



ČEZ, a. s.

NUCLEAR POWER PLANTS

CONSTRUCTION

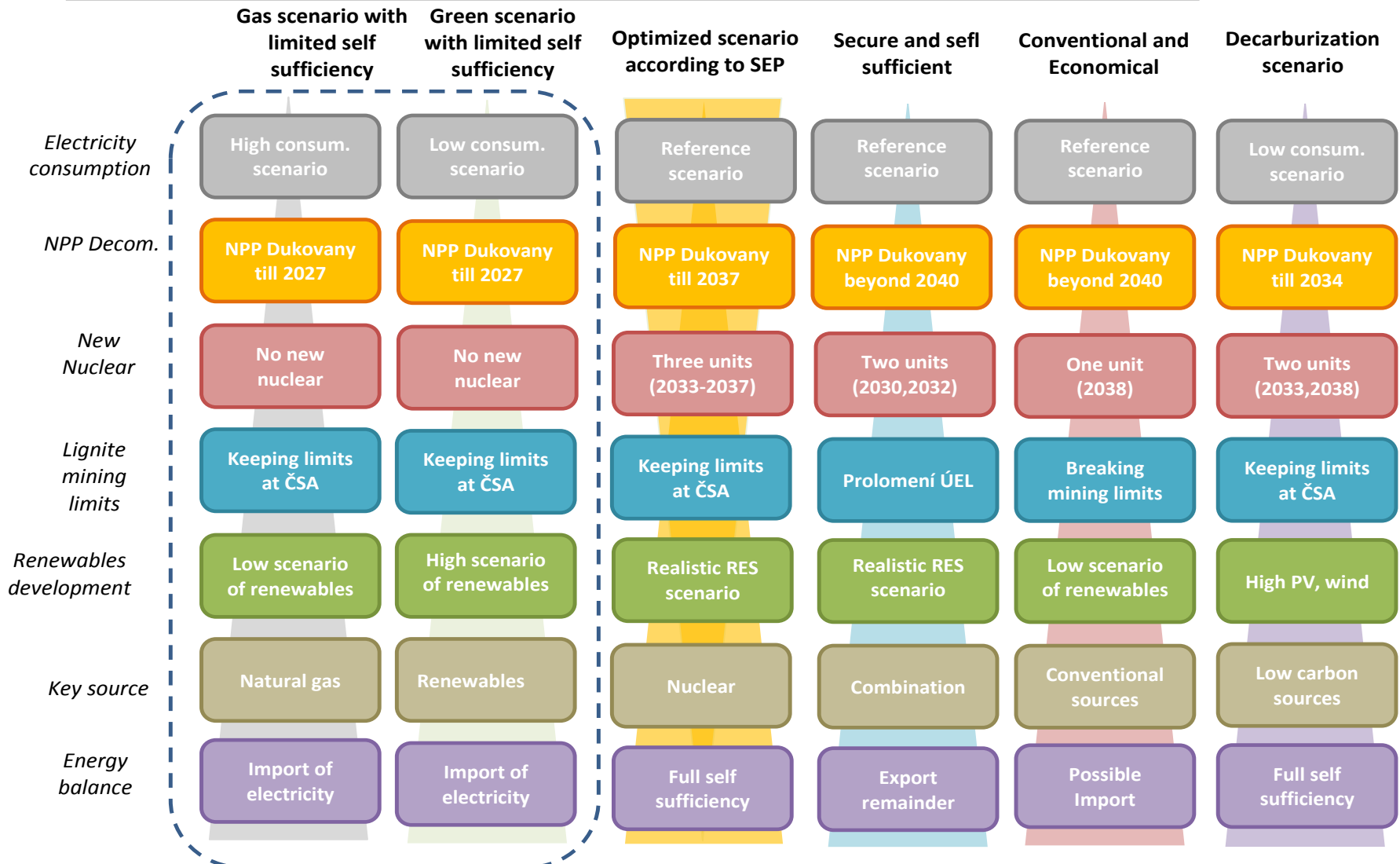
NE•RS
2015

***WILL WE KEEP OUR KNOW-HOW AND
COMPETITIVENESS IN NUCLEAR
INDUSTRY?***

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STATE ENERGY POLICY



CZECH STATE ENERGY POLICY

SUMMARY OF GOALS FOR NUCLEAR ENERGY



- Nuclear energy will reach approx. 50% share of total production of electrical energy
- Construction of NPP up to 2500MW (20 TWh) till 2035
- Long term operation of existing NPP Dukovany
- Construction of additional one unit in NPP Dukovany in order to replace existing NPP Dukovany
- Identification of the locality for further construction of NPP
- Decision about site for permanent storage of nuclear waste till 2025

NATIONAL ACTION PLAN FOR NUCLEAR ENERGY

RECOMMENDED STEPS



- **Immediate continuation of preparation works for NPP Temelín project and on NPP Dukovany project**
 - Preparation works to be done for 2 units on each site (land, permits, licenses)
 - Current expectation is to build 1 unit on each site only
 - However with possible extension to 2 units on respective site if needed
- **Carve out both projects into project companies** to enable future entry of the state or strategic partner
- **Start discussion with strategic partners**
- **Start the discussion with EU** (tender approach, allowable financing models, assurance of the project feasibility)
- **Decide and approve the final investment and delivery model** in order to assure feasibility of the project .
- **Preparation of the Czech legislation modification** in order to enable acceleration of the preparation works
- **Keep know-how and teams**

- ❧ **Škoda Prague initiative for export of conventional island of the NPPs and subsequently generally for energy sectors**
- ❧ **Initiative substantial also for preparation nuclear projects in ČR (Temelín, Dukovany)**
- ❧ **Initiative is also in line with tasks given by the government – Czech government has approved National Action Plan for Nuclear Energy on 3rd June, 2015. In the chapter 5.3., there is stated the following; Organization of the supply chain:**
 - ❧ Although they are private companies owned by various owners, their common interest is to carry out business in the sector under the powerful control of the state.
Knowledge and the maintenance or development thereof and the involvement of suppliers are important for the development of the sector as a whole.
 - ❧ **It is recommended to initiate the establishment of an organisation which would associate the industrial undertakings participating in supplies for the nuclear energy sector. Such an organisation would be a partner of the Committee** (with the representative of the organisation as a member thereof) and could provide for the transfer of knowledge between the government and the industry, participate in the assessment of the NAP NE and submit proposals aimed at the Committee and coordination of members thereof.
- ❧ **Škoda Praha brings traditional trademark and takes the lead of the Alliance**

CZECH POWER INDUSTRY ALLIANCE

EXPORT COORDINATOR OF CZECH DELIVERIES FOR NUCLEAR POWER PLANTS

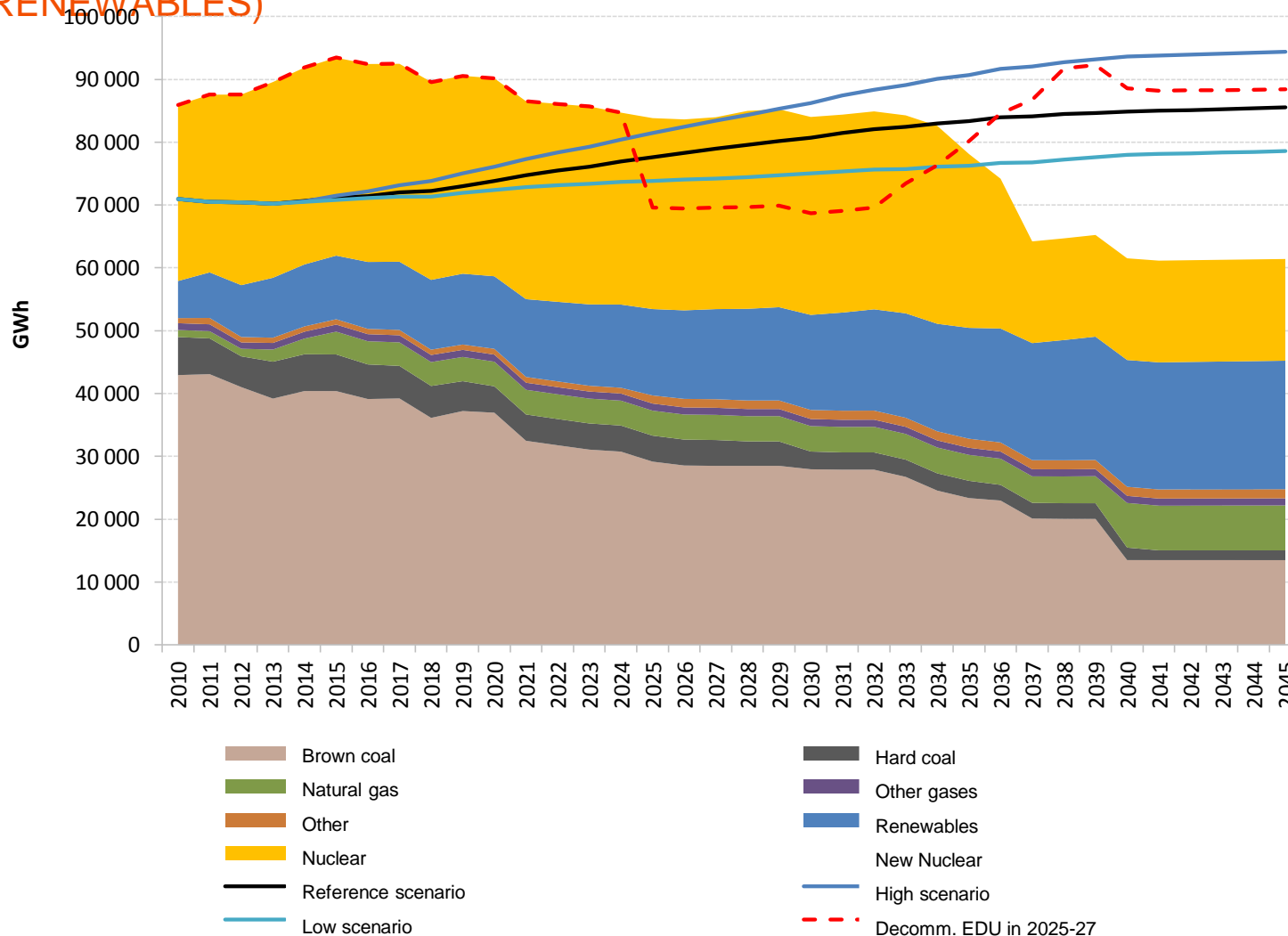


NATIONAL ACTION PLAN DEFINES FOLLOWING TASKS TILL 12/2016 FOR THE AREA OF NUCLEAR NEW BUILD



Task	Task definition	Responsible / support	Milestone
1	Establish and appoint a standing committee for the nuclear energy sector	MIT, MF	09/2015
2	Establish and appoint a government representative for the nuclear energy sector	Prime minister/ MIT, MF	09/2015
3	Hold one round of talks with all potential EPC contractors	MIT	06/2016
4	Discuss with ČEZ, a. s., from the position of an administrator of property rights, implementation of the NAP NE document.	MF	07/2015
5	Provide legal analysis to assess the feasibility of the NPP construction within the ČEZ Group on the basis of the instruction of a majority shareholder.	MIT	12/2015
6	Provide legal analysis for the feasibility of alternatives of NPP procurement (an exemption from the application of the PPL or direct award of construction under an inter-governmental agreement)	MIT	12/2015
7	Provide legal analysis for compliance of the applicable alternatives with the rules for public support (CfD, state guarantees for debt, participation of the state in the financing of the construction, ...) Provide analysis for legislative changes in order to minimize the risks and their impacts in the field of permitting and licensing processes	MIT	12/2015
8	Decide on the investment and delivery model for the construction of NNF	Government	06/2016
9	Based on the conclusions of the NAP NE, prepare a document that will specify further steps in development of new NPPs	MIT / MF	12/2016

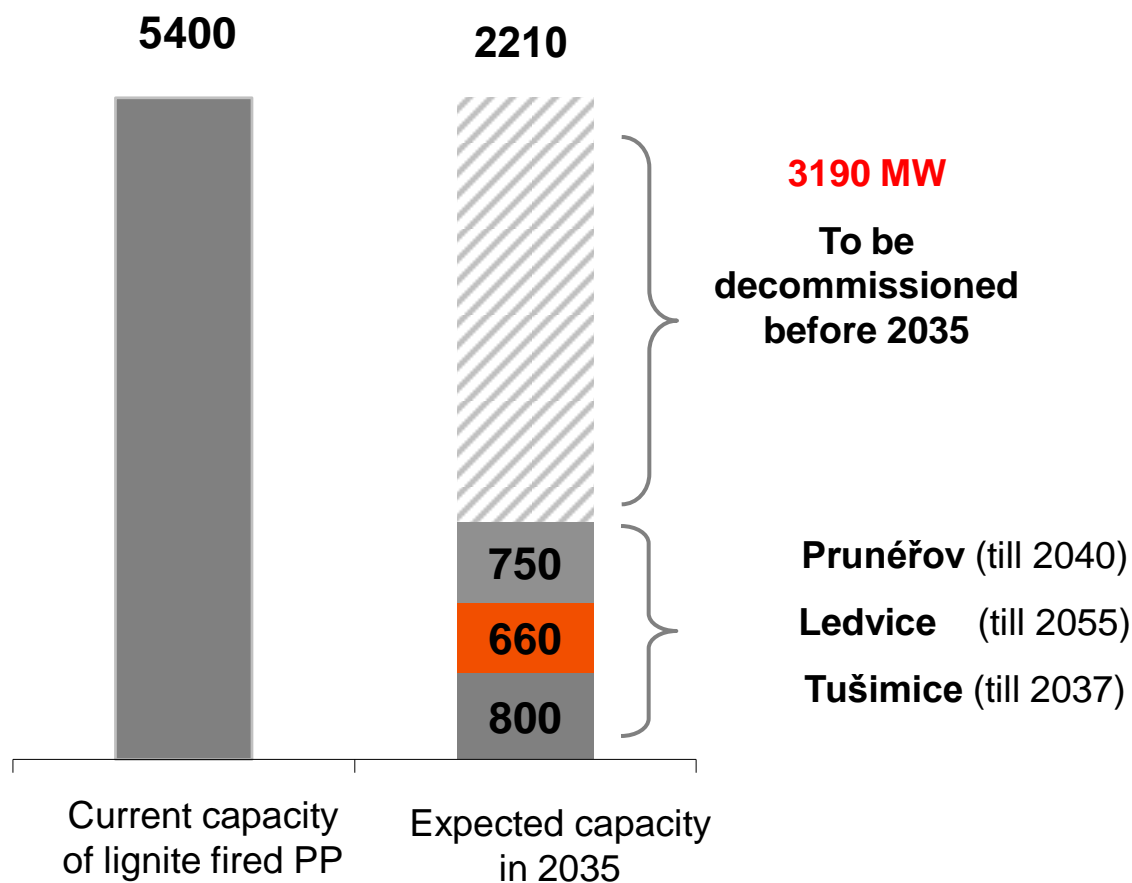
SIGNIFICANT ENERGY DEFICIT WILL OCCUR LATEST IN 2035 (EVEN WITH EXPECTED STRONG DEVELOPMENT OF RENEWABLES)



SIGNIFICANT PART OF LIGNITE CAPACITY WILL BE DECOMMISSIONED IN NEXT TWO DECADES



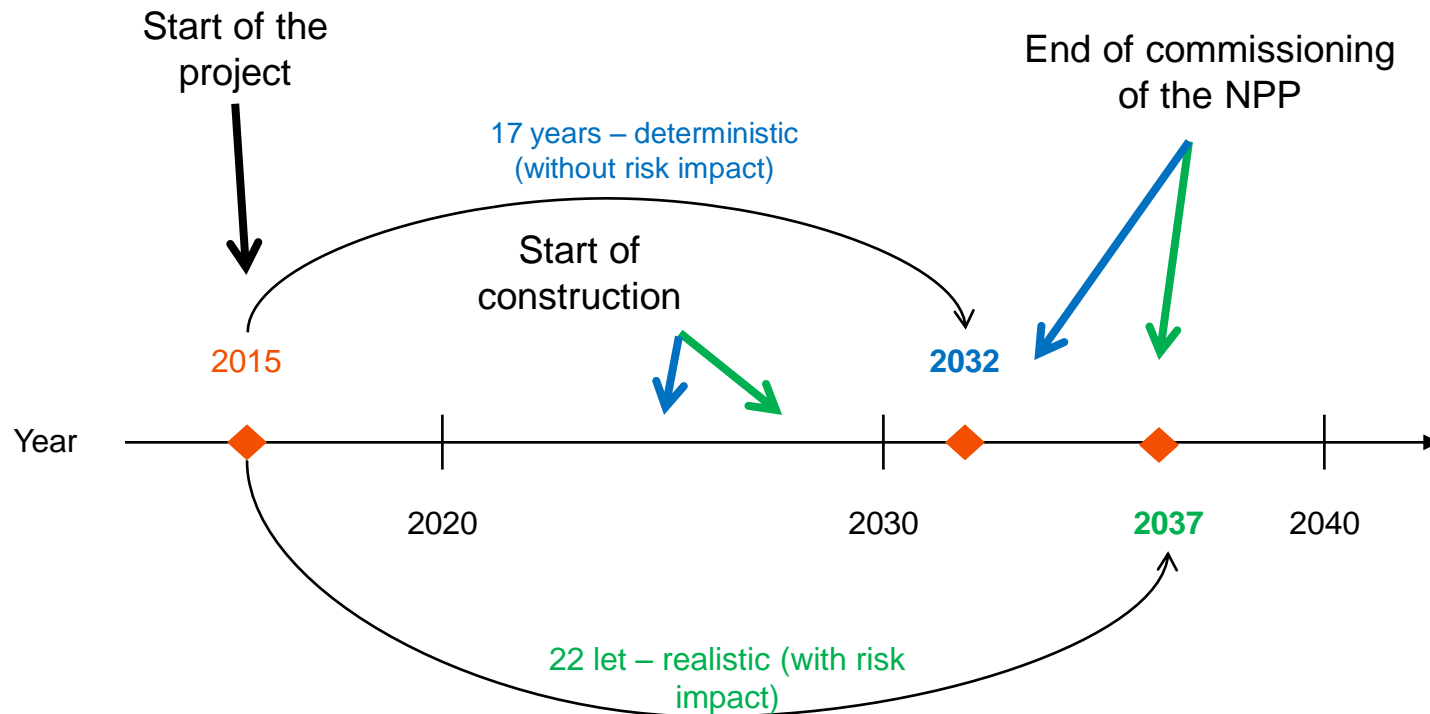
Lignite (brown coal) capacity (MW)



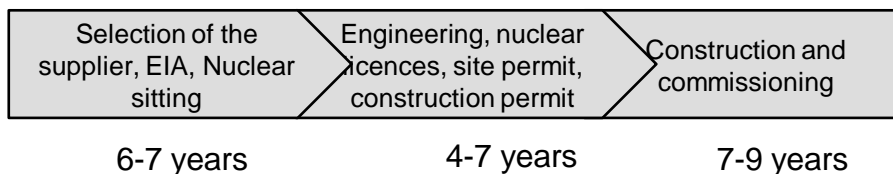
- Majority of coal fired power plants will disappear from the electricity market till 2035
- Additional 1410 MW to be decommissioned till 2040
- Furthermore it is expected that NPP Dukovany 1-4 (2000 MW) will be decommissioned between 2035 - 37

Electricity production from power plants of approx. **7 GW** shall be replaced by new build power plants

PREPARATION AND CONSTRUCTION OF THE NPP NEW BUILD TIMEFRAME...



Fáze:



NPP DEVELOPMENT AND CONSTRUCTIONS IS A LONG PROCESS CONTAINING NUMBER OF

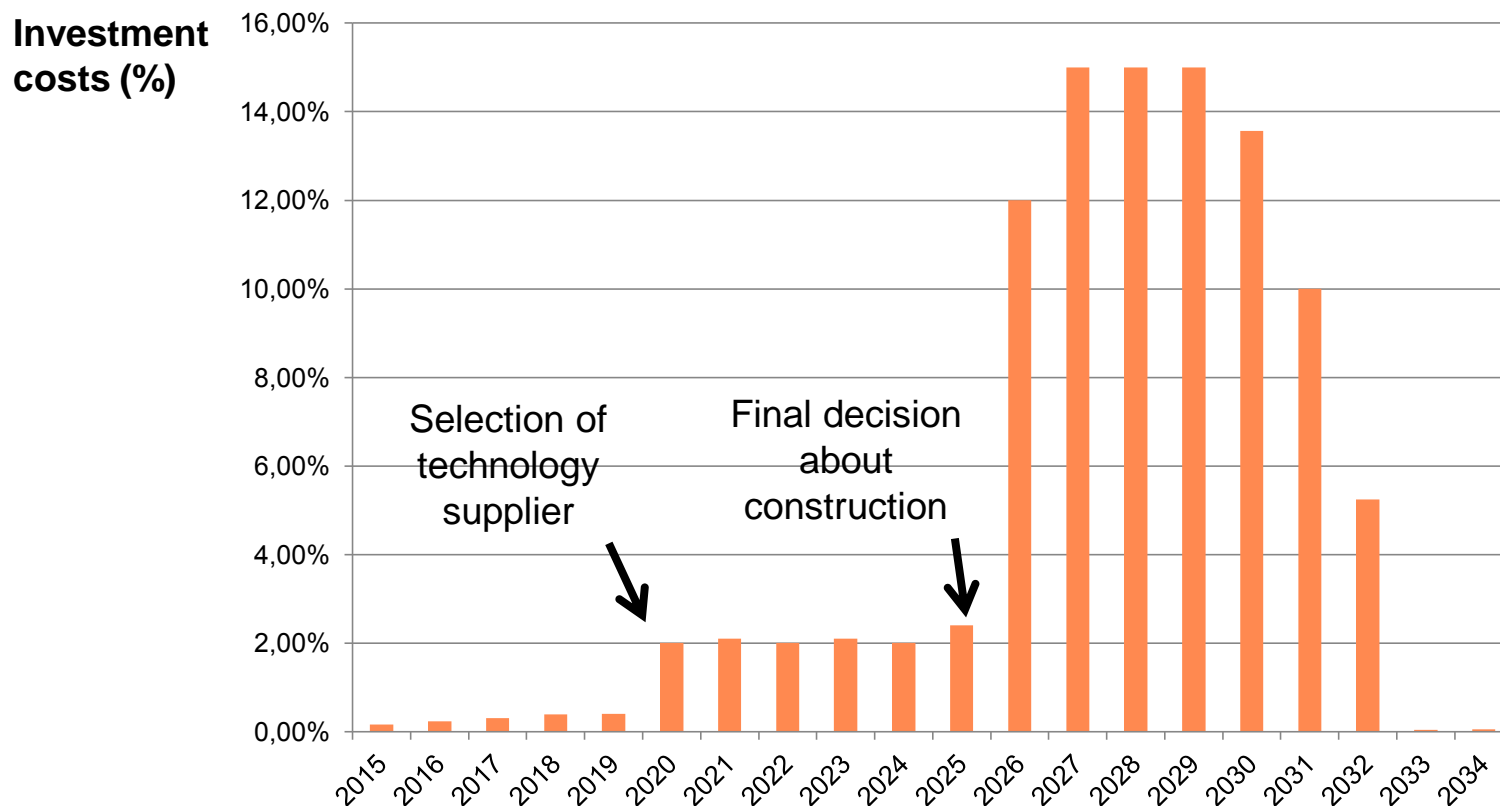


Milestone	Years from T0 (risk free)	Risk and its impact	Delay (in years)	Delay on critical path	Years from T0 (incl. risk)
EIA process resulting in positive EIA statement	4	Prolongation of the process - complicated process including international hearing and discussions Complaint or legal proceeding – strong opposition of NGO, number of obstructions and complaints	1	0	5
Site permit (nuclear regulator)	5,5	Longer preparation of the documentation (need to prepare more information than originally expected) Suspension of the process – request for provision of additional information Law suit based on third party claim	1	0	6,5
EPC tender acc. to public proc. law	5,5	Complaint or legal proceeding initiated by rejected of non-successful bidder Prolongation of the notification process in EC Prolongation of negotiation and / or of internal approval process	1	1	6,5
Site permit (ministry of local development)	7,5	Prolongation of assessment on ministry due to scope and complexity of the project Suspension of the process - request for provision of additional information Law suit based on third party claim	0,8	1,8	9,3
Construction permit (nuclear regulator)	9,5	Longer preparation of the documentation (need to prepare more information than originally expected) Suspension of the process – request for provision of additional information	0,5	2,3	11,8
Construction permit (ministry of trade and industry)	10,5	Prolongation of assessment on ministry due to scope and complexity of the project Suspension of the process - request for provision of additional information Law suit based on third party claim	0,5	2,8	13,3
Take over of first unit	17,5	Delay due to poor performance of Supplier Delay resulting from change in law	2	4,8	22,3

TODAY'S DECISION ABOUT PREPARATION WORKS IS DECISION ABOUT CREATION OF POSSIBILITIES RATHER THAN DECISION ABOUT CONSTRUCTION



illustrative example



CURRENT STATUS OF CEZ'S NEW NUCLEAR BUILD PROJECTS



New NPP Temelín

- SPV (Special Purpose Vehicle) preparation in process
- Fulfilment of conditions from permission and licenses issued (EIA, Safety Report/nuclear siting, ...)
- Related investments (at site, in the region)
- Other preparatory works (ČEPS, ...)

New NPP Dukovany

- Environmental Impact Assessment (EIA) – ready to start the process
- SPV (Special Purpose Vehicle) preparation in process
- Evaluation of the site aspect

New NPP Jaslovské Bohunice (SK)

- Ongoing Environmental Impact Assessment (EIA)
- Received the Statement from the Ministry of Industry

Maintain and improve know-how of the ČEZ nuclear team

- Participation at Generation III+ certification at European Utilities Requirements
- Consultancy – submitted proposal for Pre-Owner's Engineer for Jordan as part of Škoda Praha/AMEC FW JV
- Preparation of the engineering documents for JESS

WHAT HAS TO BE RESOLVED ...



Personnel field::

- Stabilization of the team
- To make the nuclear and investment branch more attractive again

Business side:

- Selection of the business scheme
- Selection of the most feasible way of financing

Permitting and licensing area:

- At least „stable“ environment, eventually appropriate change of legislation
- Support of Czech interests in the EU (public procurement, allowed state aid, ...)

Technical area:

- Selection of the most suitable technology
- Limitation of connection to the high voltage grid
- Quality of raw water / usable volume of cooling water
- Transportability of the heavy and oversized components

DO WE HAVE RESPONSES TO THE FOLLOWING QUESTIONS?



- What are the alternatives we have, compared to nuclear. How real are they in the Czech Republic conditions?
- Which criteria we are taking into the account (is the current spot price the only criterion we should take into the account)?
- What is the social price of the security of supply?
- Will we be able to buy electricity at competitive price, if there are no new sources in the Czech Republic?
- How the energy sector will look like in 2035 without the investment into new sources?
- What is the cost of a black-out in the Czech Republic? How real is the risk?
- What is socially acceptable price for electricity and what is current price?
- Will not lead postponement of decision on build - up / unsupported build - up new sources to problems, which will be heavy, or impossible manageable in the future?

THANK YOU FOR YOUR ATTENTION

