



The first Polish NPP build Project – state of play

Project overview

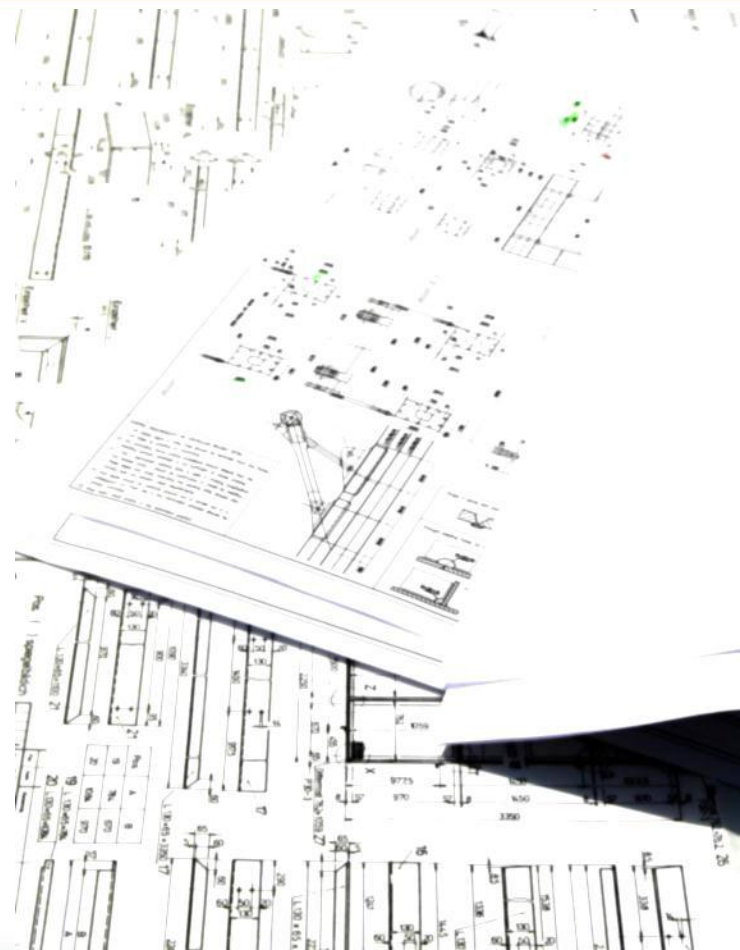
Washington DC,

24 March 2013

PGE Energia Jądrowa S.A.

Agenda

- **Specific character of the nuclear project in Poland**
- **Organization- nuclear companies and the Project**
- **Project status**
- **Questions & Answers**



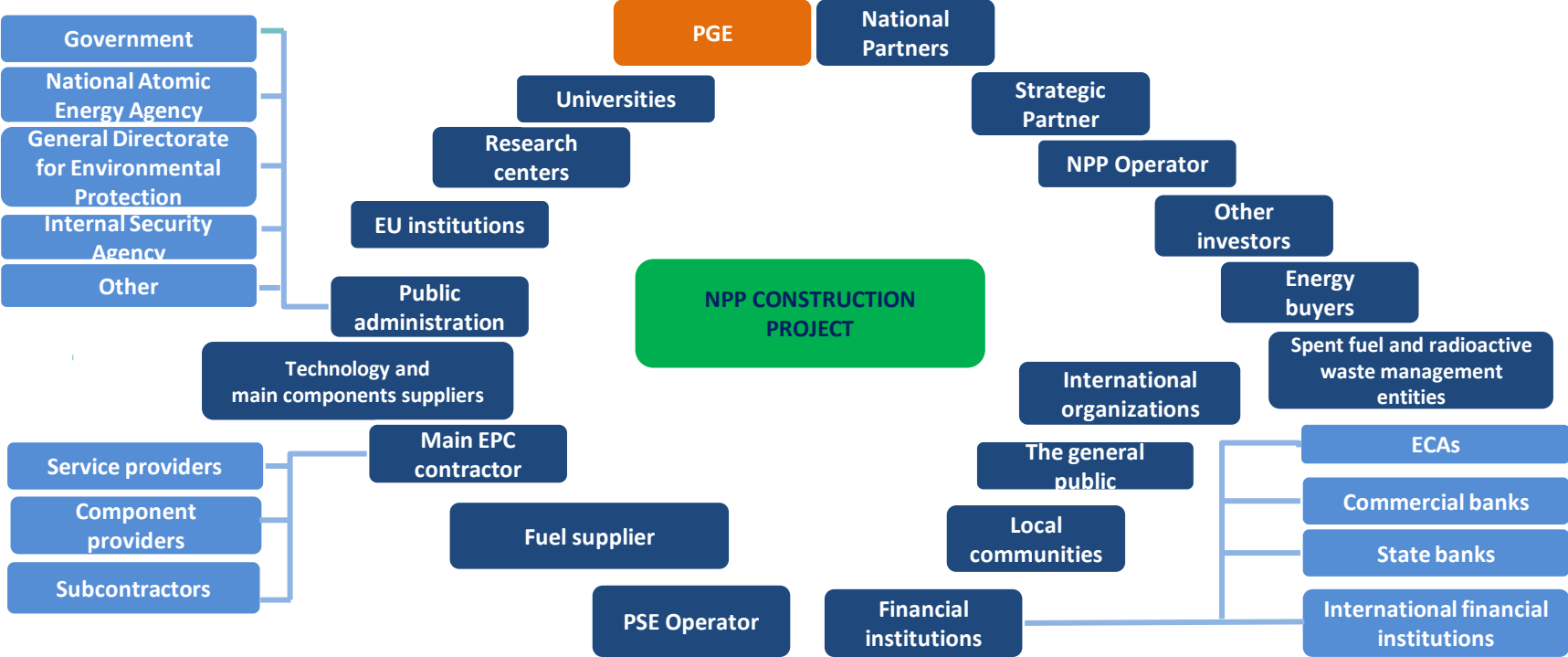
Specific character of nuclear projects (1/2)

- **Necessity to develop comprehensive, nuclear-specific regulatory solutions**
to ensure quality and the highest level of nuclear safety and radiological protection during the preparatory phase, construction and operations of NPP and to meet the requirements and guidelines set by international organizations (IAEA, EU, EUR, WENRA) as well as all available experience gained worldwide from NPP operation and accidents (Fukushima)
- **Requirement to prepare and successfully execute the appropriate environmental consultations**
(at the national and international level) preceding the notification procedure to the European Commission (Euratom i.a. Art. 41)
- **The process of obtaining the financing for the project is time-consuming due to very specific expectations and requirements**
imposed by, i.a., financial and insurance sectors as well as due to requirement for potential government support (e.g. Government guarantees)
- **Competent development and successful completion of tendering procedures**
depend on ability to access specific skills, expertise and experience in the field of nuclear power, especially during the selection and contracting of a plant vendor and a main EPC contractor
- **The need for close cooperation with the TSO (PSE Operator)**
to implement grid modifications in a timely manner so that the grid can support the evacuation of power (units of over 1.000 Mwe capacity) and provide stable and assured power supply to the NPP (to meet, i.a., the cooling system's needs)

Specific character of nuclear projects (2/2)

- **Complexity and timing of the Site characterization works (24 months)**
as regulated by the Atomic Law – provides basis for the location permit and the construction license issued by the President of the National Atomic Energy Agency (NAEA)
- **Licensing processes are time-consuming and complex**
 - ❖ Nuclear- specific reports, incl. Location Report and PSAR
 - ❖ Nuclear-specific decisions and licenses, including:
 - ✓ Decision on environmental conditions– issued by the General Director for Environmental Protection
 - ✓ Location Permit – issued by the relevant Governor of the Voivoidship
 - ✓ Decision in Principle (issued by the Minister of Economy) – required to apply for construction permit
 - ✓ Construction license, combined with the reactor technology license, issued by the President of the National Atomic Energy Agency; it is required to obtain the „regular” construction permit; issuance of construction license takes at least 24 months (according to laws in force)
- **Long Lead Equipment,**
e.g. reactor vessel - about 5 years from the order placement
- **Development of an effective and competent operating organization as a pre-requisite for the operating license:**
(approx. 900 – 1000 persons for an NPP of approx. 3.000 MWe installed capacity) is preceded by an implementation of a long-term education, training and certification programs (5 – 7 years) for NPP operators

Nuclear project: major stakeholders









Investor PGE Group

PGE key assets



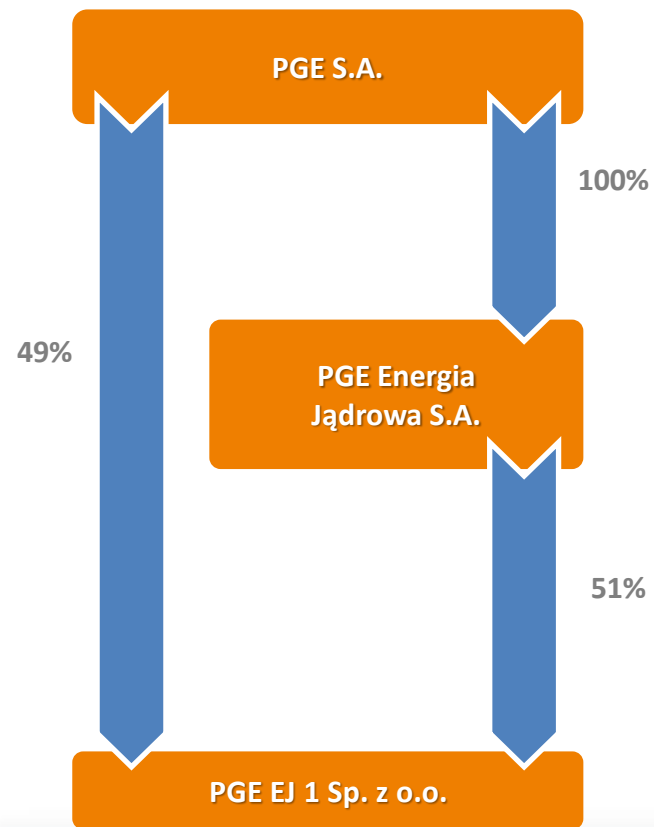
- **Polish market leader** (net production share: ~ 41%, distribution share: ~ 26%)
- **Number 12** on the list of Europe's largest power companies (installed capacity)
- **Own fuel** (lignite) provides 2/3 of production at relatively low cost

Investor PGE Group

	Total capacities installed in PGE CG	13.1 GW 2011
	Electricity sold by PGE CG	90.60 TWh 2011
	Electricity generated by PGE CG	56.52 TWh 2011
	Number of electricity consumers served by sales companies of PGE CG	5.1 m 2011
	Total lenght of power lines operated by PGE CG	274.700 km 2011
	Production of lignite in PGE CG mines	48.9 m tons 2011

- 2 lignite plants
- 36 hydroplants and 1 wind farm
- 2 coal plants
- 10 thermopower plants
- 2 lignite mines
- 1 distribution company and 1 retail company

Nuclear business line within GK PGE structure



- Strategic activities and decisions on the Capital Group level
- Cooperation with the Government
- Financing on the Capital Group level

- Strategic activities and decisions related to the nuclear project, incl. input into the development of the legislative framework
- Capacity building
- Selected operational activities on the project level (e.g. technology evaluation, pre-selection of sites)

- PGE EJ 1 as the entity responsible for project execution activities (i.e. the first Polish NPP build)
- Project development and execution
- Future NPP operator and holder of permits/licenses

Key tasks



Status of the nuclear power plant build project - key information

The nuclear power plant build project - main activities



Polish Nuclear Power Program (PNPP)

- PNPP is in the last phase of public consultations (transborder consultations that should end in 1Q2013)
- Government's Commissioner for Nuclear Energy is developing the PNPP draft and cooperates with PGE with regards to its development and implementation

Nuclear regulator (NAEA)



- NAEA drafts secondary legislation for the Atomic Law and detailed guidelines on its application
- President of NAEA will issue licenses necessary to construct, start-up and operate an NPP



Transmission system (PSE-O)

- Agreement with PSE Operator has been concluded and cooperation has been established
- Plan and schedule of preparatory works have been developed
- Tendering procedure for the performance of grid variance analyses in the identified sites and for sample technologies has been launched

National partners



- Letter of Intent pertaining to the purchase of shares in PGE EJ 1 Sp. z o.o. (SPV) has been concluded by PGE, Tauron, KGHM and Enea.
- PGE maintains leading role in the development and execution of the Project
- Ownership structure to be defined – 2Q2013

Selected activities to be continued by PGE in 2013 (1/2)



Strategy and partnership

- Development of partnership models that encompass scope of cooperation and optimum contracting approach
- Meetings with potential strategic partners under integrated proceedings and with business partners (incl. national partners)



Site

- Site characterization contractor – conclusion of the contract and commencement of its execution
- Closure of agreements and acquisition of authorization to access sites; preparations leading up to the launch of site characterization works



Regulatory framework

- Cooperation with the NAEA on the development of ordinances related to the Atomic Law
- Detailed analysis and NAEA authorisation of: scope of documentation required to prepare application for preliminary opinion and construction license to be issued by the President of NAEA



Financing and insurance

- Development of possible structural options and financing models for the Project (i.e. gaining debt financing from Export Credit Agencies and commercial banks, participation of partners, role of the State)
- Development of the OCIP program for the Project

Selected activities to be continued by PGE in 2013 (2/2)



Project management/ Integration

- Development of assumptions for the implementation of key integrated management systems (safety, quality management, contract administration) in compliance with NAEA and IAEA requirements

Technology/ O&M / Fuel



- Update of assumptions and requirements regarding generation III / III+ reactor technology and EPC services
- Development of strategy and guidelines for O&M
- Development of strategy and guidelines for nuclear fuel management
- Owner's Engineer contract award, launch of integrated proceedings



Capacity building

- Development of skills and competencies within the organization and recruitment process (technical skills)
- Nuclear safety and quality management trainings
- Nuclear safety culture implementation within the organization

Communication



świadczenie o atomie
energia jądrowa w Polsce

- Education and information campaign on nuclear power and project execution both on a national and local level
- Local Information Centres: project roll-out and implementation of the National Program for Cooperation with Higher Education Institutions

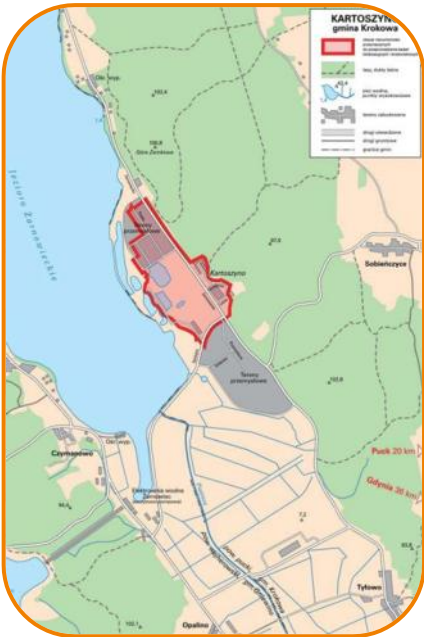
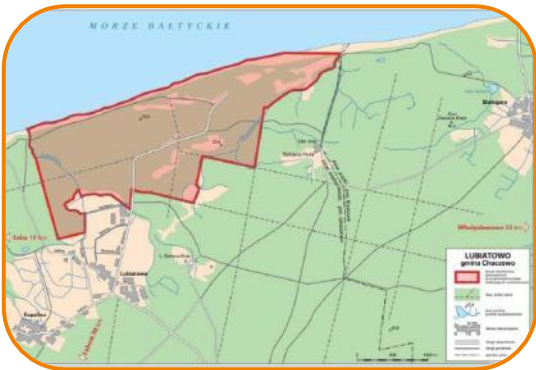
Environmental studies and Site investigation

Contractor selection process, scope of work

The Contractor selected in the procedure is a consortium composed of:
WorleyParsons Nuclear Services JSC, WorleyParsons International Inc. and WorleyParsons Group Inc.

Scope of Environmental studies and Site investigation:

- seismic, tectonic, geological and technical, hydro-geological, hydrological & meteorological conditions,
- human- induced external events
- external events resulting from natural disasters,
- population density and land development,
- possibility to conduct emergency plans in a radiation emergency,
- environmental conditions,
- nature inventory outcomes,
- environmental impact assessment,
- organic and inorganic pollutants.



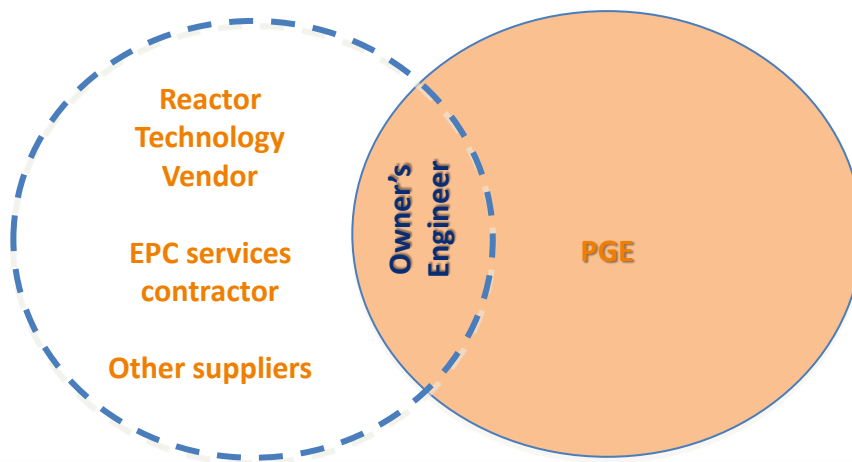
Investment location decisions issued by Governor of Voivodship



Owner's Engineer

Owner's Engineer plays a key role in the NPP build project:

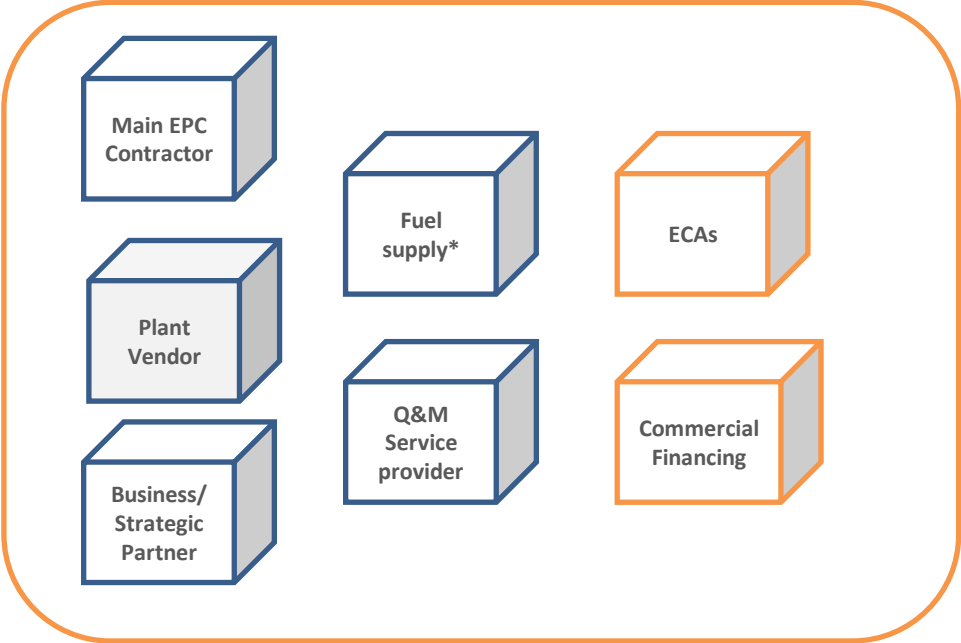
- constitutes part of Investor's organization providing support at all stages of Project execution,
- supports the coordination of works performed by the Investor and major contractors,
- complements the Investor's organization with skills and expertise necessary to execute a complex NPP build project,
- provides for the knowledge transfer to the Investor's organization so that the Investor can become the „intelligent customer” (as per IAEA definition).
- Recent development: **call for proposals announced on 15th April** (following over 2-years initial dialog with potential bidders) !




Integrated procedure

Under integrated procedure, the potential vendors will be required to include the following in their tender offers:

- Nuclear technology for an NPP of 3000 MWE installed capacity – 2 or 3 units based on a gen. III/III+ technology, together with main EPC services delivery
- O&M support services, together with the knowledge transfer program to benefit PGE EJ 1 (O&M)
- Strategic Partner’s equity interest and energy off-take
- Declaration of intent to provide debt financing by ECAs and commercial banks (letters of intent and preliminary financing arrangements at the technology selection stage)
- Fuel supply
- Recent development: **commencement of the initial dialog with consortiums on 18th April**



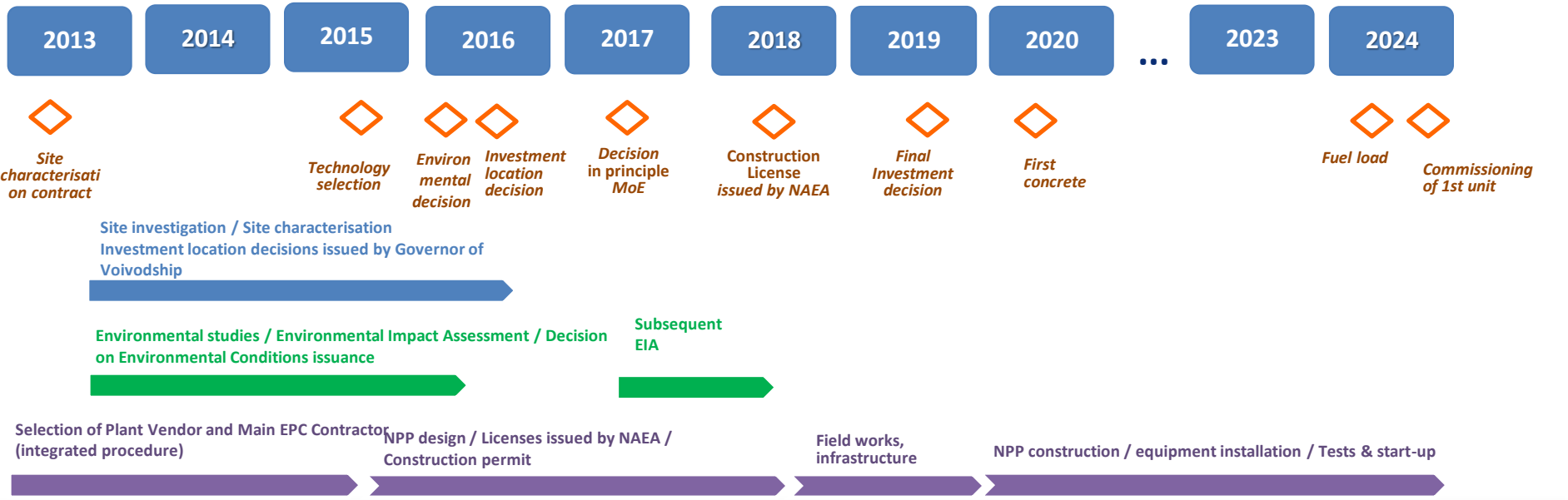
 Required

 Required (in the form of declaration of intent)

**The question of embedding fuel supply in the integrated proceedings is subject to further analyses*

Framework schedule for the commissioning of first Polish NPP unit encompassing the integrated procedure (selected elements)

- Launch of site characterization works – 1st half of 2013
- Conclusion of the integrated proceedings – 1st half of 2015
- Launch of construction activities – 2d half of 2018 (first nuclear concrete – 1st half of 2020)
- Launch of operations of the first NPP unit – 2d half of 2024



Thank you

