

Nuclear power program for Poland: objectives, assumptions and basic infrastructure

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Challenges for the Polish Power Sector



1. Security of electricity supply

- Diversification of fuel mix
- Development of interconnections, transmission and distribution grids

2. Abatement of SO₂, NO_x, CO₂ emissions

3. Development of new generation sources

4. Increase in electricity generation efficiency





EU Climate Energy Package – Additional Challenges

- 1. New Emission Trade Scheme (ETS) –
linear decrease of available CO₂
allowances**
- 2. Full auctioning within ETS for electricity
sector since 2020**
- 3. 15% share of RES in final energy
consumption in 2020 – target for Poland**
- 4. Implementation of CCS technology –
participation in the EU Flagship
Programme**



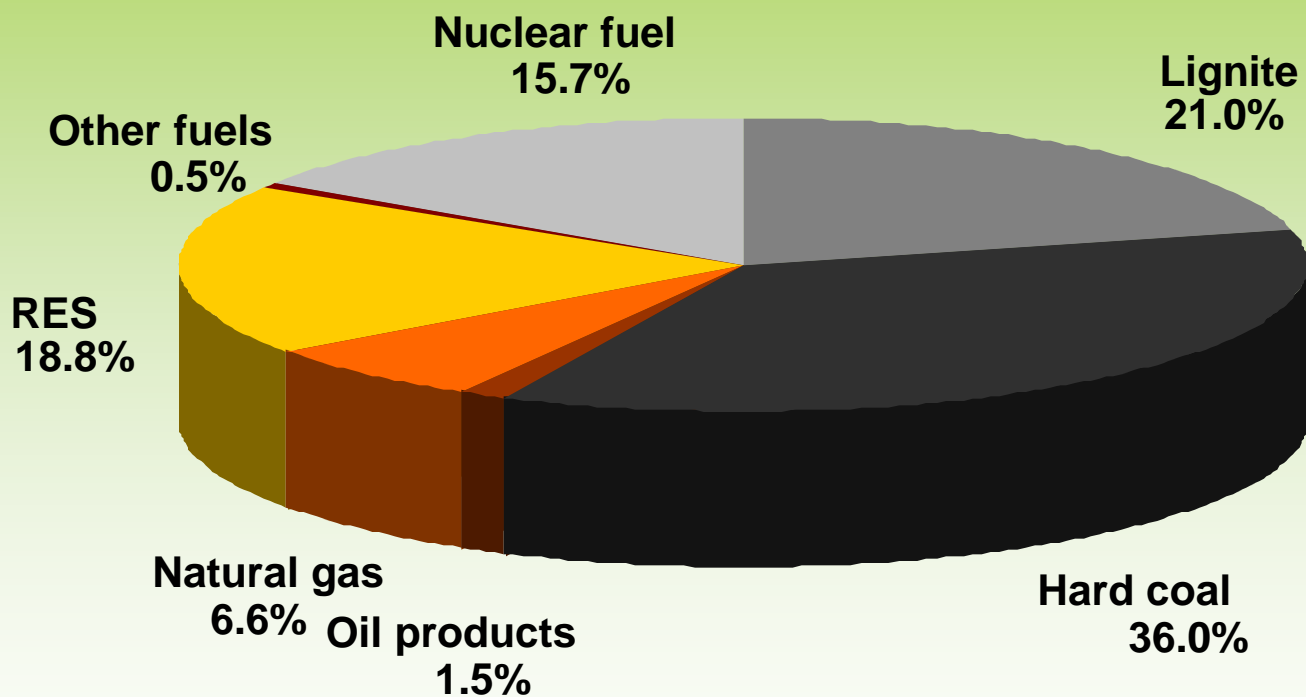


Poland's Energy Policy until 2030 - priorities

- Energy efficiency improvement
- Increasing security of fuel and energy supplies
- Diversification of power generation sources through implementation of nuclear power
- Increasing use of renewable energy sources, including bio fuels
- Development of competitive fuel and energy markets
- Limitation of energy sector's impact on environment



Net electricity generation by fuel type in 2030



Source: Fuel and energy demand forecast



Nuclear Power Plants in Polish power system

- stable and reliable electricity generation sources with 60-year lifetime
- new capacities to replace old public power plants; limiting import of coal
- predictable and stable in long time period electricity generation costs
- CO₂ and other emission free
- possibility of fuel storage for many years ahead
- known spent fuel and radioactive waste management technologies;
- possibility of uranium suppliers selection from various regions and stability of fuel supply





Advantages for the Polish Economy

- **CO2 and other emission free**
- **saving organic fossil fuels for future generations**
- **economic revival of the regions**
- **possibility of boosting the national industry**
- **development of Polish R&D resources**
- **development of new faculties at universities**
- **economy innovations development**

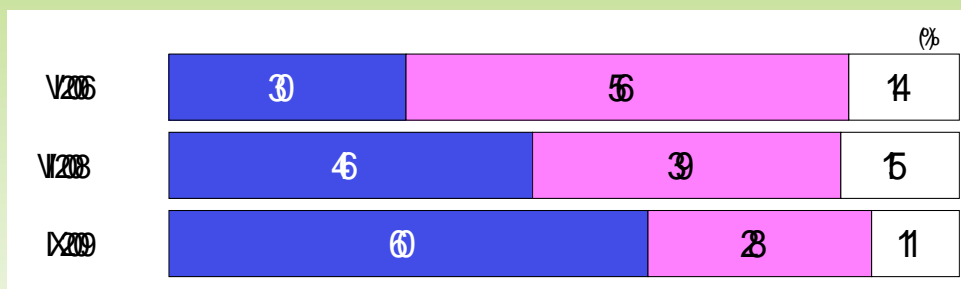


Do you support the following activities:

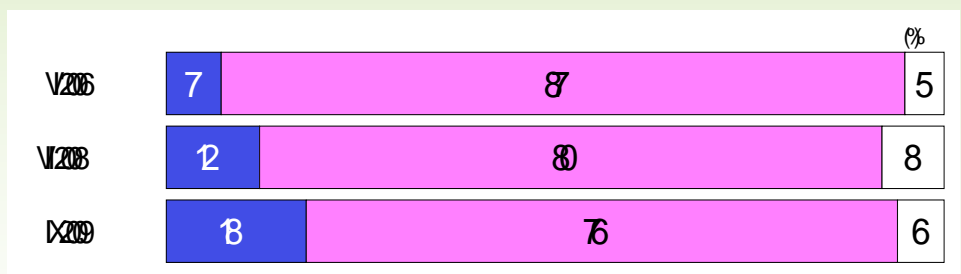
- Tax incentives for the development of alternative energy sources, e.g. solar, wind energy



- NPP Construction to make domestic economy more independent of oil and coal



- Increase in energy taxes to encourage consumers for energy savings/energy efficiency



■ For ■ Against ■ Undecided



Legal framework of Nuclear Power Program

- Resolution no. 4/2009 of the Council of the Ministers of 13 January 2009 on nuclear power development activities
- Resolution no. 1 of the PGE Extraordinary General Meeting of Shareholders of 18 February 2009 on appointing PGE as entity to cooperate on preparing Polish Nuclear Power Program and having a leading role in its realization
- Ordinance of the Council of Ministers of 12 May 2009 on establishing Government Commissioner for Nuclear Power in Poland
- „*Framework time schedule for nuclear power activities*” acknowledged by the Council of Ministers on 11 August 2009





Nuclear power development in Poland – stages (1)

1. Development of nuclear power program
2. Public discussion
3. Formal acceptance of the program by the Government
4. Development of necessary infrastructure:
 - legal regulations of implementation and functioning of the nuclear power industry
 - Ensuring the priority of the nuclear safety standards on each stage
 - Creation of the institutional and organizational structure
 - Ensuring the effective system of human resources training/education
 - Development of the R&D resources and domestic industry



Nuclear power development in Poland – stages (2)

- 1. Preparatory phase for the construction of the first NPP:**
 - nuclear technology and suppliers selection, concluding contracts
 - providing financing for the first NPP
 - auxiliary investments planning
- 2. Construction of the first NPP in accordance with safety- quality - and economic – requirements**
- 3. Construction of further units of NPPs**
- 4. Safe, secure and efficient operation of the first NPP**
- 5. NPP decommissioning**
- 6. Implementation of spent fuel final solutions**



Nuclear safety assurance

- **Responsibility for the nuclear safety of the NPP: Investor, later operator/owner**
- **Selection of III_{rd} generation plant ensuring the safety of the population even in case of human error and/or equipment failures**
- **The experience of 50 years of NPPs operation will be used**
- **The European Utility Requirements will be followed**
- **An independent and strong Regulatory Body will regulate safety issues, control NPP owner's activities and assure the nuclear safety of the NPPs, using our own experience of 50 years of safe operation of research reactors and with the assistance of IAEA, WENRA, NEA OECD, WANO and others...**

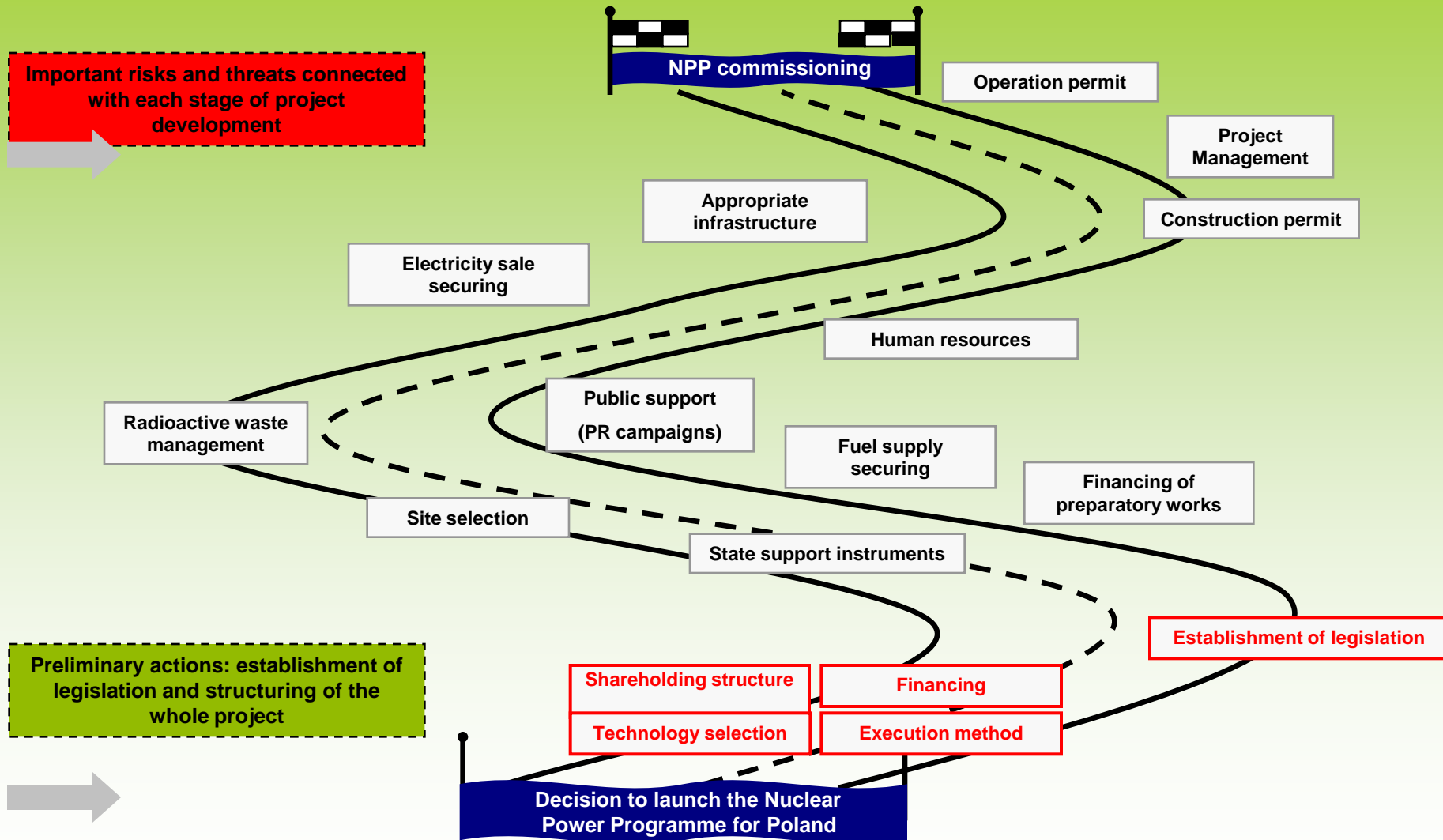


Objectives of Nuclear Power Program for Poland

- ✓ to determine the optimum scope and conditions for nuclear power development
- ✓ to specify the necessary activities and tasks to be fulfilled by the state administration within a proposed time schedule
- ✓ to estimate the costs of nuclear power development and indicate the sources of its financing
- ✓ to assess the economic, social and environmental impact of the Nuclear Power Program for Poland



Basic NPP construction issues





Framework time schedule for nuclear power development - stages

- **I until 31.12.2010** preparation and approval by the Council of the Ministers of the Polish Nuclear Power Program
- **II 2011 – 2013** NPP site selection and conclusion of a contract for construction of the first NPP
- **III 2014 – 2015** preparation of technical design and obtaining all required decisions and permits
- **IV 2016 – 2020** construction of the first NPP in Poland



Framework time schedule for nuclear power development

Government administration

- Adaptation of Polish legislation
- Economic analyses for electricity generation
- NPPs sites analyses
- Site analyses and research for low and medium radioactive waste depository
- *National Plan for Radioactive Waste and Spent Fuel Management*
- Human resources training programme for nuclear power institutions
- Information and education campaign
- R&D resources development
- Involvement of Polish industry in Nuclear Power Programme
- Searching for uranium sources in Poland
- Preparing National Atomic Energy Agency (PAA) for fulfilling the duty of nuclear and radiological regulator
- Designing and construction of low and medium radioactive waste depository

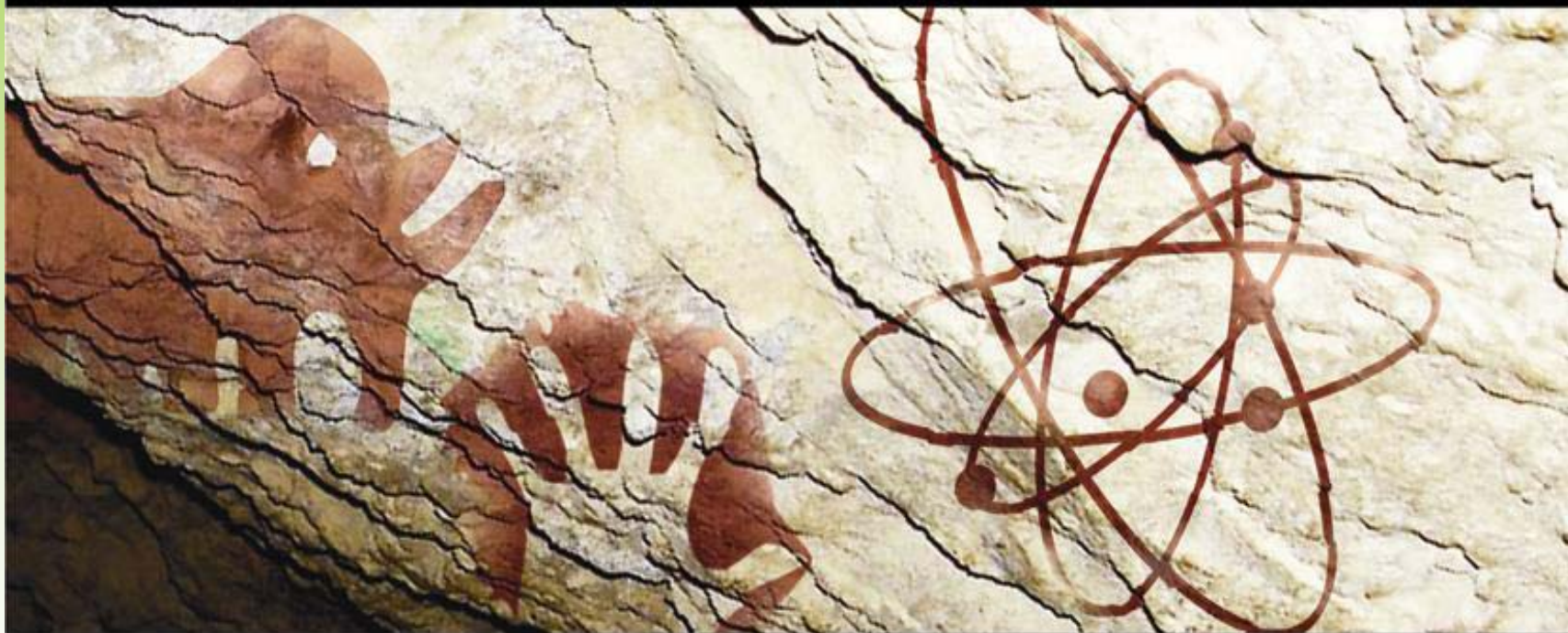




MINISTRY OF ECONOMY

Thank you for your kind attention

Nuclear Energy



Evolution in progress

**Competition for poster advertising the issue of
public acceptance for nuclear power in Poland
(Cracow, 27.04 – 14.05.2006)**

**Hanna Trojanowska
Government Commissioner for Nuclear Power**