

National Action Plan for Nuclear Energy

Measure to ensure long-term stability of electricity supply and to maintain our competitiveness

NE-RS (2015)

Wednesday 9:25 – 10:40, Kaiserštejn palace



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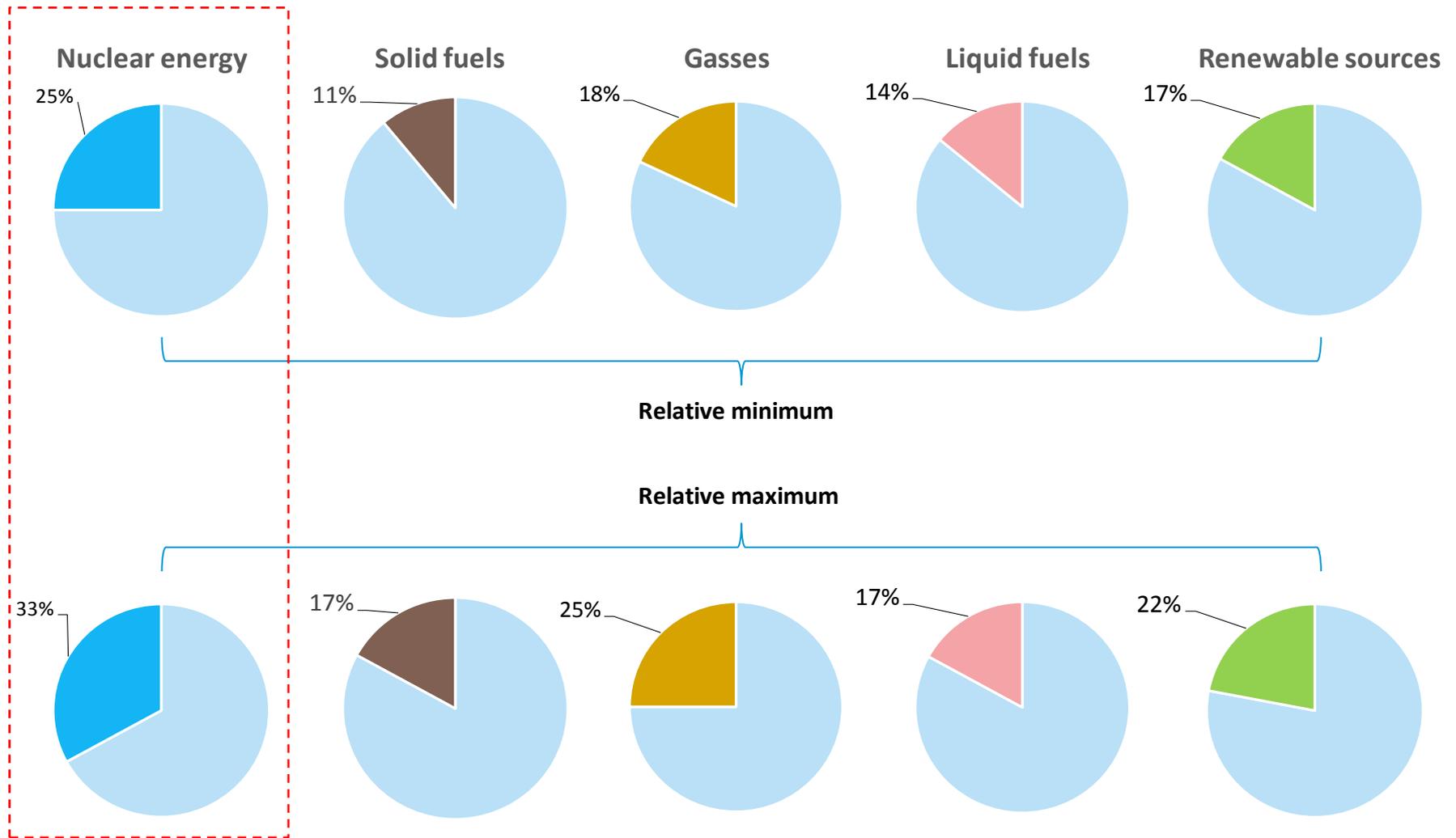


Nuclear energy in context of SEP

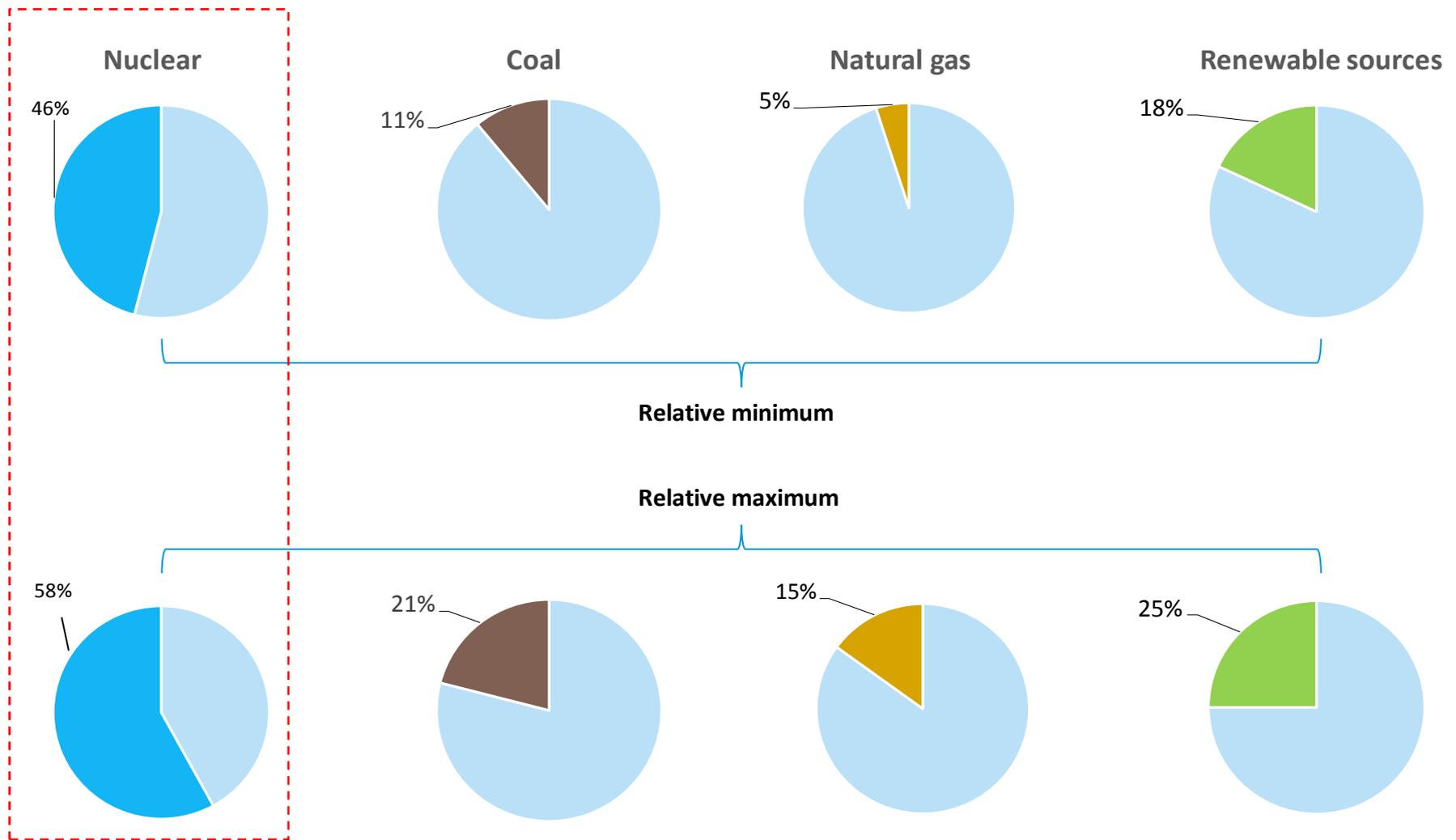
- ➔ **Strengthening the role of the nuclear energy in the energy mix of the Czech Republic**, compensation for decreasing production from thermal (coal) power plants => up to 50% share on gross electricity generation.
- ➔ **Promote and accelerate the process of negotiation, preparation and execution** of new nuclear units at existing locations **with a total capacity to 2,500 MW**, respectively, annual production of around 20 TWh in the period of 2030-2035.
- ➔ **Aim the start of operation around possible shutdown of JEDU NPP**, it means after 2035.
- ➔ Creating the conditions for extending the **operational period of JEDU NPP up to 50 (or 60) years**.
- ➔ **Ensuring the conditions for the establishment and operation of a secure and long-term repository of radioactive waste**; decide on nuclear repository location until 2025.
- ➔ **Identification and securing territorial protection for other suitable locations for potential NPPs**.



Strategic goal for primary energy sources



Strategic goal for power generation



Long term role of nuclear energy sector

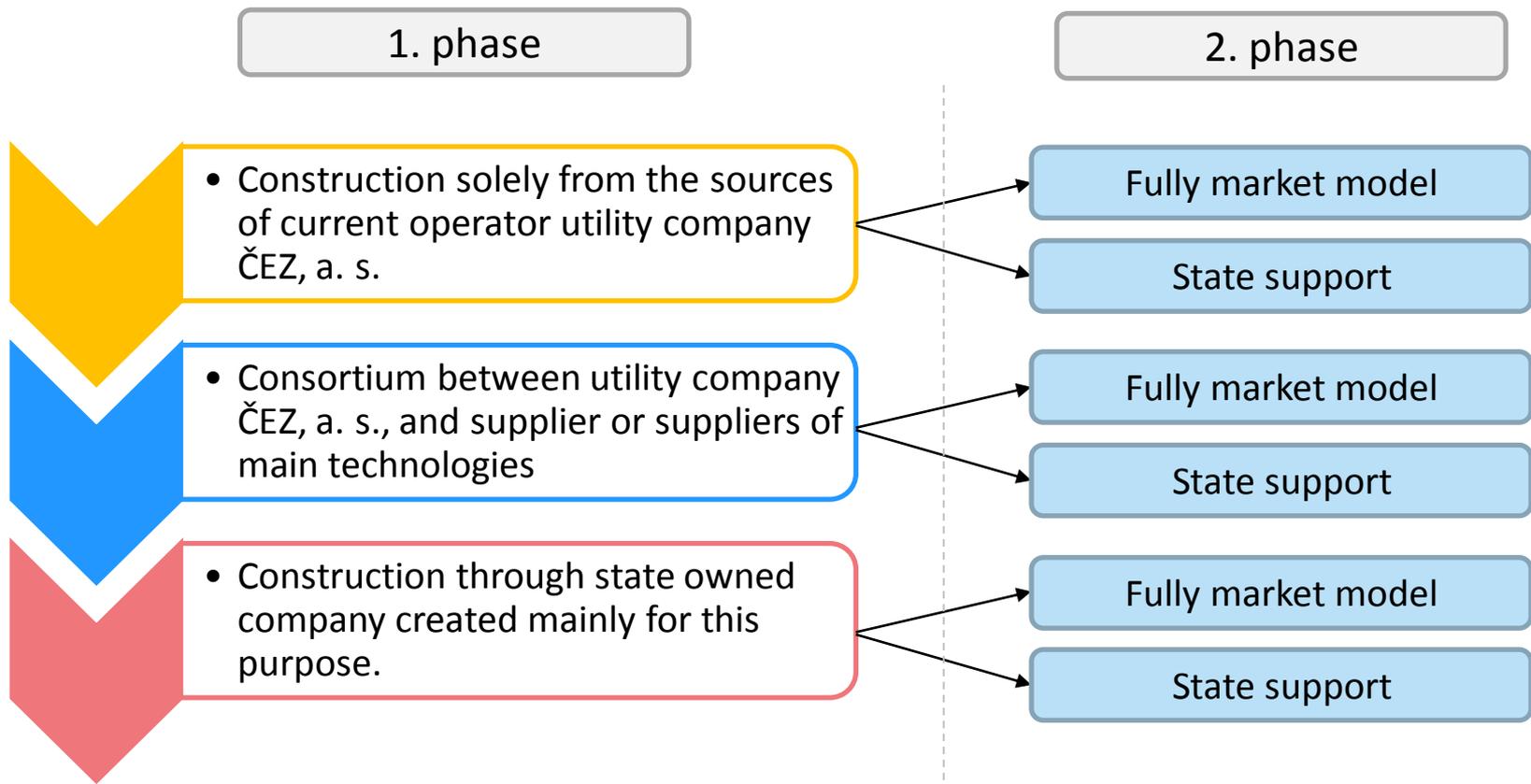
- ▶ **The transition to a low/zero carbon energy sector** in 2050 in the context of meeting the Czech international obligations.
 - ➔ *Communication of EU: 2050 – 80% - 95% emissions of GHG compare to 2005 (zero emission energy sector).*
- ▶ **Ensuring energy security** (ability of long-term electricity supply even in the absence of external supply sources).
 - ➔ *Creating reserves of uranium fuel for 4 or more years.*
- ▶ **Industrial production and export potential.**
 - ➔ *Nuclear energy industry and infrastructure – 15 000 people, 2 % GDP, potential to double this share.*
- ▶ **The knowledge base of the economy** (the leader of hi- tech industrial production, organizational and structural skills).
 - ➔ *High value added, with significant multiplication to other (material R&D, engineering etc.).*



The national action plan of nuclear energy

- ➔ NAP NE recognizes the immediate **necessity to start the preparation process** for construction of new nuclear units.
- ➔ **The priority is** to start the operation of new units **around the year 2037** in **location Dukovany** in order to sustain operation continuity and provide the replacement of decommissioned units of current NPP.
- ➔ NAP JE assumes the construction from **two to four new units** depending on installed capacity and future electricity consumption.
- ➔ **NAP JE recommend two stage approach** – in the first stage the preparation process with main goal to obtain construction permit should continue, in second stage, which is assumed around the year 2025, the construction itself should begin.
- ➔ Directly **before the second stage, there should be an evaluation**, if there is still the need for new capacities and evaluation of investment model.





Decide about preferred investment model (**government, 6/2016**).



Further analyze preferred model (**MPO a MF, 12/2016**).

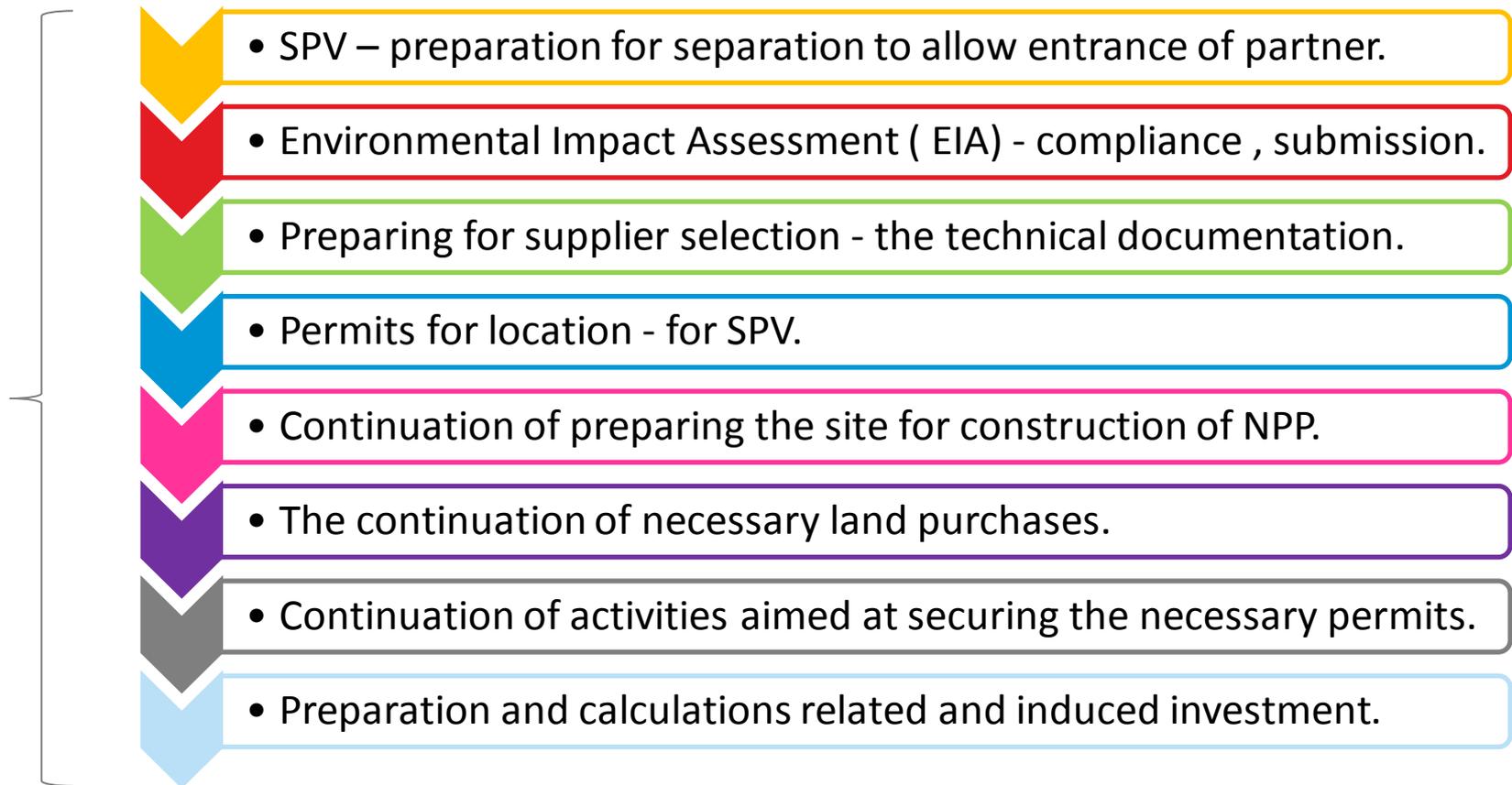
The final decision before issuing building permits (assumed around year 2025).

Recommended steps for construction

- The establishment of a special company(Special Purpose Vehicle).
- Prevent irreversible steps inside the CEZ group.
- Initiate contacts with strategic partners.
- Initiate negotiations with the European Commission.
- Immediate continuation of the project preparation.
- Initiate the preparation of legislative changes.
- Assessing the needs of state guarantees/support.



Recommended steps for construction



Security of nuclear fuel supply

Possible ways to further increase the security of nuclear fuel supply and its diversification.

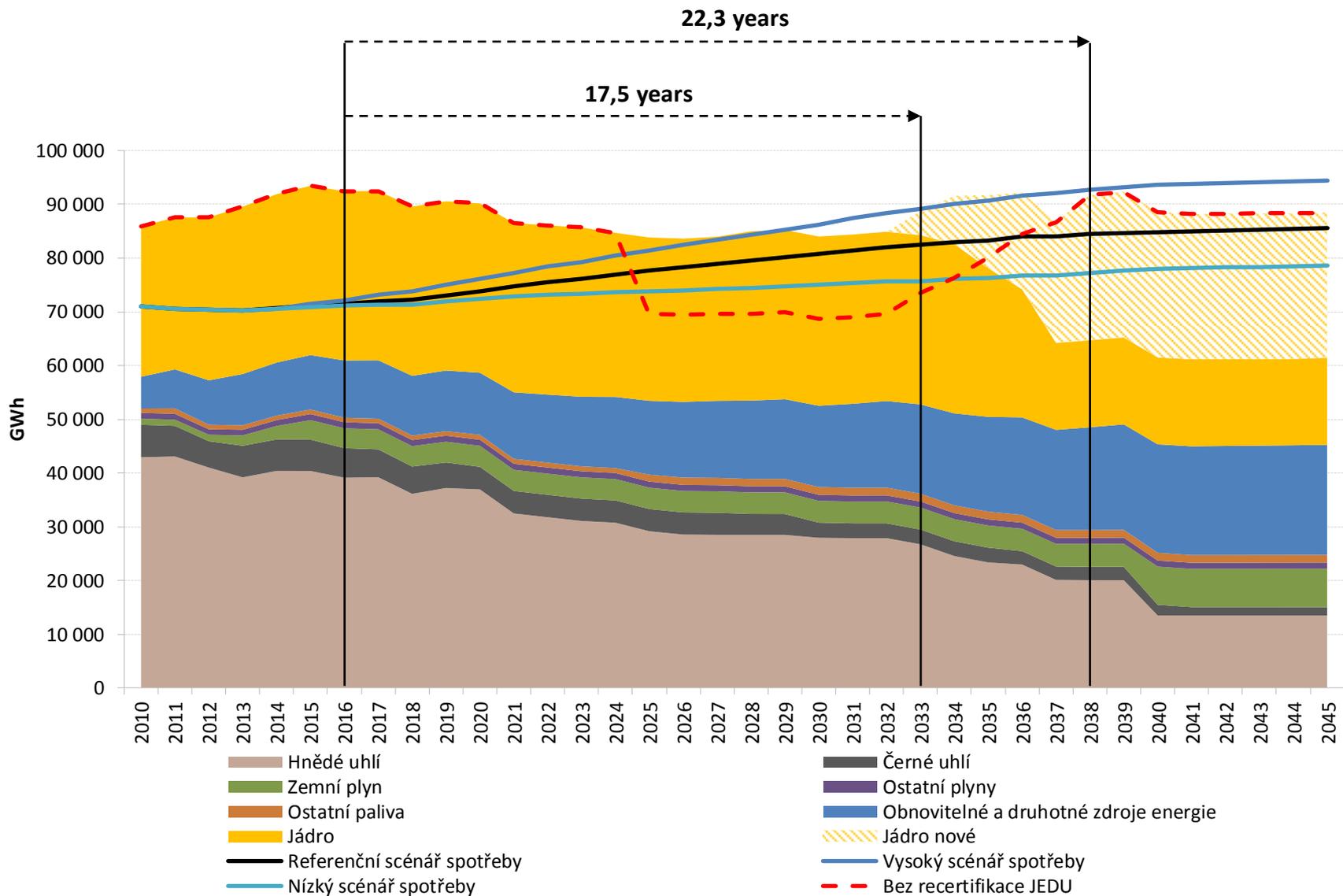
Four possible options identified in NAP NE:

- i. Reciprocal agreement of fuel supply between supplier and operator;
- ii. production capacity of nuclear fuel within the country or in close region;
- iii. additional reserves of nuclear fuel for domestic NPPs;
- iv. creation of reserve capacity for fuel components (for instance fuel rods).



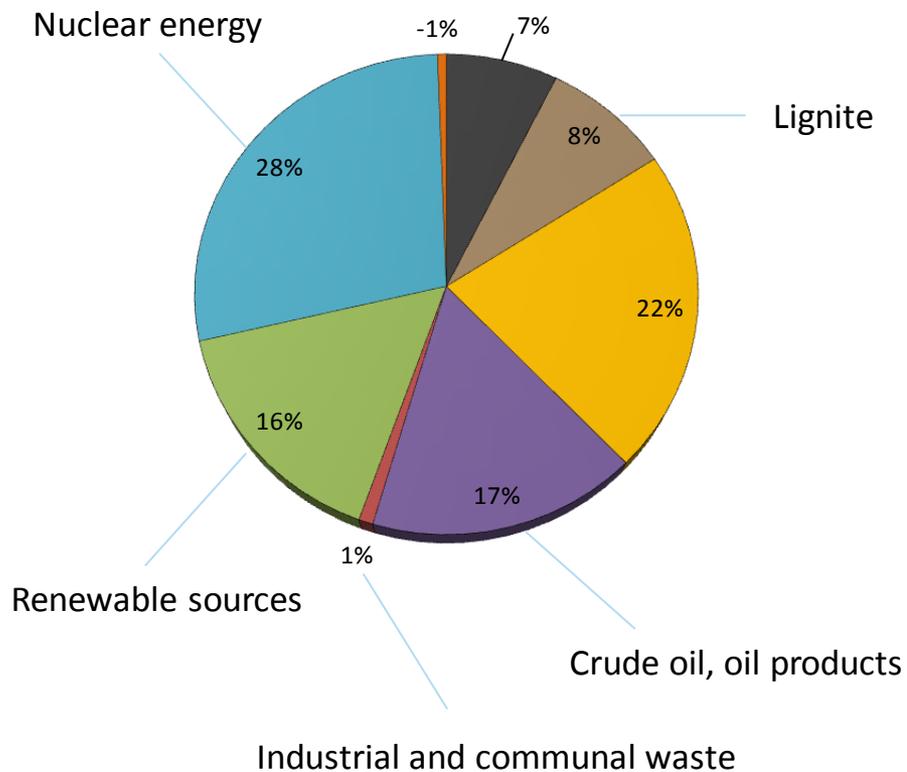
Construction milestones

Milestone	Years from T0	Possible Delay	Years from T0 with delays
EIA assessment report	5 let		5
Permits for location (SÚJB)	5,5		6,5
Supplier selection	6,5	+ 0 - 2 years (+ 0 years)	6,5
Legally effective territorial decision	8,5	+ 0,5-2 years (+0,8 years)	9,3
Permit for construction (SÚJB)	9,5	+ 1-2 years (+ 1,5 years)	11,8
Construction permit= initiation of construction	10,5	+ 1 year (+ 0,5 years)	13,3
Commissioning	17,5	+ 1-3 years (+ 2 years)	22,3

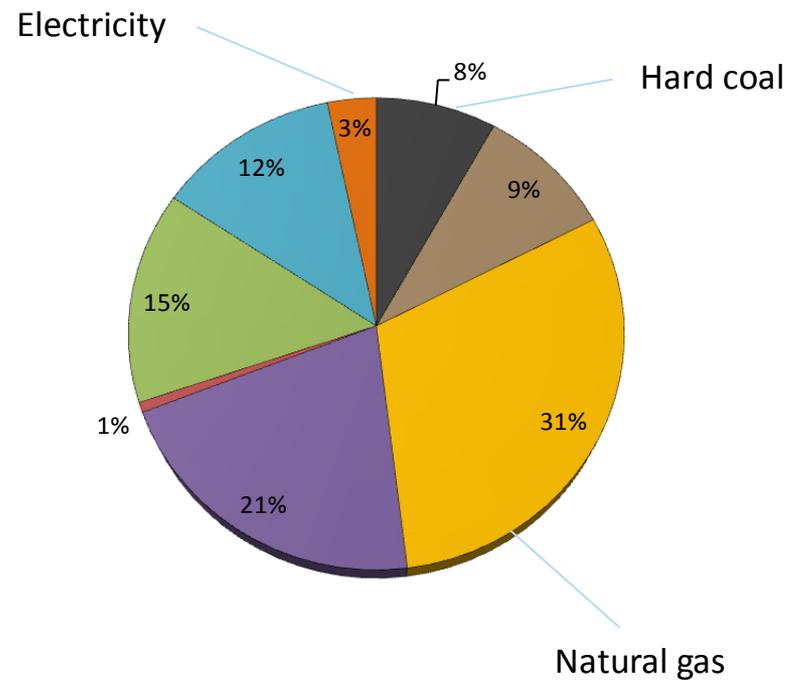


Primary energy sources

Optimized scenario

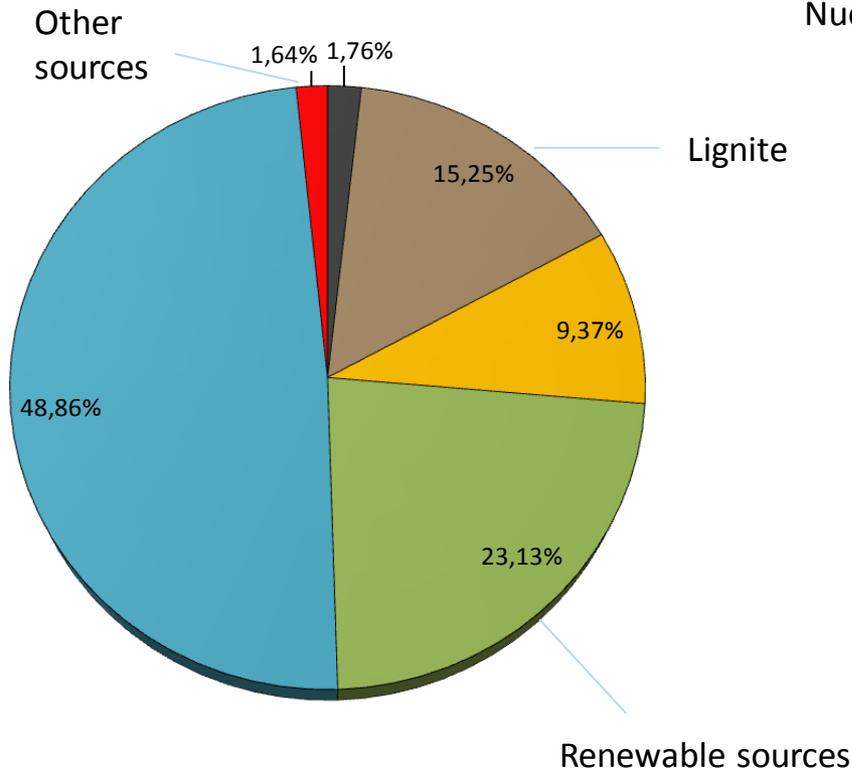


Natural gas scenario

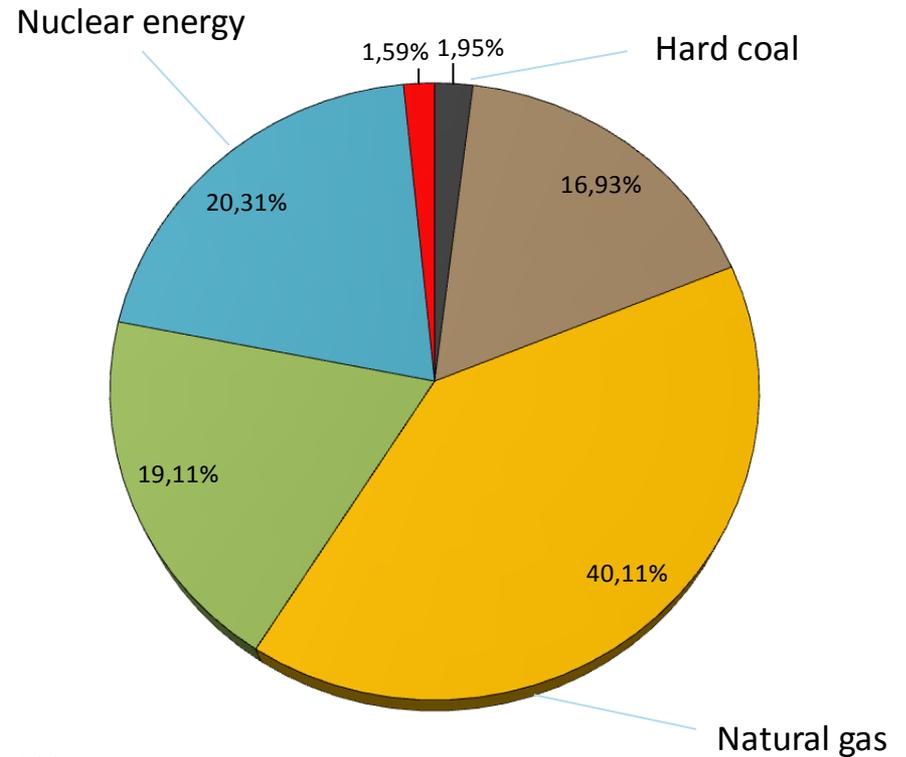


Gross electricity production

Optimized scenario

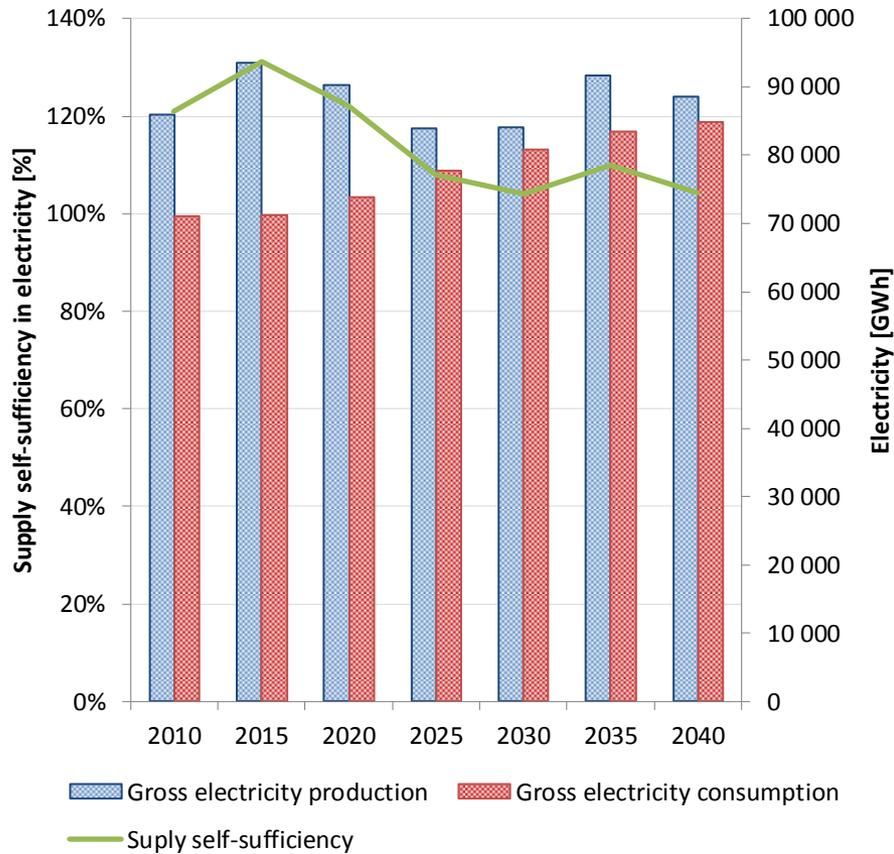


Natural gas scenario

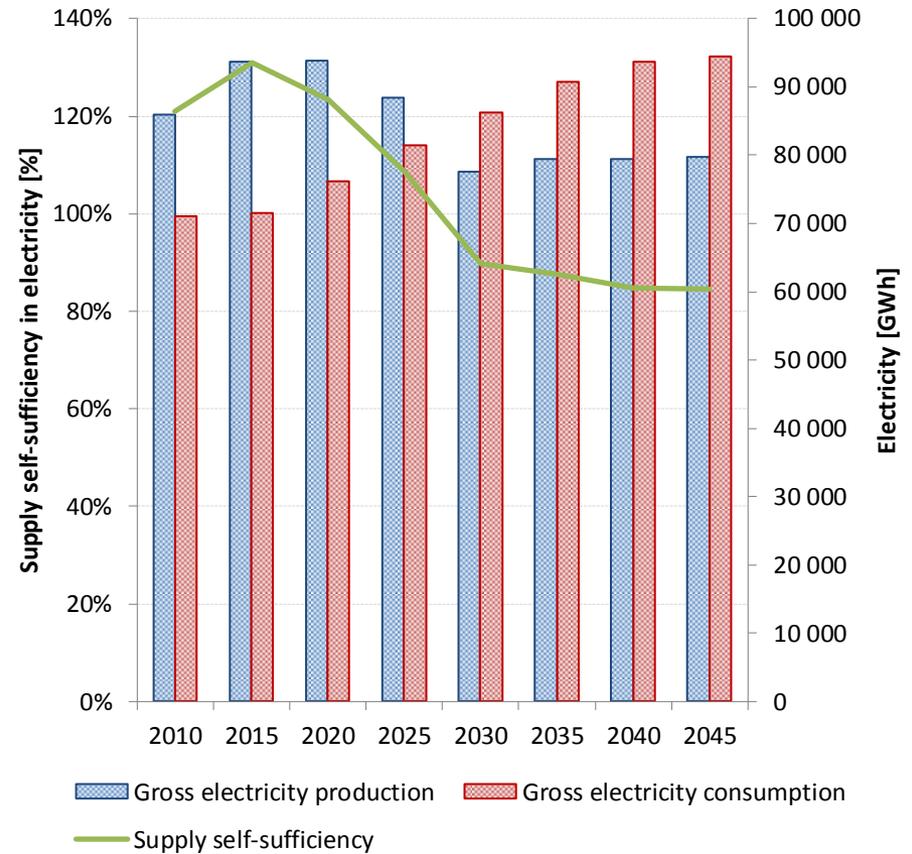


Self-sufficiency in electricity supplies

Optimized scenario

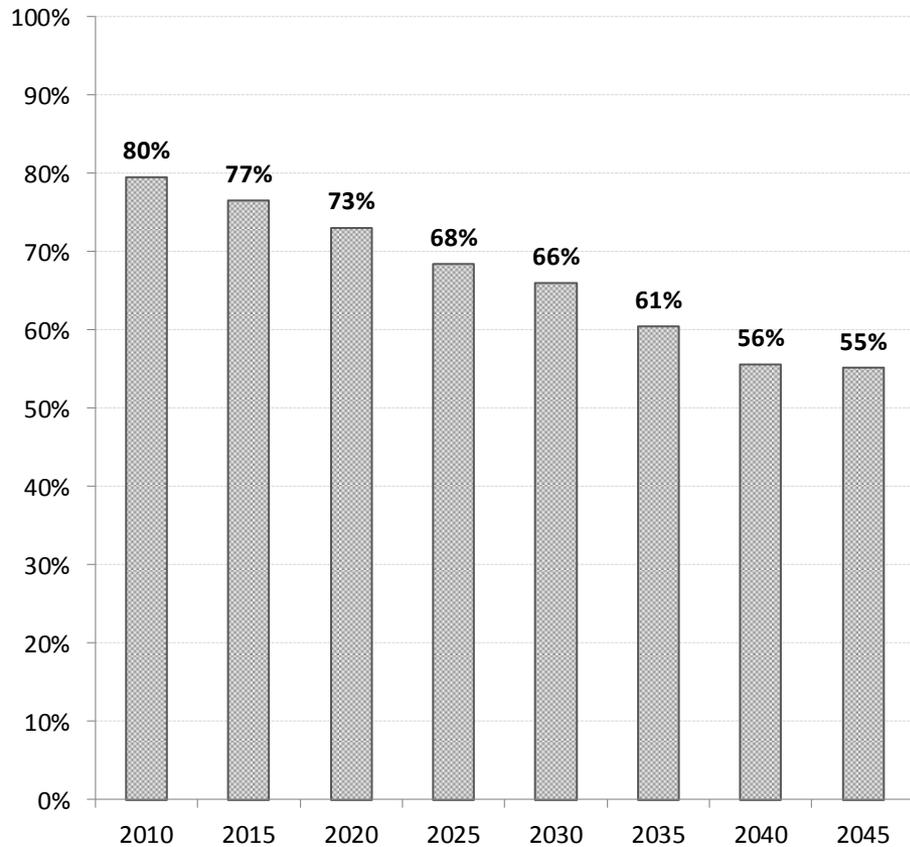


Natural gas scenario

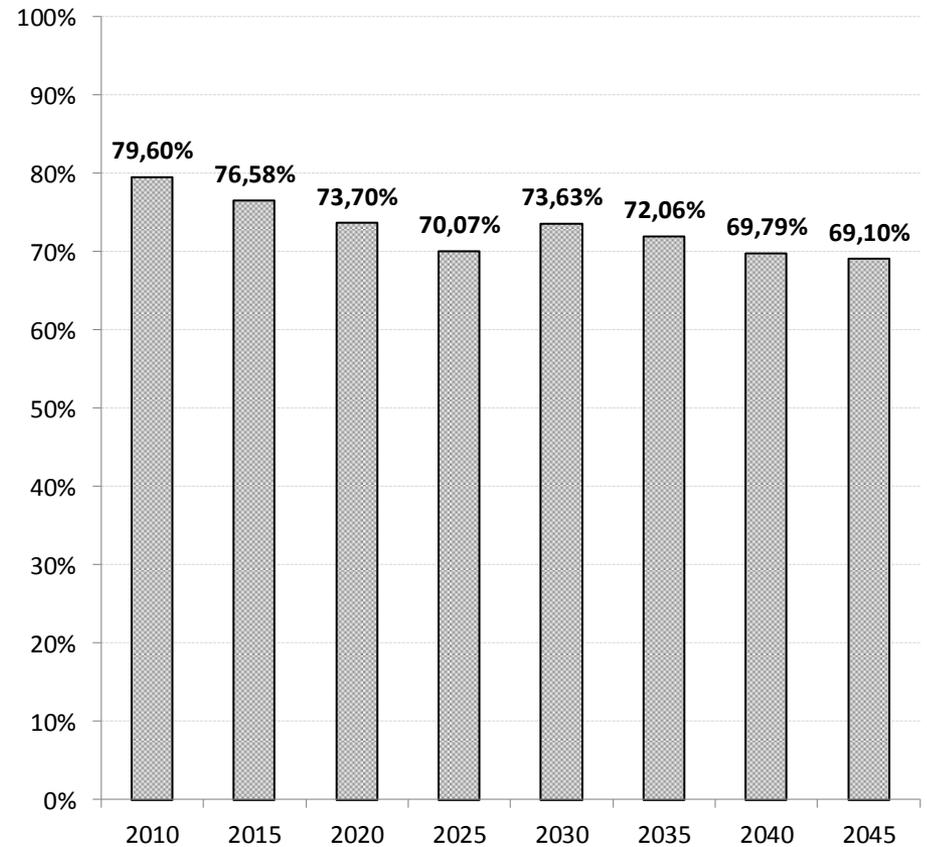


Fossil fuel dependency

Optimized scenario



Natural gas scenario



Thank you for you attention



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