



# Nuclear New Build Status

## All for Power 2023

November 20<sup>th</sup>, 2023 – Prague

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# New Nuclear Build – Who we are?



## Elektrárna Dukovany II, a. s. (EDU II)

- subsidiary company of ČEZ, a. s.
- established in 2015
- 157 employees
- focus on 1 reactor unit up to 1200 MWe
- 60 years projected lifetime
- generation III+ PWRs

100 %  
←

ČEZ, a. s. (CEZ Group)

## Elektrárna Temelín II, a. s. (ETE II)

- focus on new reactors at Temelín
- SMR – Temelín / New site → New department





# CEZ Group Will Accelerate the Implementation of the New Vision 2030 „Clean Energy of Tomorrow“

## CEZ Group`s Strategic Priorities

Efficient operation, optimal utilization and development of generation portfolio

Modern distribution and care for customers' energy needs

Development of new energy in the Czech Republic

Development of energy services in Europe

## CEZ Group`s Key Strategy Thesis

- Efficiently managing nuclear power plants and preparing conditions for the construction of a new nuclear power plant as part of enhancement of energy security and decarbonization of the generation portfolio in Czechia
- Efficient management of coal-fired power plants located near the coal basins and decarbonization of Czech generating portfolio
- Modernizing and digitizing distribution and sales in Czechia, developing comprehensive services with respect to customers' needs
- Developing energy services (ESCO) and renewable energy sources (RES) in Czechia while fulfilling the Czech energy and climate plan
- Developing ESCO activities abroad and achieving a significant position in markets close to Czechia, primarily Germany, northern Italy, and Poland



## VICE 2030

### THE CLEAN ENERGY OF TOMORROW

#### I Transforming the Generating Portfolio to Low Emissions and Achieving Carbon Neutrality

- Efficiently managing nuclear power plants and preparing conditions for the construction of a new nuclear power plant as part of enhancement of energy security in Czechia
- Efficient management of coal-fired power plants located near the coal basins and decarbonization of Czech generating portfolio (including transformation of the heating industry)
- Developing renewable energy sources (RES) while fulfilling the Czech energy and climate plan

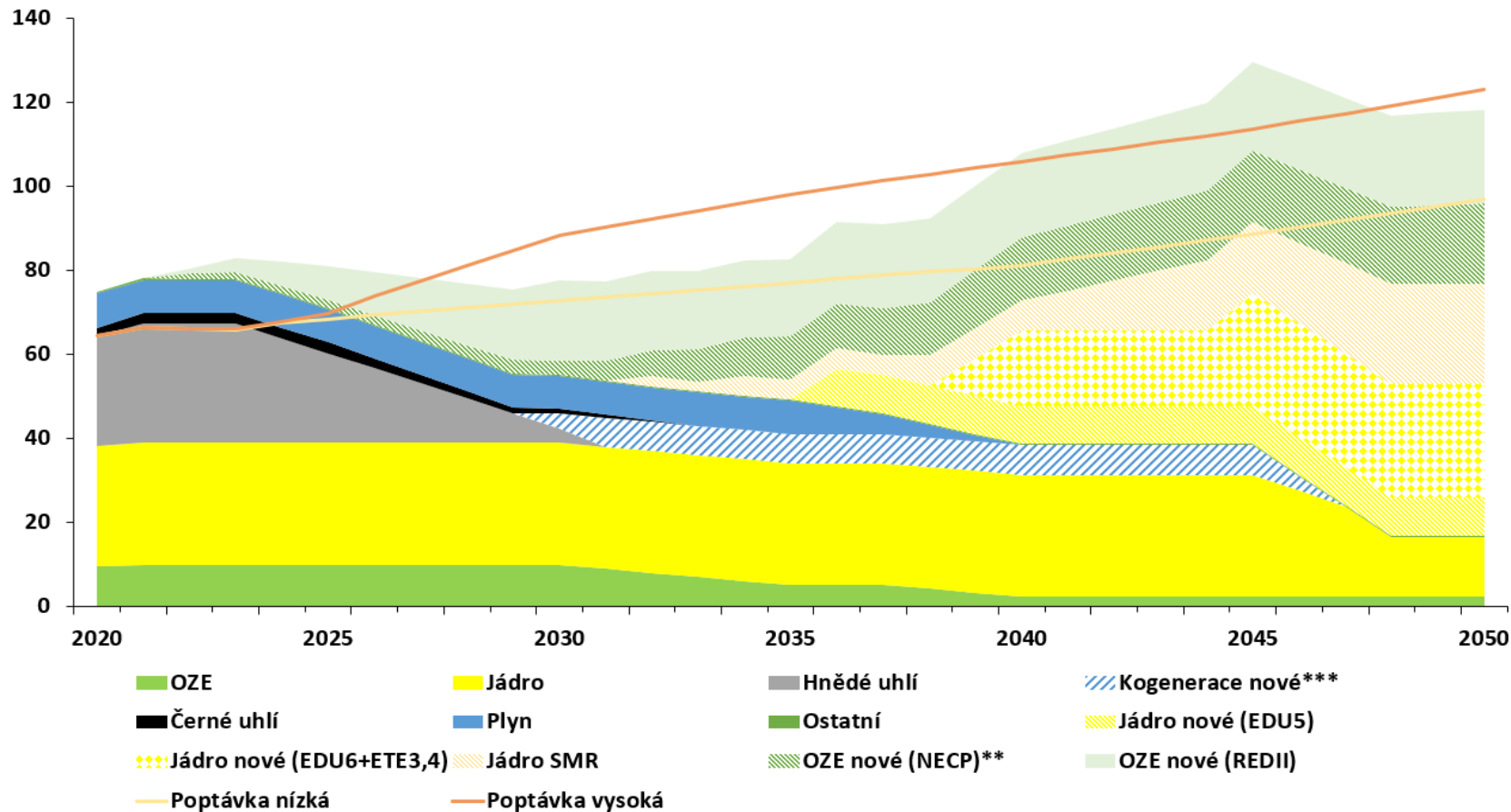
#### II Providing the Best Energy Solutions and the Best Customer Experience on the Market

- Modernizing and digitizing distribution and sales in Czechia, developing comprehensive services with respect to customers' needs
- Developing energy services sources (ESCO) in Czechia while fulfilling the Czech energy and climate plan
- Developing energy services (ESCO) abroad to achieve a significant market position in Germany, Northern Italy, and Poland

# Nuclear new build is essential for the long term energy security



## Production / consumption of the electrical energy in Czech Republic



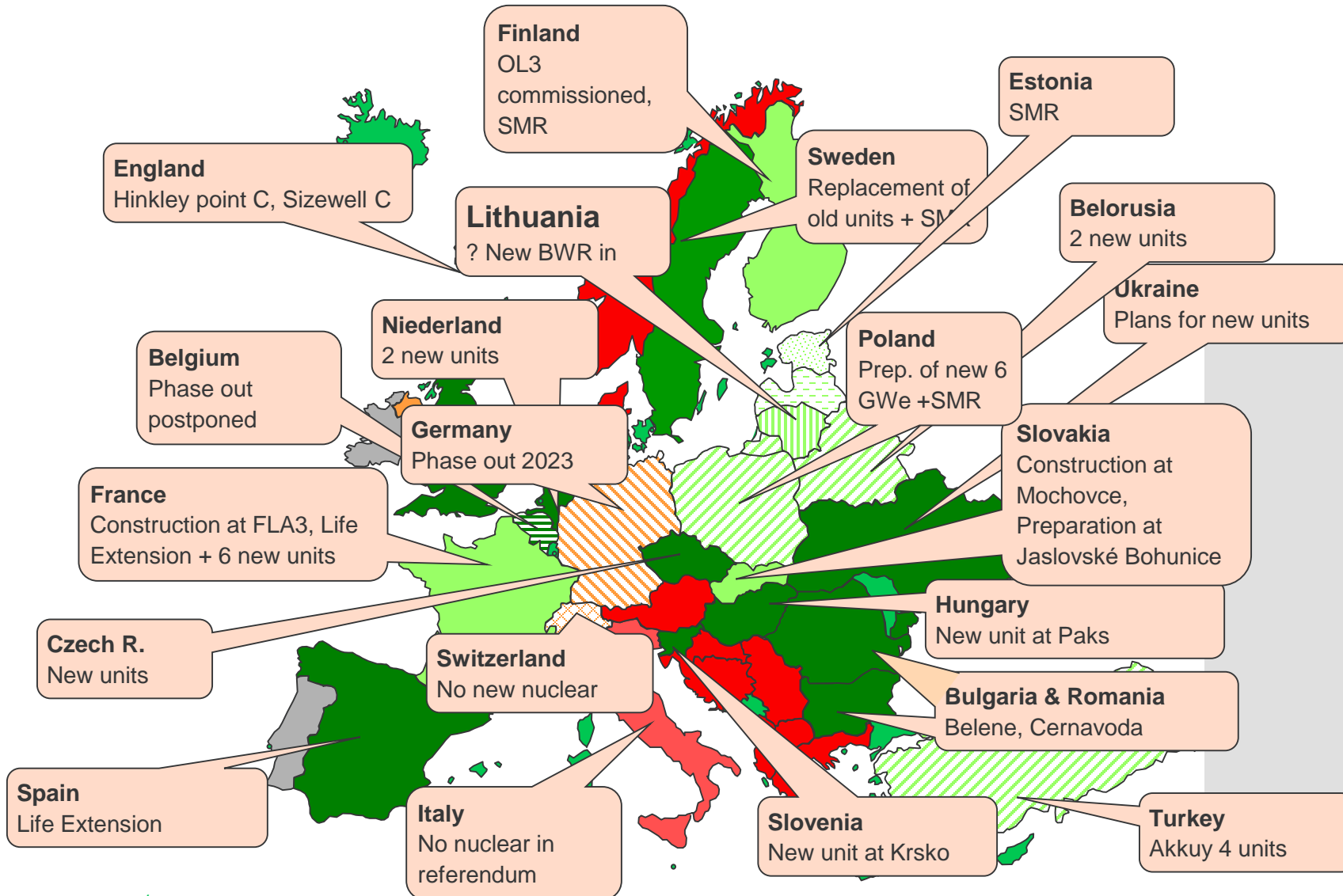
- The demand for electricity will grow significantly due to the electrification of transport and heating, as well as the production of hydrogen
- In 2050, only the Temelín NPP and hydroelectric power plants remain in operation To meet the EU goals (Fit-for-55 and REPowerEU), RES will grow rapidly by 2030, primarily photovoltaics
- Even so, there is a deficit of 30-55 TWh



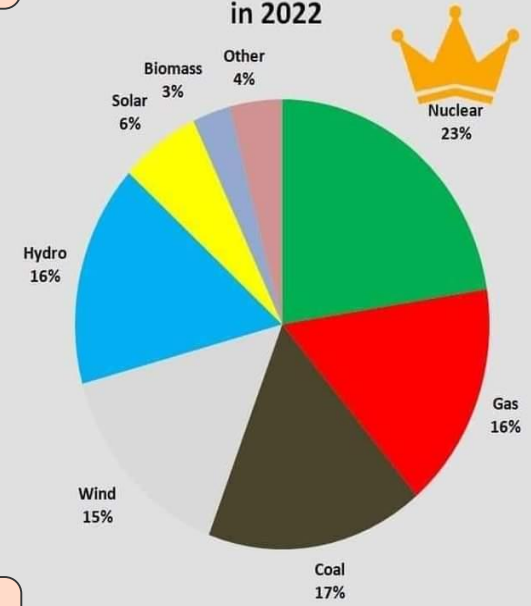
- EDU 5 alone will not be enough to cover future demand, even taking into account the growth of RES
- It will need to be developed
  - RES, including wind
  - Additional nuclear, including SMR



# Europe



Electricity generation in Europe in 2022





# New nuclear project at Dukovany site (unit 5) is in the first preparatory stage

Stage	End date	Permitting and licensing	Contract with technology supplier
<b>A</b> 1. Preparation, supplier selection	2024	EIA Site decision License for the siting	Tender process and contract signature <b>B</b>
2. Preliminary works	2029	License for construction, Building permit	"LWA - Limited Work Authorization" phase
3. Construction, commissioning	2036	License for commencement of trial operation	Construction
4. Warranty period	2038	Operation license	Warranty period operation <b>C</b>

## Expected timeline of "Preparation, supplier selection" stage

- Submission of final bids for technology
- Evaluation and negotiation of contract details with the suppliers
- Finalization and signing of the contract with the supplier
- PPA, RFA, IA finalization and signing with the Czech State (subject to EC notification result)

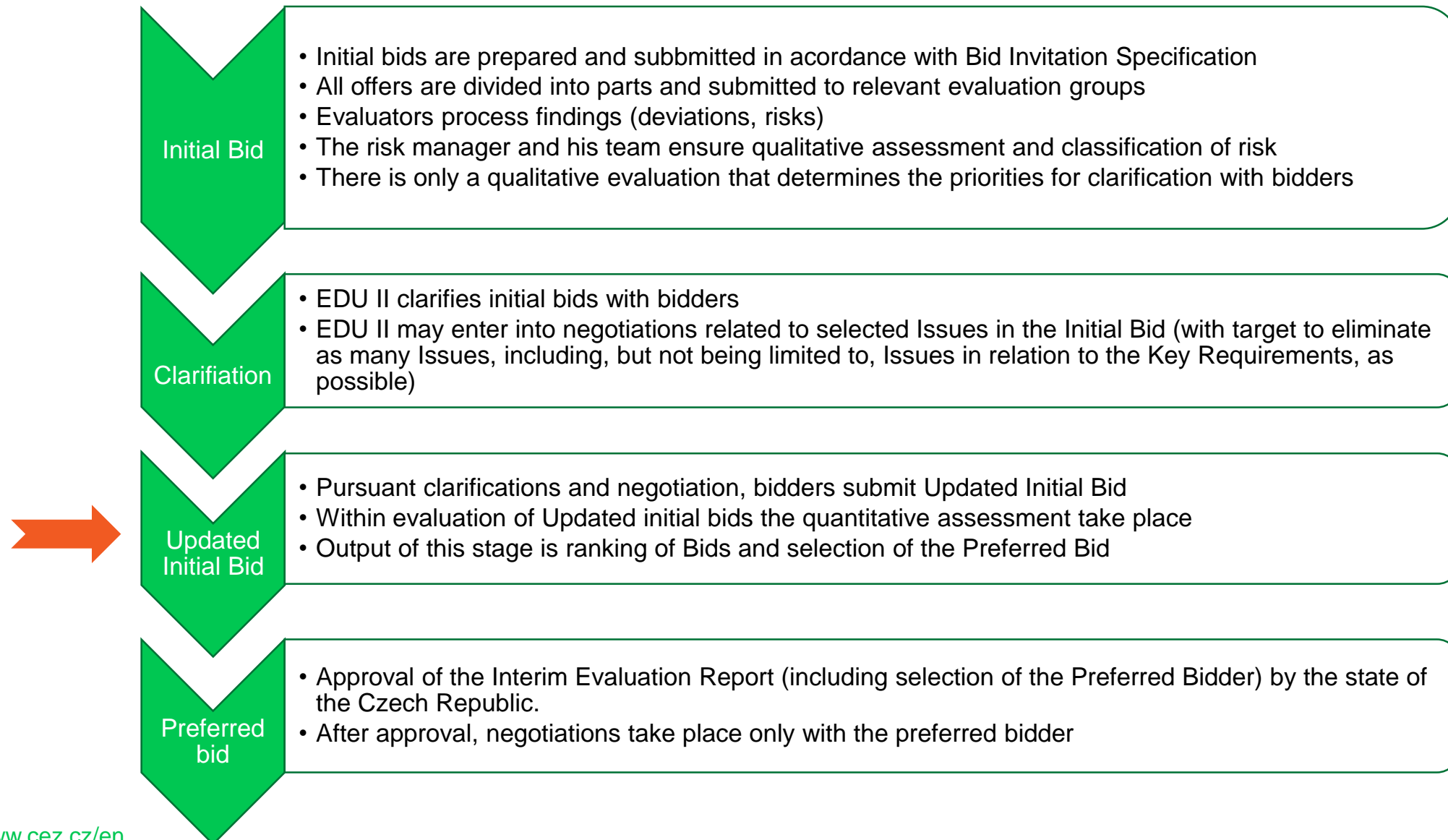
**A** Framework contract

**B** First implementation contract

**C** Power Purchase Agreement (PPA)  
Repayable Financial Assistance (RFA)  
Investor Agreement (IA)



# Dukovany II - Tender Schedule



# Licensing and Permitting



## Environmental Impact Assessment (EIA, according to law No. 100/2001 Coll.)

- The Ministry of Environment issued **the EIA statement** on environmental impact assessment of a project in August 2019. ([Link to EIA Documentation in English](#))

## Siting of the nuclear Facility

- The documentation for the siting of a nuclear installation including initial safety analysis report is publicly available on the ČEZ website: [www.cez.cz/njz](http://www.cez.cz/njz)
- The siting of a nuclear installation was issued by SÚJB on **March 8, 2021**, License has unlimited time validity with **3 conditions**.

## State Authorization (according to law No. 458/2000 Coll. Energetic Act).

- Assessed and issued by the ministry on **April 27, 2021**.

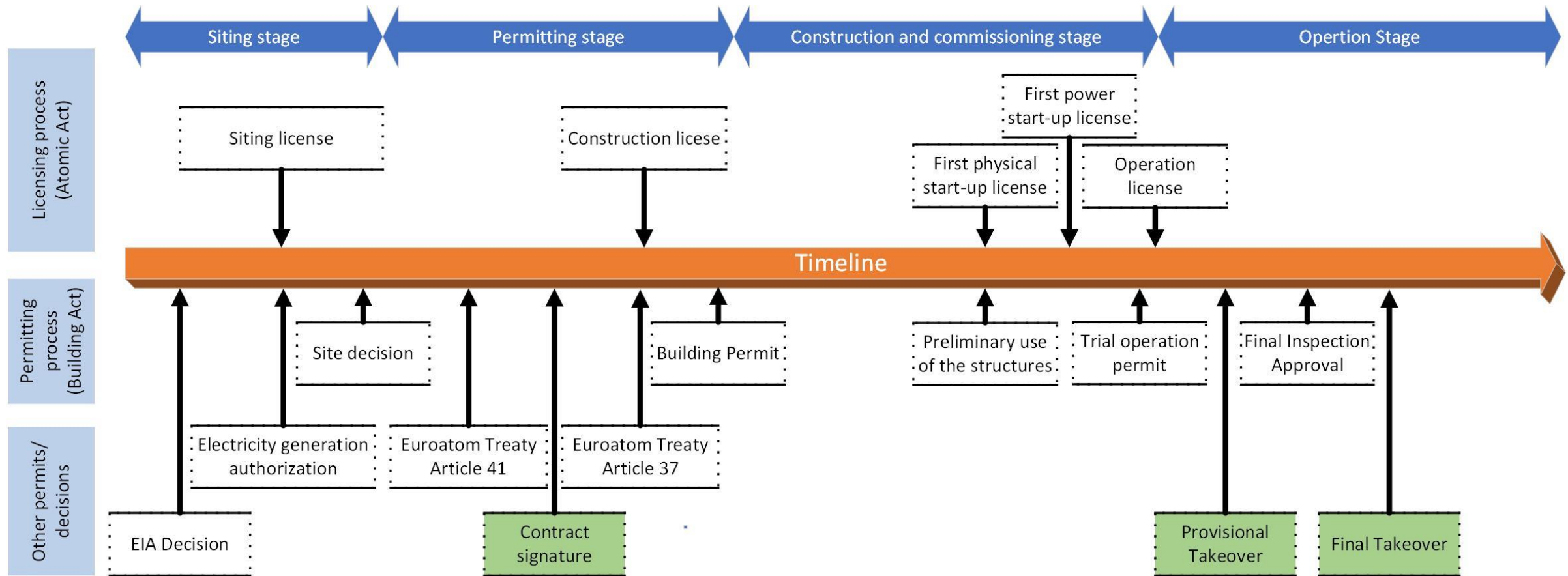
## Site decision proceeding (zoning procedure, according to the Building Act)

- Application for the site decisions according to the Building Act were submitted to the Building Authority on **June 1st, 2021**.
- **Site decision issued** by Ministry of Industry and Trade on October 30, 2023 (powerless/ineffective - expected appeal by NGO's etc.).

The permitting is done for the **siting of two nuclear facilities**, each with one pressurized water reactor with a rated thermal output of **up to 3500 MW<sub>t</sub>** and the corresponding net electrical output of **up to 1200 MW<sub>e</sub>**. (1200MW<sub>e</sub> during parallel operation with the existing units).



# Licensing process in the Czech Republic





# Agreements with State – in Preparation

## Key Principles Agreed

Key transaction elements which will govern the rights and obligations of the parties in relation to the Project and, if agreed by the parties, will replace the First Implementing Agreement and the Master Agreement concluded on 28 July 2020 among the State, ČEZ, a. s. (CEZ) and Elektrárna Dukovany II, a. s. (EDU II):

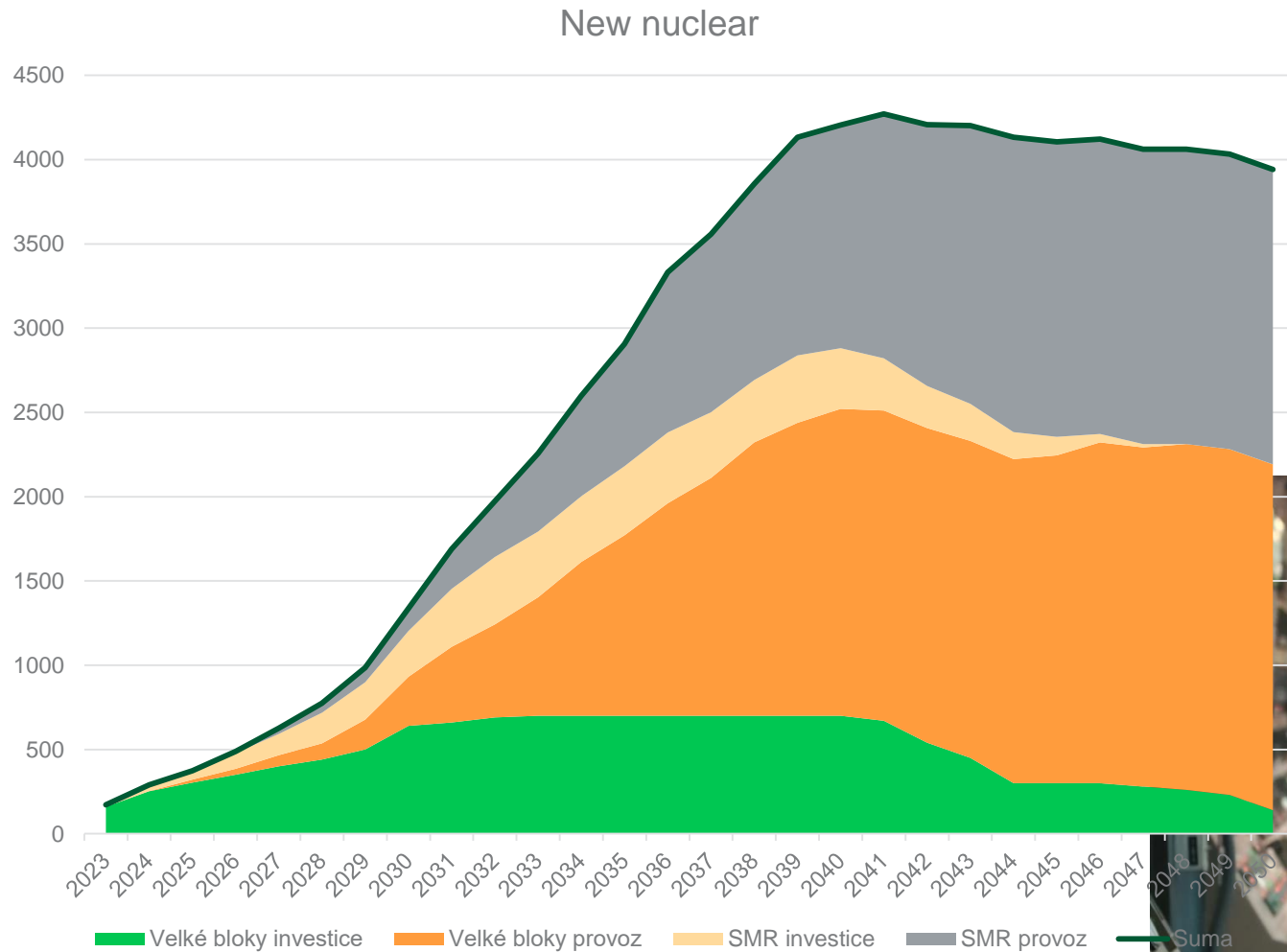
- A. Power purchase agreement (“**PPA**”) between the Czech Republic represented by the Ministry of Industry and Trade (the “**State**”) as offtaker and Dukovany II as supplier;
- B. Investor agreement (“**IA**”, “**Investor Agreement**”) among the State, CEZ and EDU II;
- C. Repayable financial assistance (“**RFA**”) granted by a decision of the Ministry of Industry and Trade to EDU II.

Notification of State Aid needed (European Commission):

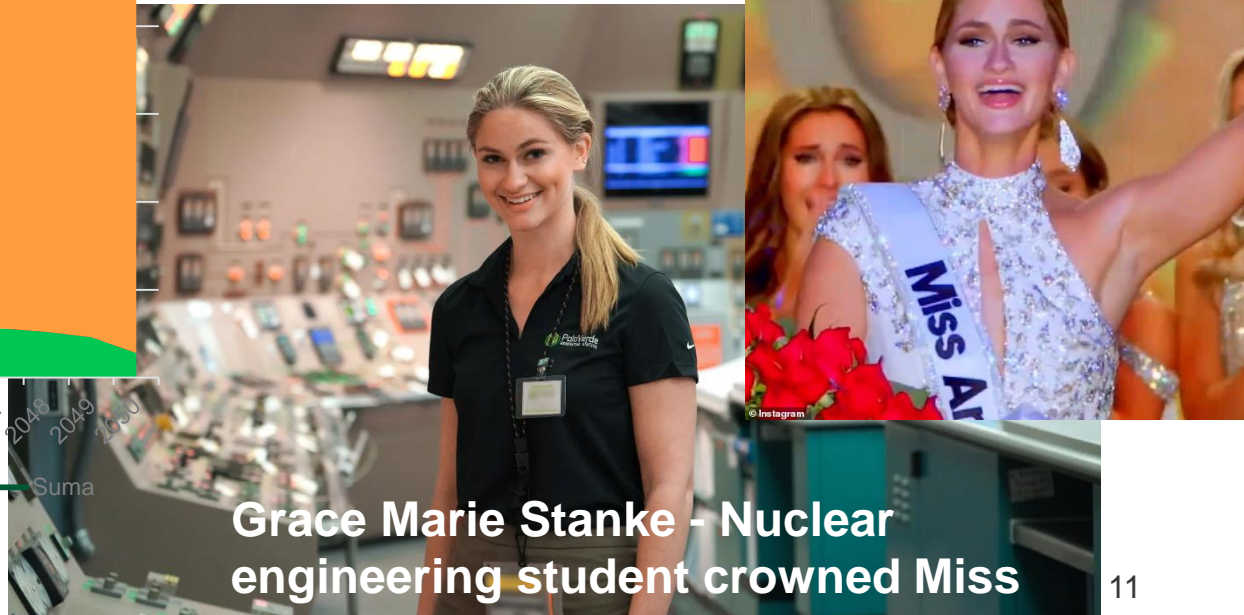
- Prenotification started in August 2020
- Notification started in June 2022

**The PPA, the Investor Agreement and the RFA will be signed/issued on or around the same date and none of them will enter into effect unless and until each of them are signed/issued.**

# Staffing



**EDU II:**  
**157 Employees**  
**95 % University degree**  
**27 % Women**



**Grace Marie Stanke - Nuclear engineering student crowned Miss**

# Summary



- The long-term **strategy of the energy sector** (and many other sectors) in the Czech Republic will need to be **adapted to the climate neutrality commitments** to which the Czech Republic has subscribed.
- Many sectors will only be able to **be decarbonized through increased electrification, so the need for emission-free electricity will grow in the long term.**
- Coal sources under regulatory and economic pressure (BAT, CO<sub>2</sub>) will gradually cease their activities, natural gas was planned only as a temporary solution that could partially compensate for the loss of coal capacity for a limited time. However, in the energy sector, it will have to be replaced by green hydrogen/methane.
- The chosen method of financing will affect the price of the electricity produced.
- **While Europe relies heavily on offshore, the Czech Republic, as a landlocked country, needs to develop nuclear and renewable energy projects.**

# Thank You for Your Attention

