# Objectives of Developing Nuclear Power

**Overall objective**
The overall objective is to gradually construct and develop a Vietnamese nuclear power industry ensuring safe management and effective operation of power plants, gradually increasing the participating ratio of domestic industries in implementation of power plant projects, and eventually leading to self-reliance in design, manufacture, construction and installation, operation and maintenance of nuclear power plants.

<table>
<thead>
<tr>
<th>Specific objectives</th>
<th>To Year 2015</th>
<th>To Year 2020</th>
<th>To Year 2030</th>
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<tbody>
<tr>
<td>Implementing the project for construction of nuclear power plants</td>
<td>To implement the project for construction of the first nuclear power plant by completing approval of the investment project and of the location, selection of contractor, and preparation of a team of senior project management staff and key technicians for the investor, thereby satisfying the requirements to commence construction of the plant.</td>
<td>To construct the first nuclear power plant by completing construction and commissioning of the first turbine at Ninh Thuan Nuclear Power Plant 1 to produce commercial power in year 2020, with turbine 2 to become operational in year 2021.</td>
<td>To commence construction of the next following nuclear power plants, resulting in the nuclear power industry becoming one of the main industries of the country and providing an appropriate percentage of the national power source.</td>
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<td>Nuclear power technology</td>
<td>To build up a team of nuclear power experts.</td>
<td>To arrange several nuclear power technology transfers from foreign parties, concentrating on design technology.</td>
<td>To ensure that Vietnam is able to participate with foreign partners in the design of nuclear power plants.</td>
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<td>Participation by domestic industries</td>
<td>To involve domestic industries in the planning and formulation of regimes and policies so as to raise their capacity for participation in the supply of materials and equipment, construction and installation, project management, supervision and inspection of quality of nuclear power plants.</td>
<td>To arrange for domestic industries to participate in provision of materials and equipment, construction and installation, and transportation of jumbo size equipment with a contract value of 20-30% of the total value of construction and installation of project works.</td>
<td>To ensure participation by domestic industries in power plant project works with a contract value of 30 to 40% of the total value of construction and installation.</td>
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<td>Construction site</td>
<td>To complete preparation of the site to commence construction of the first nuclear power plant.</td>
<td>To commence construction of the Ninh Thuan Nuclear Power Plant 2, and to carry out preparatory work on locations for construction of the next nuclear power plants.</td>
<td>To complete preparation of sites and commence construction of the next nuclear power plants.</td>
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<td>Ensuring safe supply of nuclear fuel</td>
<td>To ensure the safety of nuclear fuel supplies by researching on a regime, policies and solutions for</td>
<td>To ensure a safe supply of nuclear fuel by promulgating policies on ensuring safety, including establishment of a</td>
<td>To ensure a secure supply of nuclear fuel by building a domestic industry manufacturing nuclear fuel,</td>
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ensuring the safety of fuel to be supplied to plants; to conduct exploration and prospecting for uranium sources, and to formulate a regime and policy on commercial exploitation and use of uranium.

Managing radioactive waste and spent fuel
To manage radioactive waste and depleted fuel by completing planning on national locations for storing low and intermediate level radioactive waste; to formulate policies on management of waste and to train staff in disposal of radioactive waste.

Ensuring nuclear safety
To ensure nuclear safety by promulgating a complete set of legal instruments, technical criteria and specifications, and rules and procedures on approval of locations, design, and licensing of nuclear power plants; to ensure State agencies have the capability to manage nuclear safety in order to carry out licensing and ensure safety of all phases up until commencement of construction of plants.

Strengthening technical assistance capability
To strengthen technical assistance capability by forming an independent technical assistance agency with the ability to conduct analysis, evaluation and assessment of nuclear safety for the phase of approving the location, design and licensing of construction of plants, and able to operate an

fund to ensure fuel security; to formulate a schedule on localisation of fuel production from imported enriched uranium; to formulate a regime and policy on exploitation and use of uranium resources within the country; to ensure capability to receive technology for manufacture of nuclear fuel and to have a system of laboratories conducting work on modern uranium technology.

To manage radioactive waste and spent fuel by promulgating a complete system of policies on such management, and to have a system of modern laboratories with the technology for disposal of radioactive waste.

To ensure nuclear safety by promulgating a complete set of legal instruments, technical standards and criteria, and rules and procedures for licensing the operation and maintenance of nuclear power plants, and at the same time ensuring the capability of State administrative bodies regarding nuclear safety in order for licences to be issued.

To strengthen technical assistance capability by having an independent technical assistance agency with full capacity for conducting analysis, evaluation and assessment of nuclear safety, operating an observation network on environmental radioactivity, testing and regulating

and formulating an investment project for an establishment to produce fuel from imported enriched uranium. To commence commercial exploitation of domestic uranium sources.

To manage radioactive waste and spent fuel by commencing a feasibility study for construction of a national location for storing low and intermediate level radioactive waste, with a system of complete and modern laboratories for disposal of such waste.

To ensure nuclear safety by completing, updating and supplementing legal instruments, national technical criteria and standards, ensuring the capability of State authorities to safeguard nuclear safety in conformity with development of the nuclear power program to year 2030.

To strengthen technical assistance by increasing the capacity of the independent technical assistance agency and the capacity of clinics for diagnosis and treatment of radioactive illness, so as to meet the requirements for development of the program to year 2030.
| **Training and developing a nuclear manpower team** | To train and develop a nuclear manpower team via a master plan on recruitment and training sufficient senior project management staff and technicians for investors, senior experts for agencies researching on development of nuclear technology, technical assistance agencies and agencies managing nuclear safety; and to formulate a master plan on university and post-university establishments training staff specialising in the nuclear industry and to formulate a policy on training and employing such staff. | To train and develop a nuclear manpower team by engaging staff for the operation and maintenance of the first turbine at Ninh Thuan Nuclear Power Plant 1, for a nuclear safety agency, and for research and technical assistance agencies by year 2020. To ensure stable operation of university and post-university training establishments for the nuclear power industry. | To complete training and development of a nuclear manpower team to ensure sufficient staff for investors, for nuclear safety agencies, and for other research and technical assistance agencies to meet the requirements for year 2030. To operate university and post-university training establishments for the nuclear power industry. |
| **Investment and financial arrangement** | To invest and arrange finance by researching and formulating a regime and policy on investment and arranging finance to implement the project for construction of the first nuclear power plant. | To invest and arrange finance for the first nuclear power plant, and to prepare financial plans for the next plants; to formulate a financial regime for management of radioactive waste and dismantling plants with expired use period. | To invest and arrange finance for subsequent nuclear power plants, and to operate a regime for providing funding for agencies which manage radioactive waste and decommission expired plants. |
| **Developmental orientation of nuclear power plants** | First turbine with approximately 1,000 MW output to be commissioned. | Approximately 8,000 MW output should provide approximately 7% of the total power source of the country. | Approximately 15,000 MW output should provide approximately 10% of the total power portfolio for the country. |
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