear Fuel Handling Programme</b>       |  |   |         |                             |   |  |                     |
| P.3.1.3101         | Spent nuclear fuel handling in Unit 1              | Safe operation of spent nuclear fuel transport and handling; classification of uptight spent nuclear fuel; preparatory works of spent nuclear fuel to be loaded into the shielding containers for transportation to the ISFSF; procurement of spare parts and materials.                           | <table border="1"> <tr> <td>✓</td> <td>In-house activities of INPP</td> </tr> <tr> <td>✓</td> <td>Purchase of goods</td> </tr> </table> <p>The coming steps (2021):</p> <ol style="list-style-type: none"> <li>To unload the 92 damaged SFAs from Unit 1 SFP during 2021 (completion).</li> </ol>   | ✓       | In-house activities of INPP | ✓ | Purchase of goods                                  | CPMA, SBF and other |
| ✓                  | In-house activities of INPP                        |  |   |         |                             |   |  |                     |
| ✓                  | Purchase of goods                                  |  |   |         |                             |   |  |                     |
| P.3.1.3102         | Spent nuclear fuel handling in Unit 2              | Safe operation of spent and remained unused fresh nuclear fuel transport and handling; classification of uptight spent nuclear fuel; preparatory works of spent nuclear fuel to be loaded into the shielding containers for transportation to the ISFSF; procurement of spare parts and materials. | <table border="1"> <tr> <td>✓</td> <td>In-house activities of INPP</td> </tr> <tr> <td>✓</td> <td>Purchase of goods</td> </tr> </table> <p>The coming steps (2021-2022):</p> <ol style="list-style-type: none"> <li>To unload the 103 SFAs (including remain undamaged SFAs) from Unit 2 SFP during 2021.</li> <li>To unload the 117 damaged SFAs from Unit 2 SFP during 2022 (completion).</li> </ol>  | ✓       | In-house activities of INPP | ✓ | Purchase of goods                                  | CPMA, SBF and other |
| ✓                  | In-house activities of INPP                        |  |   |         |                             |   |  |                     |
| ✓                  | Purchase of goods                                  |  |   |         |                             |   |  |                     |

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| ID                 | Name  |  |   |         |                             |   |  |                     |  |                            |
| (1)                | (2)   | (3)  | (4)   | (5)     |                             |   |  |                     |  |                            |
| P.3.2.3103         | Nuclear Fuel Debris recovery from the bottom of SFP in the Units 1 and 2                        | Design, manufacture, testing, delivery to INPP of new equipment and/or modification of existing equipment for (i) sludge / corrosion product removal from the SFP bottom and (ii) filtration of pools water in both Units SFP. Design, manufacture, test and supply of the underwater equipment for performing the SFP underwater survey to identify, locate and record the position of fuel rods and pellets/debris in both Units SFP. Design, procurement, manufacture, inspection, test, supply, of additional new equipment required for the removal of scrap material and fuel rod tubes, and parts of fuel rods and pellets from the bottom of the Unit 1 and 2 SFP. Modification of the INPP Cask Database in respect of accountancy of hard damage fuel including fuel debris. Inspection and removal of spent nuclear fuel debris from Unit 1 and 2 SFP, loading into casks and transportation to the storage facilities. | <table border="1"> <tr> <td>✓</td> <td>In-house activities of INPP</td> </tr> <tr> <td>✓</td> <td>Purchase of major equipment / installation</td> </tr> <tr> <td>✓</td> <td>Purchase of physical implementation works/services</td> </tr> </table> <p>The coming steps (2021-2022):</p> <ol style="list-style-type: none"> <li>In 2021 debris removal from the bottom of Unit 1 SFP.</li> <li>In 2022 debris removal from the bottom of Unit 2 SFP (completion).</li> </ol>     | ✓       | In-house activities of INPP | ✓ | Purchase of major equipment / installation | ✓                   | Purchase of physical implementation works/services | IIDSF, CPMA, SBF and other |
| ✓                  | In-house activities of INPP   |  |   |         |                             |   |  |                     |  |                            |
| ✓                  | Purchase of major equipment / installation  |  |   |         |                             |   |  |                     |  |                            |
| ✓                  | Purchase of physical implementation works/services  |  |   |         |                             |   |  |                     |  |                            |
| P.3.2.3200         | Spent nuclear fuel transportation to storage sites  | Removal and transportation of spent nuclear fuel to the storage sites. Removal of all spent nuclear fuel from Unit 1 (start in October 2016, scheduled to be finished in August 2021). Removal of all spent nuclear fuel from Unit 2 (start in October 2016), scheduled to be finished in October 2022).   | <table border="1"> <tr> <td>✓</td> <td>In-house activities of INPP</td> </tr> <tr> <td>✓</td> <td>Purchase of goods</td> </tr> </table> <p>The coming steps (2021-2022):</p> <ol style="list-style-type: none"> <li>In 2021, 11 casks from Units 1, 2 should be transported to ISFSF.</li> <li>In 2022, 7 casks from Units 2 should be transported to ISFSF (completion).</li> </ol>  | ✓       | In-house activities of INPP | ✓ | Purchase of goods                          | CPMA, SBF and other |  |                            |
| ✓                  | In-house activities of INPP   |  |   |         |                             |   |  |                     |  |                            |
| ✓                  | Purchase of goods   |  |   |         |                             |   |  |                     |  |                            |
| P.3.3.3300         | Spent nuclear fuel handling in storage sites  | Storage and handling of shielding containers within the conditions for safe operation of spent fuel Dry Storage and Interim spent fuel storage facility (ISFSF); periodic control of tightness of CASTOR-RBMK cask; control and monitoring of radiation safety and effect on the environment operations of spent fuel dry storage systems and equipment; procurement of repair parts and materials.  | <table border="1"> <tr> <td>✓</td> <td>In-house activities of INPP</td> </tr> <tr> <td>✓</td> <td>Purchase of goods</td> </tr> <tr> <td>✓</td> <td>Purchase of physical implementation works/services</td> </tr> </table> <p>The coming steps (2021-2022):</p> <ol style="list-style-type: none"> <li>To ensure safe storage of spent fuel casks loaded into Spent Fuel Dry Storage Facility and ISFSF.</li> <li>To ensure absence of violations of safe conditions.</li> </ol> | ✓       | In-house activities of INPP | ✓ | Purchase of goods                          | ✓                   | Purchase of physical implementation works/services | CPMA, SBF and other        |
| ✓                  | In-house activities of INPP   |  |   |         |                             |   |  |                     |  |                            |
| ✓                  | Purchase of goods   |  |   |         |                             |   |  |                     |  |                            |
| ✓                  | Purchase of physical implementation works/services  |  |   |         |                             |   |  |                     |  |                            |
| <b>P.4</b>         | <b>Waste Treatment Programme (except for the initial processing of solid radioactive waste)</b> |  |   |         |                             |   |  |                     |  |                            |

| Project Identifier |   | Description   | Anticipated actions / Ignalina Programme support 2021-2022   | Funding |                             |   |   |                     |  |                     |
|--------------------|---|---|--|---------|-----------------------------|---|---|---------------------|--|---------------------|
| ID                 | Name  |   |  |         |                             |   |   |                     |  |                     |
| (1)                | (2)   | (3)   | (4)  | (5)     |                             |   |   |                     |  |                     |
| P.4.1.4100         | Non-radioactive waste handling                      | Collection and segregation, inventory and characterisation, treatment of the waste.   | <table border="1"> <tr> <td>✓</td> <td>In-house activities of INPP</td> </tr> <tr> <td>✓</td> <td>Purchase of technical assistance or design services</td> </tr> <tr> <td>✓</td> <td>Purchase of physical implementation works/services</td> </tr> </table> <p>The coming steps (2021-2022):</p> <ol style="list-style-type: none"> <li>1. 4,191 m<sup>3</sup> of Class 0 SRW should be free released from INPP territory during 2021.</li> <li>2. 7,586 m<sup>3</sup> of Class 0 SRW should be free released from INPP territory during 2022.</li> </ol>  | ✓       | In-house activities of INPP | ✓ | Purchase of technical assistance or design services | ✓                   | Purchase of physical implementation works/services | CPMA, SBF and other |
| ✓                  | In-house activities of INPP                         |   |  |         |                             |   |   |                     |  |                     |
| ✓                  | Purchase of technical assistance or design services |   |  |         |                             |   |   |                     |  |                     |
| ✓                  | Purchase of physical implementation works/services  |   |  |         |                             |   |   |                     |  |                     |
| P.4.2.4202         | Solid radioactive waste handling                    | Collection and segregation, inventory and characterization, treatment of the SRW, interim storage of the conditioned waste. | <table border="1"> <tr> <td>✓</td> <td>In-house activities of INPP</td> </tr> <tr> <td>✓</td> <td>Purchase of physical implementation works/services</td> </tr> <tr> <td>✓</td> <td>Purchase of goods</td> </tr> </table> <p>The coming steps (2021-2022):</p> <ol style="list-style-type: none"> <li>1. To handle 1,787 m<sup>3</sup> of Class A SRW, 129 m<sup>3</sup> of Classes B and C SRW, 100 m<sup>3</sup> of Classes D and E SRW during 2021.</li> <li>2. To handle 2,124 m<sup>3</sup> of Class A SRW, 144 m<sup>3</sup> of Classes B and C SRW, 66 m<sup>3</sup> of Classes D and E SRW during 2022.</li> </ol> | ✓       | In-house activities of INPP | ✓ | Purchase of physical implementation works/services  | ✓                   | Purchase of goods                                  | CPMA, SBF and other |
| ✓                  | In-house activities of INPP                         |   |  |         |                             |   |   |                     |  |                     |
| ✓                  | Purchase of physical implementation works/services  |   |  |         |                             |   |   |                     |  |                     |
| ✓                  | Purchase of goods                                   |   |  |         |                             |   |   |                     |  |                     |
| P.4.3.4204         | Disposal of radioactive waste                       | Transportation of radioactive waste and safety disposal them to storage facilities.   | <table border="1"> <tr> <td>✓</td> <td>In-house activities of INPP</td> </tr> <tr> <td>✓</td> <td>Purchase of goods</td> </tr> </table> <p>The coming steps (2022):</p> <ol style="list-style-type: none"> <li>1. To dispose 3,500 m<sup>3</sup> of Class A SRW to B19-2 during 2022.</li> <li>2. To dispose 264 m<sup>3</sup> of Classes B and C SRW to B4 during 2021.</li> <li>3. To dispose 297 m<sup>3</sup> of Classes B and C SRW to B4 during 2022.</li> </ol>   | ✓       | In-house activities of INPP | ✓ | Purchase of goods                                   | CPMA, SBF and other |  |                     |
| ✓                  | In-house activities of INPP                         |   |  |         |                             |   |   |                     |  |                     |
| ✓                  | Purchase of goods                                   |   |  |         |                             |   |   |                     |  |                     |

| Project Identifier |  | Description   | Anticipated actions / Ignalina Programme support 2021-2022  | Funding |                             |   |  |                     |
|--------------------|--|---|---|---------|-----------------------------|---|--|---------------------|
| ID                 | Name   |   |   |         |                             |   |  |                     |
| (1)                | (2)  | (3)   | (4)   | (5)     |                             |   |  |                     |
| P.4.3.4300         | Liquid radioactive waste handling  | Collection and segregation, inventory and characterisation, treatment of the liquid radioactive waste, interim storage of the conditioned waste. Installation of energy saving equipment for liquid radioactive waste management. | <table border="1"> <tr> <td>✓</td> <td>In-house activities of INPP</td> </tr> <tr> <td>✓</td> <td>Purchase of containers and drums</td> </tr> </table> <p>The coming steps (2021-2022):</p> <ol style="list-style-type: none"> <li>1. Contract signed for the purchase of vacuum energy-efficient evaporators.</li> <li>2. To cement 250 m<sup>3</sup> of LRW during 2021.</li> <li>3. To cement 250 m<sup>3</sup> of LRW during 2022.</li> <li>4. To dispose 1,450 m<sup>3</sup> of Classes B and C LRW to interim storage facilities during 2021.</li> <li>5. To dispose 1,450 m<sup>3</sup> of Classes B and C LRW to interim storage facilities during 2022.</li> </ol> | ✓       | In-house activities of INPP | ✓ | Purchase of containers and drums                   | CPMA, SBF and other |
| ✓                  | In-house activities of INPP  |   |   |         |                             |   |  |                     |
| ✓                  | Purchase of containers and drums   |   |   |         |                             |   |  |                     |
| <b>P.5</b>         | <b>Post-Operation Programme</b>  |   |   |         |                             |   |  |                     |
| P.5.1              | Operation of facilities remaining in operation throughout the entire decommissioning | Operation and maintenance of the existing facilities, systems and equipment which are left in operation.  | <table border="1"> <tr> <td>✓</td> <td>In-house activities of INPP</td> </tr> <tr> <td>✓</td> <td>Purchase of physical implementation works/services</td> </tr> </table> <p>The coming steps (2021-2022):<br/>Safe operation of INPP systems and facilities.</p>  | ✓       | In-house activities of INPP | ✓ | Purchase of physical implementation works/services | CPMA, SBF and other |
| ✓                  | In-house activities of INPP  |   |   |         |                             |   |  |                     |
| ✓                  | Purchase of physical implementation works/services                                   |   |   |         |                             |   |  |                     |
| P.5.2              | Maintenance of to be decommissioned facilities up to their dismantling/demolition    | Care, maintenance and supervisory control of the designed characteristics of equipment decommissioning of which is envisaged in the DP.   | <table border="1"> <tr> <td>✓</td> <td>In-house activities of INPP</td> </tr> <tr> <td>✓</td> <td>Purchase of physical implementation works/services</td> </tr> </table> <p>The coming steps:<br/>Maintenance of 63,272 elements<sup>2</sup> of INPP systems and facilities during 2021.</p>  | ✓       | In-house activities of INPP | ✓ | Purchase of physical implementation works/services | CPMA, SBF and other |
| ✓                  | In-house activities of INPP  |   |   |         |                             |   |  |                     |
| ✓                  | Purchase of physical implementation works/services                                   |   |   |         |                             |   |  |                     |

<sup>2</sup> Maintenance of activities implemented within the frames of the Megaproject Programmes P.0, P.1, P.2, P.3, P.4, P.5.



| Project Identifier |   | Description  | Anticipated actions / Ignalina Programme support 2021-2022  | Funding |                             |   |   |   |  |   |  |                     |
|--------------------|---|--|---|---------|-----------------------------|---|---|---|--|---|--|---------------------|
| ID                 | Name  |  |   |         |                             |   |   |   |  |   |  |                     |
| (1)                | (2)   | (3)  | (4)   | (5)     |                             |   |   |   |  |   |  |                     |
| P.5.3.             | Energy saving                                       | Optimization and saving of energy and other resources consumption. | <table border="1"> <tr> <td>✓</td> <td>In-house activities of INPP</td> </tr> <tr> <td>✓</td> <td>Purchase of technical assistance or design services</td> </tr> <tr> <td>✓</td> <td>Purchase of major equipment / installation</td> </tr> <tr> <td>✓</td> <td>Purchase of physical implementation works/services</td> </tr> </table> <p>The coming steps (2021-2022):</p> <ol style="list-style-type: none"> <li>Energy resources saving (in 2021): 79,4 % compared to 2016</li> <li>Modernization of the steam boiler house: <ul style="list-style-type: none"> <li>TD preparation for the modernization of the steam boiler house.</li> <li>Permission receiving for the construction of the steam boiler house.</li> <li>Contract signing for DD preparation and construction of the steam boiler house.</li> <li>DD preparation of the steam boiler house and expertise performing of the DD structural part.</li> </ul> </li> <li>Evaluation of the performed measures regarding optimization of the ventilation systems and heat consumption in Bldg.101/1,2.</li> <li>Modernization of Technical water supply system for consumers in Bldgs. 130/1-2, 156 and 159.</li> </ol> | ✓       | In-house activities of INPP | ✓ | Purchase of technical assistance or design services | ✓ | Purchase of major equipment / installation | ✓ | Purchase of physical implementation works/services | CPMA, SBF and other |
| ✓                  | In-house activities of INPP                         |  |   |         |                             |   |   |   |  |   |  |                     |
| ✓                  | Purchase of technical assistance or design services |  |   |         |                             |   |   |   |  |   |  |                     |
| ✓                  | Purchase of major equipment / installation          |  |   |         |                             |   |   |   |  |   |  |                     |
| ✓                  | Purchase of physical implementation works/services  |  |   |         |                             |   |   |   |  |   |  |                     |

| Project Identifier |                          | Description  | Anticipated actions / Ignalina Programme support 2021-2022   | Funding |
|--------------------|--------------------------|--|--|---------|
| ID                 | Name                     |  |  |         |
| (1)                | (2)                      | (3)  | (4)  | (5)     |
| FPS from MoI       | Fire protection services | <p>Fire protection services performed by Ministry of Interior of the Republic of Lithuania include the fire safety of nuclear energy facilities, firefighting, rescue of people and property, and reduction of the consequences of fires; state fire supervision of nuclear energy facilities; co-ordinate the fire safety requirements for safety-critical structures, systems and components in accordance with regulatory requirements; co-ordinate fire safety training programs for employees of nuclear power facilities and participate in inspections of the knowledge of the employees of these facilities.</p> <p>The major amount of fire protection services consists of remuneration for employees. On-duty staff number is regulated by Standard of Fire protection approved by Government. Other expenses consist of utilities, office supplies, travel expenses, training.</p> | <ul style="list-style-type: none"> <li>- Monitoring and reacting to fire alarms activation at INPP and nuclear facilities.</li> <li>- Perform on-duty shifts training in INPP facilities.</li> <li>- Control of dismantling works from fire protection aspect and control other preventative actions.</li> </ul> | SBF     |

## 2.2 Significant milestones 2021-2022

The table as follows provides an overview of milestones to achieve in the 2 years. It includes the drafting and submission of all grant agreements or equivalent, essential deliverables important for the continuation of the programme and procurement procedures of higher value.

| ID                | Project /Activities/ Milestone  | Achievement date at 2021 | Achievement date at 2022 |
|-------------------|---|--------------------------|--------------------------|
| <b>P.0</b>        | <b>Enterprise Activity Organising Programme</b>   |                          |                          |
|                   | Draft Grant Application ADA.22 submitted to entrusted entity  | 30-09-2021               |                          |
|                   | Grant Application ADA.22 submitted to Monitoring Committee  | 30-11-2021               |                          |
|                   | Draft Grant Application ADA.23 submitted to entrusted entity  |                          | 30-09-2022               |
|                   | Grant Application ADA.23 submitted to Monitoring Committee  |                          | 30-11-2022               |
| <b>P.1.1.1102</b> | <b>Radiological characterisation</b>  |                          |                          |
|                   | <i>Procurement of engineering research services for waste accumulated on the Industrial Waste Landfill</i>                                    |                          |                          |
|                   | Technical specification and procurement documents for procurement of service agreed with CPMA   | 07-05-2021               |                          |
| <b>P.1.2.1206</b> | <b>B19-2 - Landfill Facility for short-lived very low level waste</b>   |                          |                          |
|                   | <i>Procurement of engineering barrier installation works for the first campaigns radioactive waste packaging placement campaign</i>           |                          |                          |
|                   | Technical specification and procurement documents for procurement of service/works agreed with CPMA   | 07-10-2021               |                          |
|                   | <i>Procurement of fork-lift container loader with a lifting capacity of 25 tonnes and loader-excavator equipped with the articulated boom</i> |                          |                          |
|                   | Technical specification and procurement documents for procurement of goods agreed with CPMA   | 22-11-2021               |                          |
| <b>P.1.2.1207</b> | <b>B25 - Near surface repository for low and intermediate level short-lived radioactive waste</b>   |                          |                          |
|                   | <i>Procurement of the design and construction work for B25 engineering structures sections</i>  |                          |                          |
|                   | Technical specification and procurement documents for procurement of service agreed with CPMA   | 13-09-2021               |                          |
|                   | <i>Procurement of design and construction work for B25 technological road</i>   |                          |                          |
|                   | Technical specification and procurement documents for procurement of service agreed with CPMA   | 09-10-2021               |                          |
|                   | <i>Procurement of vehicles</i>  |                          |                          |
|                   | Technical specification and procurement documents for procurement of goods agreed with CPMA   | 19-11-2021               |                          |
|                   | <i>Procurement of repository construction work</i>  |                          |                          |
|                   | Conclusion of the Contract  |                          | 03-01-2022               |
|                   | <i>Procurement of scientific justification and design services for B25 engineering barrier mock-up</i>  |                          |                          |
|                   | Technical specification and procurement documents for procurement of service agreed with CPMA   |                          | 17-01-2022               |
| <b>P.1.2.1221</b> | <b>Optimization of electric power supply schemes for INPP consumers</b>   |                          |                          |
|                   | <i>Procurement of general expertise services for technical design (INPP part)</i>   |                          |                          |

| ID                | Project /Activities/ Milestone   | Achievement date at 2021 | Achievement date at 2022 |
|-------------------|--|--------------------------|--------------------------|
|                   | Technical specification and procurement documents for procurement of services agreed with CPMA   | 19-04-2021               |                          |
|                   | <i>Procurement of construction works and design (Phase I) for electric power supply from 110/6 kV transformer substation</i>                 |                          |                          |
|                   | Technical specification and procurement documents for procurement of services agreed with CPMA   | 29-04-2021               |                          |
|                   | <i>Procurement of 110/6 kV substation and 110 kV airline construction work (INPP part)</i>   |                          |                          |
|                   | Technical specification and procurement documents for procurement of services agreed with CPMA   |                          | 06-01-2022               |
| <b>P.1.2.1230</b> | <b>Installation of a new modular boiler house to meet the heating needs of B1, B3.4 objects</b>  |                          |                          |
|                   | <i>Procurement of design services for modular gas boiler room</i>  |                          |                          |
|                   | Technical specification and procurement documents for procurement of services agreed with CPMA   | 06-09-2021               |                          |
| <b>P.2.1.2101</b> | <b>Unit 1 reactor facilities dismantling (areas R1 and R2, UP01 Unit 1)</b>  |                          |                          |
|                   | <i>Procurement of Remote Controlled Mechanisms (RCM.01)</i>  |                          |                          |
|                   | Draft Grant Application fiche RCM.01 agreed with CPMA  | 20-09-2021               |                          |
|                   | Technical specification and procurement documents for procurement of services/works agreed with CPMA   | 08-11-2021               |                          |
| <b>P.2.1.2102</b> | <b>Unit 2 reactor facilities dismantling (areas R1 and R2, UP01 Unit 2)</b>  |                          |                          |
|                   | <i>RZD.01 Procurement for reactor Zones R1/R2 dismantling (in particular, reactor channels)</i>  |                          |                          |
|                   | Draft Grant Application fiche RZD.01 agreed with CPMA  |                          | 31-03-2022               |
| <b>P.2.1.2103</b> | <b>Engineering &amp; licensing for Reactor zone R3 Unit 1 and Unit 2 and RWISF development</b>   |                          |                          |
|                   | <i>Procurement of TSG and R3D services (FA + Stage 1)</i>  |                          |                          |
|                   | Procurement documents for procurement of services/works agreed with CPMA   | 09-03-2021               |                          |
|                   | Engineering services   |                          |                          |
|                   | Technical specification and procurement documents for procurement of services agreed with CPMA   | 25-05-2021               |                          |
| <b>P.2.2.2201</b> | <b>Dismantling within the surveillance area</b>  |                          |                          |
|                   | <i>Procurement of development of technical task for the design and execution works of the demolition for 330 kV power transmission lines</i> |                          |                          |
|                   | Technical specification and procurement documents for procurement of services agreed with CPMA   | 27-09-2021               |                          |
| <b>P.2.2.2203</b> | <b>D&amp;D in Block A1</b>   |                          |                          |
|                   | <i>Grant Application DDS.01 submitted to Monitoring Committee</i>  | 30-09-2021               |                          |
|                   | Signed contract for drums-separators dismantling engineering and dismantling services  |                          | 05-12-2022               |
| <b>P.2.3.2302</b> | <b>Demolition of Unit 2 facilities</b>   |                          |                          |
|                   | <i>Procurement of design and demolition services for Bldg. 117/2 and gallery 173/2</i>   |                          |                          |
|                   | Technical specification and procurement documents for procurement of services/works agreed with CPMA   |                          | 15-08-2022               |

| <b>ID</b>         | <b>Project /Activities/ Milestone</b>  | <b>Achievement date at 2021</b> | <b>Achievement date at 2022</b> |
|-------------------|--|---------------------------------|---------------------------------|
| <b>P.2.3.2304</b> | <b>Demolition of structures in the surveillance area</b>   |                                 |                                 |
|                   | <i>Procurement of design and demolition services for Bldg. 161, 161/1, Bitumen Storehouse</i>  |                                 |                                 |
|                   | Technical specification and procurement documents for procurement of services/works agreed with CPMA   | 02-03-2021                      |                                 |
|                   | <i>Procurement of design and demolition services for Bldg. 437/1, pumping station</i>  |                                 |                                 |
|                   | Technical specification and procurement documents for procurement of services/works agreed with CPMA   |                                 | 18-05-2022                      |
|                   | <i>Procurement of design and demolition services for Bldg. 260, Metal Storehouse with Parking</i>  |                                 |                                 |
|                   | Technical specification and procurement documents for procurement of services/works agreed with CPMA   |                                 | 22-07-2022                      |
| <b>P.2.3.2305</b> | <b>Demolition of structures outside the surveillance area</b>  |                                 |                                 |
|                   | <i>Procurement of design and demolition services for Bldg. 75, 75 3, 4, 4a, 5, 6, 6a, 7</i>  |                                 |                                 |
|                   | Technical specification and procurement documents for procurement of services/works agreed with CPMA   | 02-03-2021                      |                                 |
|                   | <i>Procurement of demolition works for Bldg. 21</i>  |                                 |                                 |
|                   | Technical specification and procurement documents for procurement of services/works agreed with CPMA   |                                 | 15-03-2022                      |
|                   | <i>Procurement of demolition works for Bldg. 63</i>  |                                 |                                 |
|                   | Technical specification and procurement documents for procurement of services/works agreed with CPMA   |                                 | 16-08-2022                      |
| <b>P.2.3.2306</b> | <b>Demolition of Building 129</b>  |                                 |                                 |
|                   | Technical specification and procurement documents for procurement of services/works agreed with CPMA   | 17-05-2021                      |                                 |
| <b>P.4.2.4202</b> | <b>Solid radioactive waste handling</b>  |                                 |                                 |
|                   | <i>Procurement of used sealed sources of ionizing radiation and radioactive hazardous waste acceptance to B19/2 and determination of Waste acceptance criteria (B25), and its justification services</i> |                                 |                                 |
|                   | Grant Application TSO.02 signed  | 26-03-2021                      |                                 |
|                   | Procurement of ILW – LL Containers   |                                 |                                 |
|                   | Technical specification and procurement documents for procurement of goods agreed with CPMA  | 11-10-2021                      |                                 |
| <b>P.4.3.4300</b> | <b>Liquid radioactive waste handling</b>   |                                 |                                 |
|                   | <i>Procurement of vacuum energy-efficient evaporator apparatus</i>   |                                 |                                 |
|                   | Technical specification and procurement documents for procurement of services/works agreed with CPMA   | 02-07-2021                      |                                 |

### 3 DISSEMINATION OF KNOWLEDGE

The activities of the INPP are based on and depend on the knowledge of qualified personnel. The personnel working at the INPP have extensive experience in the construction and operation of nuclear facilities, so it is important that this knowledge, as well as the knowledge gained during decommissioning, be stored and properly used. For this purpose, a system of accumulating and storing knowledge is being introduced and actions are being taken to preserve the critical knowledge of employees, aimed at identifying, transferring and preserving specific employees with critical (unique) knowledge that are important for the INPP activities. The methodology was developed that identifies employees with critical knowledge and skills, evaluates volume and criticality of this knowledge. In order to preserve the knowledge / skills of identified critical personnel Individual action plans are developed and implemented in accordance with the program of accumulation and preservation of knowledge at INPP.

To continue activities on preservation of INPP critical knowledge the following steps are planned in 2021 – 2022:

- to carry out measures in accordance with 2019 - 2020 approved plans to preserve the critical knowledge / skills of INPP employees within the time frames specified in individual action plans.
- to develop the individual plans for the preservation and transfer of critical knowledge / skills of these employees according to the List of INPP critical personnel approved in 2020, and initiate their implementation.
- to review the List of INPP critical employees after the implementation of the measures planned for 2021.

The dissemination of INPP knowledge at EU level is implemented during participation of INPP employees in IAEA events (technical meetings, workshops, conferences etc.), in technical visits for experience exchange with other nuclear facilities colleagues.

Finally, as of 2021 a specific knowledge product will be developed each year by the Ignalina site in order to share knowledge matured in the past years. A Knowledge Product is a tangible output (document, service, event, etc.) of prepared knowledge that enables action of selected users.

For the purpose, a process aiming at identifying, managing, and sharing knowledge efficiently and routinely in the frame of the NDAP will be defined and shared with NDAP sites. It will describe the steps toward the development and sharing of relevant, actionable, impactful, and valuable knowledge products for EU stakeholders, focusing on decommissioning operators and other EU stakeholders as secondary targets. It will support the collection and sharing of a wide range of knowledge experiences on decommissioning and waste management governance issues, managerial best practices, and technological challenges, with a view to develop potential EU synergies. It will also provide tools and guidance for effective implementation in Ignalina (INPP), Kozloduy (KNPP) and Bohunice NPPs (BNPP). The process will be divided in 6 steps:

**Step 1: ACQUIRE** Identification and capture of Knowledge Inputs. The first step consists of the identification and capture of experiences, lessons learned and project feedback, using the existing channels and sources at the sites and new channel, such as the Knowledge Capture Sessions.

**Step 2: CATEGORISE** Categorisation of Knowledge Inputs. Inputs collected in Step 1 are categorised using the specific criteria, scoring methodology and tools. Existing methods in place to classify knowledge, like criticality analysis, may serve as a basis to assign scores based on the new criteria.

**Step 3: STORE** Record and Storage Knowledge Inputs. All inputs are stored on the current document system of each plant as usual. Selected, sharable inputs are documented and uploaded to the EC Knowledge Input Matrix.

**Step 4: DEVELOP** Development of Knowledge Products. This step focuses on the selection and development of knowledge products, using the inputs collected and categorised in the previous steps and the tools and guidance provided.

**Step 5: SHARE** Sharing and monitoring of Knowledge Products. Once developed, Knowledge Products are documented and monitored using the platform Knowledge Product Matrix.

**Step 6: IMPROVE** Continuous improvement & Sustainability of the process. Feedback from knowledge product users is gather-using formats defined. Value is measured and recorded in the EC Knowledge Product Matrix, and feedback is used to update process guidance and training to improve future products.

In 2021, the knowledge product to develop at Ignalina site will be the analysis of different technologies for handling liquid radioactive waste, comparing bituminisation and cementation. The knowledge product to be developed in 2022 will be decided on the basis of the experience acquired in 2021.

As the EC JRC is “Chef de File” for the specific decommissioning knowledge management objective, the process will be developed in close cooperation with the JRC and in line with the content of their Work Programme.

#### 4 FINANCIAL IMPLEMENTATION

This section establishes the available funding for the implementation of the DP<sup>3</sup>.

**Actual commitments or payment** indicated by factual year of financial agreement signature and factual used sum for completed contracts and dedicated sum for ongoing contracts and **for current year**: financing contracts already signed and planned to be signed till the end of the year.

| Commitments                     | Actual commitments or payments (MEUR) | Planned commitments or payments |                     |                     |
|---------------------------------|---------------------------------------|---------------------------------|---------------------|---------------------|
|                                 |                                       | Before 2020                     | 2020                | 2021                |
| Source of funding               |                                       |                                 |                     |                     |
| COM to IIDSF                    | 747.300                               | 2.000                           | 10.000              |                     |
| Others to IIDSF                 | 86.014                                |                                 |                     |                     |
| COM to CPMA                     | 1.000.768                             | 66.050                          | 62.507 <sup>4</sup> | 71.348 <sup>4</sup> |
| COM-direct management           | 0.127                                 | 0.240                           |                     |                     |
| IIDSF out DP Comm               | 281.605                               | 0.365                           | 0.365               | 0.365               |
| IIDSF out DP Paym               | 281.605                               | 0.365                           | 0.365               | 0.365               |
| CPMA out DP Comm                | 52.786                                | -0.341                          | 1.617               | 1.617               |
| CPMA out DP Paym                | 26.859                                | 5.948                           | 2.187               | 1.617               |
| IIDSF to INPP Comm              | 548.753                               | 2.925                           | 10.250              | 0.625               |
| IIDSF to INPP Paym              | 543.155                               | 1.834                           | 4.028               | 3.558               |
| CPMA to INPP Comm               | 701.001                               | 38.443                          | 43.277              | 64.300              |
| CPMA to INPP Paym               | 506.664                               | 58.599                          | 59.185              | 63.168              |
| CPMA to REG Comm                | 7.923                                 |                                 |                     |                     |
| CPMA to REG Paym                | 7.117                                 | 0.025                           |                     |                     |
| SEIDF to INPP                   | 83.285                                | -0.006                          |                     |                     |
| SEIDF to others DECOM           | 3.999                                 |                                 |                     |                     |
| SB to INPP <sup>5</sup>         | 76.045                                | 7.222                           | 7.913               | 7.908               |
| SB to others DECOM <sup>7</sup> | 28.992                                | 5.807                           | 5.969               | 5.969               |
| INPP                            | 26.140                                | 5.983                           | 8.300               | 12.690              |

\* Values correspond to approved WP2020.

Negative values result from release of committed funds after closing a Grant Agreement or Project Fiche. In the absence of commitment for a specific period, the “decommitted” funds exceed the amount of committed funds.

COM to IIDSF: European Commission Delegation Agreements with IIDSF

Others to IIDSF: include contributions from other donors to IIDSF and interests accrued on IIDSF (cumulative)

COM to CPMA: European Commission Transfer of Funds Agreements with CPMA

IIDSF to INPP Comm: Grant Agreements within the decommissioning window

IIDSF to INPP Paym: Payments for beneficiaries in reporting period

IIDSF out DP Comm: before 2014 Grant Agreements within the energy window and administrative costs, after 2014 administrative and other costs

IIDSF out DP Paym: Payments before 2014 within the energy window and administrative costs, after 2014 administrative and other costs payments

CPMA to INPP Comm: Projects (Fiche) within the decommissioning window

CPMA to INPP Paym: Payments within the decommissioning window

CPMA out DP Comm: before 2014 Projects (Fiche) within the energy window, after 2014 administrative and other costs

CPMA out DP Paym: before 2014 payments within the energy window, after 2014 administrative and other costs payments

CPMA to REG Comm: Technical assistance projects to Lithuanian regulatory bodies in the field of decommissioning

CPMA to REG Paym: Payments from Technical assistance projects to Lithuanian regulatory bodies in the field of decommissioning

SEIDF to INPP: SE Ignalina NPP Decommissioning Fund payments for activities within the DP

SEIDF to Others DECOM: SE Ignalina NPP Decommissioning Fund payments to Radiation Protection Centre and Radioactive Waste Management Agency

SB to INPP: State Budget payments for activities within the DP

SB to Others DECOM: State Budget payments to institutions providing INPP physical security and fire safety services

INPP: INPP own resources payments for activities within the DP

<sup>3</sup> Allocation of national contribution is calculated in accordance with the currently established practice and may be revised after adoption of the new Ignalina Regulation.

<sup>4</sup> Amounts are calculated in accordance with the new draft Ignalina Regulation. Contributions to IIDSF.

<sup>5</sup> Contribution is calculated in accordance with the practice established for Ignalina Programme 2014-2020 and may be revised in accordance with the new implementation procedures.



## 5 TIMELINE FOR THE USE OF FUNDS

The hierarchical lists of planned activities (the work breakdown structure – WBS), associated schedules and indicative costs (MEUR) constitute the baseline decommissioning schedules for the implementation of “earned value management”<sup>6</sup>.

| ID         | Denomination  | Before 2020    | 2020          | 2021/H1      | 2021/H2      | 2022/H1      | 2022/H2      | 2023          | 2024         | 2025         | 2026          | 2027          | 2028         | 2029         | 2030          | 2031         | 2032         | 2033         | 2034         | 2035         | 2036         | 2037         | 2038         | Budget at completion |
|------------|---|----------------|---------------|--------------|--------------|--------------|--------------|---------------|--------------|--------------|---------------|---------------|--------------|--------------|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|----------------------|
| <b>P.0</b> | <b>Enterprise Activity Organising Programme</b>   | <b>254.463</b> | <b>11.585</b> | <b>5.631</b> | <b>5.631</b> | <b>5.481</b> | <b>5.482</b> | <b>9.222</b>  | <b>8.973</b> | <b>8.631</b> | <b>8.464</b>  | <b>9.120</b>  | <b>8.092</b> | <b>7.994</b> | <b>7.763</b>  | <b>7.585</b> | <b>7.483</b> | <b>7.296</b> | <b>6.998</b> | <b>5.849</b> | <b>5.321</b> | <b>5.072</b> | <b>6.198</b> | <b>408.333</b>       |
| <b>P.1</b> | <b>Preparation for Decommissioning Programme</b>  | <b>541.319</b> | <b>32.089</b> | <b>6.548</b> | <b>6.547</b> | <b>3.737</b> | <b>3.738</b> | <b>11.852</b> | <b>3.962</b> | <b>9.824</b> | <b>15.827</b> | <b>10.427</b> | <b>8.222</b> | <b>1.396</b> | <b>12.644</b> | <b>2.811</b> | <b>9.182</b> | <b>4.815</b> | <b>1.594</b> | <b>1.220</b> | <b>0.930</b> | <b>7.227</b> | <b>2.020</b> | <b>697.931</b>       |
| P.1.1.1101 | INPP equipment engineering inventory  | 3.280          | 0.157         | 0.066        | 0.067        | -            | -            | -             | -            | -            | -             | -             | -            | -            | -             | -            | -            | -            | -            | -            | -            | -            | -            | 3.569                |
| P.1.1.1102 | Radiological characterisation   | 6.491          | 0.306         | 0.087        | 0.088        | 0.070        | 0.071        | 0.489         | 0.492        | 0.490        | 0.490         | 0.490         | 0.489        | 0.490        | 0.490         | 0.490        | 0.558        | 0.554        | 0.554        | 0.556        | 0.558        | 0.555        | 0.485        | 15.345               |
| P.1.1.1103 | Decommissioning Licensing   | 0.231          | 0.094         | 0.039        | 0.039        | 0.044        | 0.044        | -             | -            | -            | -             | -             | -            | -            | -             | -            | -            | -            | -            | -            | -            | -            | -            | 0.491                |
| P.1.2.1201 | B1 - Interim spent fuel storage facility (ISFSF)  | 205.001        | 5.003         | 1.776        | 1.776        | -            | -            | -             | -            | -            | -             | -             | -            | -            | -             | -            | -            | -            | -            | -            | -            | -            | -            | 213.556              |
| P.1.2.1202 | B2 - Solid waste management and storage facility (SWMSF)  | 51.117         | -             | -            | -            | -            | -            | -             | -            | -            | -             | -             | -            | -            | -             | -            | -            | -            | -            | -            | -            | -            | -            | 51.117               |
| P.1.2.1203 | B3/4 - Solid waste treatment and storage facilities   | 141.844        | -             | -            | -            | -            | -            | -             | -            | -            | -             | -             | -            | -            | -             | -            | -            | -            | -            | -            | -            | -            | -            | 141.844              |
| P.1.2.1204 | Installation for material radioactive measurement within the further uncontrolled levels (B10)            | 5.000          | -             | -            | -            | -            | -            | -             | -            | -            | -             | -             | -            | -            | -             | -            | -            | -            | -            | -            | -            | -            | -            | 5.000                |
| P.1.2.1205 | B19-1 Storage Facility for Short-lived Very Low Level Waste   | 6.280          | -             | -            | -            | -            | -            | -             | -            | -            | -             | -             | -            | -            | -             | -            | -            | -            | -            | -            | -            | -            | -            | 6.280                |
| P.1.2.1206 | B19-2 - Landfill Facility for short-lived very low level waste (construction)                             | 9.841          | 1.912         | -            | -            | -            | -            | -             | -            | -            | -             | -             | -            | -            | -             | -            | -            | -            | -            | -            | -            | -            | -            | 11.754               |
| P.1.2.1207 | B25 - Near surface repository for low and intermediate level short-lived radioactive waste                | 45.151         | 12.452        | 3.558        | 3.558        | 0.076        | 0.075        | 10.020        | 0.148        | 0.153        | 6.325         | 2.017         | 0.131        | 0.270        | 10.007        | 0.139        | 6.415        | 2.039        | 0.130        | 0.131        | 0.131        | 6.534        | 1.385        | 110.845              |
| P.1.2.1208 | Engineering study of the possibility of industrial waste disposal site conversion into a final repository | 0.044          | -             | -            | -            | -            | -            | -             | -            | -            | -             | -             | -            | -            | -             | -            | -            | -            | -            | -            | -            | -            | -            | 0.044                |
| P.1.2.1210 | Steam boiler station B5/1   | 6.701          | -             | -            | -            | -            | -            | -             | -            | -            | -             | -             | -            | -            | -             | -            | -            | -            | -            | -            | -            | -            | -            | 6.701                |
| P.1.2.1211 | Construction of 110/6 kW substation and connection of INPP site consumers to power supply from it (B35)   | 0.030          | -             | -            | -            | -            | -            | -             | -            | -            | -             | -             | -            | -            | -             | -            | -            | -            | -            | -            | -            | -            | -            | 0.030                |
| P.1.2.1212 | Modernization of an existing Technical Documentation Archive (B6)   | 1.905          | -             | -            | -            | -            | -            | -             | -            | -            | -             | -             | -            | -            | -             | -            | -            | -            | -            | -            | -            | -            | -            | 1.905                |
| P.1.2.1213 | New heat only boiler Station construction (B5/2)  | 23.146         | -             | -            | -            | -            | -            | -             | -            | -            | -             | -             | -            | -            | -             | -            | -            | -            | -            | -            | -            | -            | -            | 23.146               |
| P.1.2.1214 | Controlled shunt reactor at INPP 330kV switchyard (B16)   | 10.234         | -             | -            | -            | -            | -            | -             | -            | -            | -             | -             | -            | -            | -             | -            | -            | -            | -            | -            | -            | -            | -            | 10.234               |
| P.1.2.1215 | Rehabilitation of pipeline from HOBS to INPP (B5/3)   | 10.322         | -             | -            | -            | -            | -            | -             | -            | -            | -             | -             | -            | -            | -             | -            | -            | -            | -            | -            | -            | -            | -            | 10.322               |
| P.1.2.1216 | INPP structures isolation before demolition outside the surveillance area                                 | 1.373          | -             | -            | -            | -            | -            | -             | -            | -            | -             | -             | -            | -            | -             | -            | -            | -            | -            | -            | -            | -            | -            | 1.373                |
| P.1.2.1218 | B38 - Interim storage buildings for reactor D&D waste   | 0.170          | -             | -            | -            | -            | -            | -             | -            | -            | -             | -             | -            | -            | -             | -            | -            | -            | -            | -            | -            | -            | -            | 0.170                |
| P.1.2.1219 | Installation of Radioactive Metal Waste Treatment Facility in Bldg. 130/2                                 | 2.341          | 0.285         | 0.260        | 0.260        | 0.445        | 0.446        | -             | -            | -            | -             | -             | -            | -            | -             | -            | -            | -            | -            | -            | -            | -            | -            | 4.038                |

<sup>6</sup> Minor variances with the P.1, P.2, P.3, P.4 and P.5 baseline due to rounding of numbers by using MS Excel.

| ID                   | Denomination   | Before 2020   | 2020          | 2021/H1      | 2021/H2      | 2022/H1      | 2022/H2      | 2023                | 2024          | 2025          | 2026          | 2027          | 2028          | 2029          | 2030          | 2031          | 2032          | 2033          | 2034          | 2035          | 2036          | 2037          | 2038          | Budget at completion |
|----------------------|--|---------------|---------------|--------------|--------------|--------------|--------------|---------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------------|
| P.1.2.1220           | B21 - Training center modernization  | 1.050         | -             | -            | -            | -            | -            | -                   | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | 1.050                |
| P.1.2.1221           | Optimization of electric power supply schemes for INPP consumers               | 1.162         | 0.339         | 0.089        | 0.089        | 2.590        | 2.589        | 0.536               | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | 7.394                |
| P.1.2.1222           | B20 - Upgrade of bituminized waste vaults in Bldg. 158                         | 0.661         | 0.178         | 0.123        | 0.123        | 0.145        | 0.146        | 0.196               | 1.215         | 1.210         | 1.211         | 0.668         | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | 5.876                |
| P.1.2.1223           | Erection and modification of communication lines and utilities                 | 0.882         | -             | -            | -            | -            | -            | -                   | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | 0.882                |
| P.1.2.1224           | Construction of new temporary waste treatment Facility                         | -             | -             | -            | -            | -            | -            | -                   | -             | -             | -             | -             | -             | 0.005         | 1.614         | 1.624         | 1.630         | 1.617         | 0.007         | -             | -             | -             | -             | 6.497                |
| P.1.2.1225           | Modification of the existing FIHC at ISFSF to handle with three types of casks | 0.901         | 3.014         | 0.208        | 0.208        | -            | -            | -                   | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | 4.332                |
| P.1.2.1226           | New Building Construction  | 0.025         | -             | -            | -            | -            | -            | -                   | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | 0.025                |
| P.1.2.1227           | Installation of automatic sewage pumping station in Bldg. 437/1                | 0.021         | 0.206         | -            | -            | -            | -            | -                   | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | 0.227                |
| P.1.2.1228           | Construction of a solar power facility for INPP own use                        | 0.000         | 7.650         | 0.060        | 0.060        | 0.045        | 0.045        | 0.098               | 0.123         | 0.333         | 0.107         | 0.107         | 0.107         | 0.116         | 0.116         | 0.116         | 0.127         | 0.127         | 0.127         | 0.138         | 0.138         | 0.138         | 0.150         | 10.025               |
| P.1.2.1229           | Construction of reactor waste interim storage Facility                         | 0.000         | 0.000         | 0.012        | 0.012        | 0.039        | 0.039        | 0.096               | 1.551         | 7.205         | 7.273         | 6.719         | 7.055         | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | 30.000               |
| P.1.3.1300           | Isolation of other INPP facilities equipment                                   | 4.150         | 0.493         | 0.268        | 0.268        | 0.283        | 0.282        | 0.418               | 0.432         | 0.433         | 0.422         | 0.426         | 0.441         | 0.514         | 0.417         | 0.441         | 0.453         | 0.478         | 0.776         | 0.396         | 0.102         | 0.000         | 0.000         | 11.895               |
| P.1.4.1401           | Unit 1 MCC decontamination   | 1.500         | -             | -            | -            | -            | -            | -                   | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | 1.500                |
| P.1.4.1402           | Unit 2 MCC decontamination   | 0.050         | -             | -            | -            | -            | -            | -                   | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | 0.050                |
| P.1.4.1403           | CPr -1.2 Ion-exchange resins decontamination                                   | 0.249         | -             | -            | -            | -            | -            | -                   | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | 0.249                |
| P.1.4.1404           | CPr -3.4 Ion-exchange resins decontamination                                   | 0.167         | -             | -            | -            | -            | -            | -                   | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | 0.167                |
| <b>P.2</b>           | <b>Objects Dismantling/Demolition and Site Remediation Programme</b>           | <b>92.208</b> | <b>13.249</b> | <b>6.562</b> | <b>6.562</b> | <b>8.882</b> | <b>8.883</b> | <b>16.092</b>       | <b>25.275</b> | <b>26.449</b> | <b>21.352</b> | <b>20.559</b> | <b>35.782</b> | <b>36.463</b> | <b>33.203</b> | <b>26.704</b> | <b>29.353</b> | <b>24.925</b> | <b>22.870</b> | <b>28.775</b> | <b>53.257</b> | <b>46.419</b> | <b>11.025</b> | <b>594.847</b>       |
| P.2.1.2101           | Unit 1 reactor facilities dismantling (zones R1 and R2. UP01. Unit 1)          | 5.447         | 1.246         | 0.620        | 0.620        | 0.618        | 0.617        | 0.869               | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | 10.038               |
| P.2.1.2102           | Unit 2 reactor facilities dismantling (zones R1 and R2. UP01. Unit 2)          | 0.191         | 0.193         | 0.225        | 0.225        | 0.593        | 0.592        | 0.742               | 1.150         | 1.146         | 1.146         | 1.146         | 0.325         | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | 7.675                |
| P.2.1.2103           | Engineering & licensing for R3 zone dismantling and RWISF                      | 1.441         | 0.640         | 0.972        | 0.971        | 0.944        | 0.943        | 1.579               | 8.901         | 11.744        | 3.865         | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | 32.000               |
| P.2.1.2104           | Reactor zone R3 dismantling at Unit 1 and Unit 2                               | -             | -             | -            | -            | -            | -            | 0.340               | 0.440         | 0.521         | 4.100         | 6.040         | 8.459         | 10.887        | 14.119        | 14.711        | 14.757        | 13.689        | 9.713         | 2.224         | 0.000         | 0.000         | 0.000         | 100.000              |
| P.2.2.2201           | Dismantling within the surveillance area                                       | 2.171         | 0.216         | 0.135        | 0.135        | 0.851        | 0.851        | 1.806               | 1.815         | 1.813         | 1.813         | 1.813         | 1.811         | 1.813         | 1.813         | 1.813         | 0.511         | 0.475         | 0.036         | 0.000         | 0.000         | 0.000         | 0.000         | 21.690               |
| P.2.2.2202           | Dismantling of utilities outside the surveillance area                         | 0.000         | 0.538         | 0.214        | 0.214        | 0.213        | 0.214        | 0.380               | 0.330         | 0.164         | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | 2.266                |
| P.2.2.2203           | D&D in Block A1  | 5.206         | 3.116         | 1.635        | 1.635        | 1.023        | 1.023        | 1.756               | 1.771         | 1.751         | 1.158         | 0.008         | -             | -             | -             | -             | 0.689         | 1.261         | 1.678         | 0.044         | -             | -             | -             | 28.743               |
| P.2.2.2203.2.1.03.04 | Purchase of Dismantling design and Dismantling of Drums-Separators             |               |               |              |              |              |              | 10.000 <sup>7</sup> |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |                      |
| P.2.2.2204           | D&D in Block B1  | -             | -             | -            | -            | 0.058        | 0.056        | 0.342               | 0.950         | 1.247         | 0.805         | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | 3.460                |
| P.2.2.2205           | D&D in Block V1  | 6.239         | -             | -            | -            | 0.038        | 0.039        | 1.005               | 1.025         | 0.000         | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | 8.346                |
| P.2.2.2206           | D&D in Block G1  | 31.486        | -             | -            | -            | -            | -            | -                   | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | 31.486               |

<sup>7</sup> Detailed breakdown of this project implementation funding after 2023 will be defined in the frame of the next Financing Decision.

| ID         | Denomination   | Before 2020    | 2020          | 2021/H1      | 2021/H2      | 2022/H1      | 2022/H2      | 2023          | 2024          | 2025          | 2026          | 2027          | 2028          | 2029          | 2030          | 2031          | 2032          | 2033          | 2034          | 2035          | 2036         | 2037         | 2038         | Budget at completion |
|------------|--|----------------|---------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------|--------------|--------------|----------------------|
| P.2.2.2207 | D&D in Block D1  | 7.376          | -             | -            | -            | -            | -            | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -            | -            | -            | 7.376                |
| P.2.2.2208 | D&D in Block D0  | 0.147          | -             | -            | -            | -            | -            | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -            | -            | -            | 0.147                |
| P.2.2.2209 | Bldg. 117/1 equipment dismantling  | 3.202          | -             | -            | -            | -            | -            | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -            | -            | -            | 3.202                |
| P.2.2.2210 | D&D in Blocks A2 & V2  | 0.724          | 1.327         | 0.798        | 0.798        | 1.054        | 1.054        | 3.286         | 2.865         | 1.684         | 1.684         | 1.643         | 1.455         | 1.678         | 0.000         | 0.000         | 0.058         | 0.567         | 0.426         | 0.724         | -            | -            | -            | 26.456               |
| P.2.2.2211 | D&D in Block B2  | -              | -             | -            | -            | -            | -            | -             | -             | -             | -             | 0.191         | 0.463         | 0.906         | 1.420         | 0.071         | -             | -             | -             | -             | -            | -            | -            | 3.051                |
| P.2.2.2213 | D&D in Block G2  | 17.514         | 2.668         | 0.389        | 0.390        | -            | -            | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -            | -            | -            | 20.961               |
| P.2.2.2214 | D&D in Block D2  | 3.096          | 1.874         | 0.656        | 0.656        | 1.175        | 1.175        | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -            | -            | -            | 8.633                |
| P.2.2.2215 | Bldg. 117/2 equipment dismantling  | 1.127          | -             | -            | -            | -            | -            | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -            | -            | -            | 1.127                |
| P.2.2.2216 | Bldg. 119 equipment dismantling  | 3.197          | -             | -            | -            | -            | -            | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -            | -            | -            | 3.197                |
| P.2.2.2218 | Waste management facilities equipment D&D  | -              | -             | -            | -            | -            | -            | -             | -             | -             | -             | -             | -             | -             | -             | 1.062         | 4.215         | 4.183         | 4.183         | 4.199         | 2.107        | -            | -            | 19.948               |
| P.2.2.2219 | D&D in Bldg. 135/1.2. 140/1. 152/1.2   | -              | -             | 0.033        | 0.033        | 0.102        | 0.101        | 0.220         | 0.222         | 0.221         | 0.221         | 0.221         | 0.220         | 0.221         | 0.221         | 0.221         | 0.222         | 0.220         | 0.220         | 0.221         | 0.062        | -            | -            | 3.199                |
| P.2.3.2301 | Demolition of Unit 1 facilities  | 0.320          | 0.341         | 0.228        | 0.229        | 0.254        | 0.255        | 0.447         | 0.449         | 0.447         | 1.460         | 1.560         | 7.411         | 7.220         | 4.229         | 3.697         | 2.943         | 0.500         | 1.980         | 14.500        | 18.977       | 16.292       | 2.615        | 86.352               |
| P.2.3.2302 | Demolition of Unit 2 facilities  | -              | -             | 0.015        | 0.015        | 0.813        | 0.813        | 0.229         | 0.430         | 0.429         | 0.431         | 3.315         | 7.180         | 8.329         | 8.129         | 3.877         | 2.794         | 0.962         | 0.535         | 0.789         | 18.489       | 21.324       | 4.685        | 83.584               |
| P.2.3.2303 | Other Facilities within the Controlled Area  | -              | -             | 0.017        | 0.017        | 0.017        | 0.017        | 0.034         | 0.034         | 1.344         | 1.347         | 1.372         | 4.549         | 1.838         | 1.076         | 1.076         | 2.084         | 2.422         | 2.836         | 3.445         | 5.754        | 1.443        | 0.074        | 30.797               |
| P.2.3.2304 | Demolition of structures in the surveillance area                                    | 0.230          | 0.792         | 0.417        | 0.417        | 0.487        | 0.486        | 1.835         | 3.590         | 1.639         | 0.929         | 0.444         | 1.104         | 0.758         | 0.331         | 0.171         | 1.074         | 0.592         | 0.573         | 0.467         | 0.667        | 0.459        | 0.375        | 17.837               |
| P.2.3.2305 | Demolition of structures outside the surveillance area                               | 0.530          | 0.298         | 0.207        | 0.207        | 0.180        | 0.180        | 0.297         | 0.377         | 0.449         | 0.180         | 1.880         | 1.880         | 1.887         | 1.864         | 0.005         | 0.005         | 0.019         | 0.578         | 1.888         | 6.191        | 1.323        | 0.000        | 20.426               |
| P.2.3.2306 | Demolition of Bldg. 129  | 2.562          | 0.001         | -            | -            | -            | -            | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -            | -            | -            | 2.562                |
| P.2.4.2401 | Site remediation   | -              | -             | -            | -            | -            | -            | -             | -             | -             | -             | -             | -             | -             | -             | -             | 0.001         | 0.036         | 0.113         | 0.275         | 1.009        | 5.578        | 3.275        | 10.287               |
| <b>P.3</b> | <b>Spent Nuclear Fuel Handling Programme</b>   | <b>18.333</b>  | <b>3.393</b>  | <b>2.323</b> | <b>2.324</b> | <b>0.902</b> | <b>0.904</b> | <b>0.232</b>  | <b>0.233</b>  | <b>0.233</b>  | <b>0.233</b>  | <b>0.233</b>  | <b>0.232</b>  | <b>0.233</b>  | <b>0.233</b>  | <b>0.233</b>  | <b>0.233</b>  | <b>0.232</b>  | <b>0.232</b>  | <b>0.233</b>  | <b>0.233</b> | <b>0.233</b> | <b>0.228</b> | <b>31.895</b>        |
| P.3.1.3101 | Spent nuclear fuel handling in Unit 1  | 5.757          | 1.238         | 0.267        | 0.266        | -            | -            | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -            | -            | -            | 7.527                |
| P.3.1.3102 | Spent nuclear fuel handling in Unit 2  | 9.452          | 1.322         | 0.681        | 0.680        | 0.386        | 0.387        | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -            | -            | -            | 12.908               |
| P.3.1.3103 | Nuclear fuel debris recovery from the bottom of SFP in the Units 1 and 2             | -              | 0.018         | 0.789        | 1.939        | 0.233        | 0.234        | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -            | -            | -            | 2.420                |
| P.3.2.3200 | Spent nuclear fuel transportation to storage sites                                   | 0.076          | 0.029         | 0.014        | 0.015        | 0.008        | 0.008        | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -            | -            | -            | 0.150                |
| P.3.3.3300 | Spent nuclear fuel handling in storage sites   | 3.048          | 0.788         | 0.393        | 0.392        | 0.275        | 0.274        | 0.232         | 0.233         | 0.233         | 0.233         | 0.233         | 0.232         | 0.233         | 0.233         | 0.233         | 0.233         | 0.232         | 0.232         | 0.233         | 0.233        | 0.233        | 0.228        | 8.888                |
| <b>P.4</b> | <b>Waste Handling Programme</b>  | <b>57.694</b>  | <b>17.250</b> | <b>8.670</b> | <b>8.670</b> | <b>8.438</b> | <b>8.437</b> | <b>18.593</b> | <b>18.754</b> | <b>19.082</b> | <b>18.682</b> | <b>19.132</b> | <b>18.554</b> | <b>16.978</b> | <b>16.508</b> | <b>16.958</b> | <b>16.572</b> | <b>17.038</b> | <b>15.130</b> | <b>11.807</b> | <b>9.645</b> | <b>9.698</b> | <b>8.983</b> | <b>361.275</b>       |
| P.4.1.4100 | Non-radioactive waste handling   | 3.932          | 0.668         | 0.333        | 0.333        | 0.332        | 0.331        | 0.663         | 0.668         | 0.666         | 0.666         | 0.666         | 0.663         | 0.666         | 0.666         | 0.666         | 0.668         | 0.671         | 0.671         | 0.674         | 0.677        | 0.656        | 0.648        | 16.584               |
| P.4.2.4202 | Solid Radioactive waste management   | 25.743         | 12.781        | 6.366        | 6.366        | 6.342        | 6.342        | 12.684        | 12.781        | 12.732        | 12.732        | 12.732        | 12.684        | 10.896        | 10.827        | 10.827        | 10.869        | 10.739        | 8.802         | 5.819         | 5.841        | 5.477        | 5.253        | 225.634              |
| P.4.2.4204 | Disposal of radioactive waste  | 0.918          | 0.853         | 0.503        | 0.503        | 0.302        | 0.302        | 2.322         | 2.357         | 2.748         | 2.348         | 2.798         | 2.339         | 2.748         | 2.348         | 2.798         | 2.357         | 2.970         | 2.529         | 2.989         | 2.548        | 2.989        | 2.509        | 45.079               |
| P.4.3.4300 | Liquid radioactive waste handling  | 27.101         | 2.947         | 1.468        | 1.468        | 1.462        | 1.463        | 2.925         | 2.947         | 2.936         | 2.936         | 2.936         | 2.868         | 2.668         | 2.668         | 2.668         | 2.678         | 2.657         | 3.128         | 2.325         | 0.579        | 0.577        | 0.573        | 73.978               |
| <b>P.5</b> | <b>Post Operation Programme</b>  | <b>332.587</b> | <b>19.944</b> | <b>9.692</b> | <b>9.692</b> | <b>8.582</b> | <b>8.582</b> | <b>15.666</b> | <b>15.157</b> | <b>15.021</b> | <b>14.945</b> | <b>14.779</b> | <b>15.047</b> | <b>14.465</b> | <b>14.052</b> | <b>13.421</b> | <b>13.382</b> | <b>13.257</b> | <b>10.795</b> | <b>10.163</b> | <b>5.975</b> | <b>5.379</b> | <b>2.716</b> | <b>583.301</b>       |
| P.5.1      | Operation of facilities remaining in operation throughout the entire decommissioning | 6.357          | 1.006         | 0.501        | 0.501        | 0.496        | 0.497        | 0.977         | 0.984         | 0.981         | 0.981         | 0.981         | 0.977         | 0.946         | 0.785         | 0.785         | 0.788         | 0.782         | 0.782         | 0.762         | 0.562        | 0.560        | 0.553        | 22.540               |
| P.5.2      | Maintenance of to be decommissioned facilities up to their dismantling/demolition    | 175.011        | 8.481         | 4.036        | 4.036        | 3.071        | 3.072        | 4.702         | 4.436         | 4.365         | 4.350         | 4.248         | 4.107         | 4.054         | 3.815         | 3.792         | 3.741         | 3.650         | 3.560         | 3.371         | 0.887        | 0.297        | 0.293        | 251.377              |
| P.5.3      | Energy saving  | 151.219        | 10.457        | 5.155        | 5.156        | 5.014        | 5.025        | 9.987         | 9.736         | 9.675         | 9.614         | 9.551         | 9.963         | 9.466         | 9.453         | 8.844         | 8.853         | 8.825         | 6.453         | 6.030         | 4.527        | 4.522        | 1.870        | 309.384              |
|            | Risk   | 7.534          | 6.087         | -            | 6.135        | -            | 5.999        | 6.172         | 6.005         | 5.566         | 6.479         | 6.856         | 6.980         | 6.984         | 6.984         | 6.922         | 6.971         | 7.107         | 6.908         | 4.826         | 4.500        | 4.488        | 4.173        | 123.677              |
|            | Inflation  | 2.478          | 5.533         | -            | 7.131        | -            | 8.873        | 11.398        | 14.021        | 18.147        | 21.180        | 22.597        | 29.515        | 29.744        | 35.886        | 31.671        | 38.997        | 37.627        | 34.767        | 37.805        | 52.840       | 55.677       | 23.506       | 519.394              |
|            | Severance payments   | 1.790          | 0.276         | -            | 0.164        | -            | 0.167        | 0.171         | 0.173         | 0.177         | 0.181         | 0.185         | 0.188         | 0.192         | 0.195         | 0.199         | 0.203         | 0.498         | 0.508         | 0.518         | 0.529        | 0.539        | 0.230        | 7.083                |

| ID | Denomination  | Before 2020      | 2020           | 2021/H1  | 2021/H2       | 2022/H1  | 2022/H2       | 2023          | 2024          | 2025           | 2026           | 2027           | 2028           | 2029           | 2030           | 2031           | 2032           | 2033           | 2034           | 2035           | 2036           | 2037           | 2038          | Budget at completion   |
|----|---|------------------|----------------|----------|---------------|----------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---------------|------------------------|
|    | EU funding  | 1 122.506        | 94.606         | -        | 74.983        | -        | 65.787        | 65.798        | 72.933        | 84.619         | 88.532         | 85.568         | 104.032        | 98.739         | 111.758        | 90.794         | 106.666        | 97.085         | 84.092         | 92.886         | 124.912        | 126.422        | 50.770        | 2 843.487 <sup>8</sup> |
|    | Lithuanian funding of decommissioning activities <sup>9</sup> | 185.900          | 14.800         | -        | 17.300        | -        | 21.300        | 23.600        | 19.620        | 18.510         | 18.810         | 18.320         | 18.580         | 15.710         | 15.710         | 15.710         | 15.710         | 15.710         | 15.710         | 8.310          | 8.320          | 8.310          | 8.310         | 484.250 <sup>10</sup>  |
|    | <b>Total</b>  | <b>1 308.406</b> | <b>109.406</b> | <b>-</b> | <b>92.283</b> | <b>-</b> | <b>87.087</b> | <b>89.398</b> | <b>92.553</b> | <b>103.129</b> | <b>107.342</b> | <b>103.888</b> | <b>122.612</b> | <b>114.449</b> | <b>127.468</b> | <b>106.504</b> | <b>122.376</b> | <b>112.795</b> | <b>99.802</b>  | <b>101.196</b> | <b>133.232</b> | <b>134.732</b> | <b>59.080</b> | <b>3 327.737</b>       |
|    | Fire protection services                                      | -                | 0.728          | -        | 0.728         | -        | 0.728         | 0.750         | 0.772         | 0.796          | 0.819          | 0.844          | 0.869          | 0.895          | 0.922          | 0.950          | 0.978          | 1.008          | 1.038          | 1.069          | 1.101          | 1.134          | 1.168         | 17.298                 |
|    | <b>Total</b>  | <b>1 308.406</b> | <b>110.134</b> | <b>-</b> | <b>93.011</b> | <b>-</b> | <b>87.815</b> | <b>90.147</b> | <b>93.325</b> | <b>103.924</b> | <b>108.162</b> | <b>104.732</b> | <b>123.481</b> | <b>115.344</b> | <b>128.391</b> | <b>107.454</b> | <b>123.354</b> | <b>113.803</b> | <b>116.468</b> | <b>102.265</b> | <b>134.333</b> | <b>135.866</b> | <b>60.248</b> | <b>3 345.035</b>       |

<sup>8</sup> 2,098.425 MEUR already committed or used from EU funds and IIDSF donor/IIDSF interest gained, 309.608 MEUR committed or used from LT funds.

<sup>9</sup> Allocation of national contribution is calculated in accordance with the currently established practice and may be revised after adoption of the new Ignalina Programme Implementation Procedures.

## 6 STAFFING PLAN

Staff allocation<sup>10</sup> (in full time equivalent)

| Category     |  | Staff        |              |              |              |              |              |             |                        |              |
|--------------|--|--------------|--------------|--------------|--------------|--------------|--------------|-------------|------------------------|--------------|
|              |  | Actual       |              |              |              |              |              |             | Planned (year average) |              |
|              |  | 2014         | 2015         | 2016         | 2017         | 2018         | 2019         | 2020        | 2021                   | 2022         |
| 01           | Pre-decommissioning actions                                  | 12           | 9            | 7            | 6            | 8            | 8            | 7           | 7                      | 8            |
| 02           | Facility shutdown activities                                 | 247          | 256          | 237          | 200          | 169          | 138          | 132         | 105                    | 93           |
| 03           | Additional activities for safe enclosure or entombment       | 0            | 0            | 0            | 0            | 0            | 0            | 0           | 0                      |              |
| 04           | Dismantling activities within the controlled area            | 157          | 178          | 186          | 166          | 157          | 132          | 150         | 204                    | 196          |
| 05           | Waste processing, storage and disposal                       | 395          | 398          | 352          | 354          | 474          | 433          | 432         | 521                    | 504          |
| 06           | Site infrastructure and operation                            | 619          | 563          | 535          | 531          | 419          | 413          | 392         | 364                    | 397          |
| 07           | Conventional dismantling and demolition and site restoration | 1            | 0            | 0            | 0            | 1            | 13           | 1           | 7                      | 3            |
| 08           | Project management, engineering and support                  | 551          | 558          | 556          | 533          | 484          | 487          | 470         | 503                    | 531          |
| 09           | Research and development                                     | 29           | 28           | 33           | 37           | 35           | 31           | 30          | 26                     | 25           |
| 10           | Fuel and nuclear material                                    | 62           | 78           | 82           | 105          | 117          | 132          | 102         | 93                     | 39           |
| 11           | Other  | 0            | 0            | 0            | 0            | 0            | 0            | 0           | 0                      | 0            |
| <b>TOTAL</b> |  | <b>2.073</b> | <b>2.068</b> | <b>1.988</b> | <b>1.932</b> | <b>1.864</b> | <b>1.787</b> | <b>1716</b> | <b>1.830</b>           | <b>1.796</b> |

<sup>10</sup> According to the FDP.

**7 DISTRIBUTION OF AVAILABLE AMOUNTS PER PRIORITES**

| #   | Item   | Priority | Amount (MEUR) <sup>11</sup> |               |
|-----|--|----------|-----------------------------|---------------|
|     |  |          | 2021                        | 2022          |
| P.0 | Enterprise activity organisation                     | II       | 10.607                      | 10.401        |
| P.1 | Decommissioning preparation                          | I        | 7.456                       | 11.725        |
| P.2 | Facility dismantling/demolition and site restoration | I        | 10.433                      | 18.557        |
| P.3 | Spent Nuclear Fuel handling                          | II       | 3.967                       | 1.904         |
| P.4 | Waste handling                                       | I        | 8.527                       | 8.530         |
| P.5 | Post-operation programme                             | III      | 14.086                      | 12.443        |
|     | <b>Total EU funding</b>                              |          | <b>55.076</b>               | <b>63.560</b> |

<sup>11</sup> The latest available estimate of planned EU funds payments to INPP.