Czech Nuclear Power Plant Dukovany 5 – a Costly Endeavour

This is a short overview of the financing model the Czech government came up with after years of preparations. During the Corona crisis the government put forward the framework contracts. According to plan the contracts between the government and the utility ČEZ were signed on 28 July 2020. Negotiations about the developed state aid mechanism were ongoing with the European Commission since last November and will be continued officially now starting in July 2020.

Structure of financing and building the new unit

One of the major issues for years had been the structure of financing and building the highly risky project of the new NPP Dukovany 5. ČEZ a.s. has one big shareholder with the state owning almost 70% of the shares. After the tender for selecting a manufacturer and general supplier for two units at the Temelín site failed in 2014, because the government refused to grant a guaranteed electricity price, ČEZ became even more reluctant to engage in this risky business. The question arose why the state would not invest if the state's interest in "safe and cheap" electricity is so high. Among the valid arguments put forward was the fact that the state tends to be a rather bad manager. Therefore, ČEZ was pressured even more and gave in under very favourable conditions, where the full risk will be on the state, i.e., the consumers.

The investor will now be the company Elektrárna Dukovany II, a. s., which is in 100% ownership of ČEZ. The first two contracts were agreed in April 2020 already and showed how ČEZ should be lured into the reactor adventure:

Guaranteed electricity price, a state loan and an option of purchase by the state mean zero risk for ČEZ.

The Ministry of Industry (MPO) prepared a Bill for the Transition to Low-emission Energy, which will guarantee that **the state will buy the power produced** in the new reactor in Dukovany for the first 30 years with the option of prolongation. The price will consist of the power generation costs and "adequate profit" for the utility ČEZ. This electricity will then be placed on the market by the Czech state. The difference between those two items will be covered by all electricity consumers, both households and companies, and if it exceeds a limit which is not specified today, taxpayers will have to chip in. When taking into account the above mentioned dynamics of NPP projects, this can turn out as the most expensive electricity. The Bill is only designed to support nuclear energy, no other energy.

The state will provide ČEZ with a **loan to cover 70%** of the planned investment costs. According to the approved government bill, the loan could be 6.6 billion euros. The total investment (overnight costs) should thus be 9.5 billion euros, which is much more than by Minister Havlíček claimed (5.4-6.1 billion euros). The loan should be interest-free during the construction, and then an interest of 2% should apply. The investment costs quoted do not reflect the actual situation with comparable projects such as Olkiluoto, Flamanville, Hinkley Point, Vogtle and Akkuyu. For a unit with a capacity of 1,200 MW, that means about 8.4 to 9.6 billion euros. For example, the **Flamanville reactor (EPR**) under construction in France is likely to cost 19.1 billion euros, said the French government audit in the beginning of July 2020. In its report, the Court of Auditors on the history and future of the 1,600 MW EPR stated that they estimate that the cost of electricity produced by the Flamanville EPR will be

situated between **110 and 120 euro per MWh** (megawatt hour). For those too young to remember: Flamanville's overnight costs were supposed to be 3.3 billion euros; construction started in 2007.

Electricity costs

The stated amount of the guaranteed purchase price of 50-60 euros per MWh, the expected electricity price is for the period after 2036, when the units should start operating. According to the calculations of economist Jan Ondřich, the amount of **the guaranteed price can reach 138 euros per MWh**. Then, of course, electricity consumers would have to pay about 20 billion a year in difference for at least 30 years.

Framework agreements

The Czech state signed a framework agreement with ČEZ which will cover the framework of the project from the announcement of the tender to the start of operation of the new nuclear power plant.

The agreement defines four basic stages in the preparation and construction of the new plant. The first stage covers the tender process, the selection of the technology supplier, zoning permission and site permit. This part of the framework agreement is detailed in a "first implementation contract".

No risk for ČEZ

While ČEZ and the government proxy for nuclear power, Mr. Míl, a former ČEZ director general, likes to point out that the state would not be a good constructor, ČEZ will have the right to hand over the project to the state – the expenses made will be paid back to ČEZ. This put option may occur at certain defined milestones, if necessary permits are not issued or if the state changes the regulatory conditions, for example laws, to the disadvantage of the Dukovany 5 project.

Construction time

Construction should start in 2029 and be completed in mere 7 years. This is extremely optimistic and has not been achieved even in China as a rule. Each delay severely increases the costs (see Flamanville or Olkiluoto). In the Dukovany construction project, the full cost escalation will have to be covered by the taxpayers/consumers.

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More information on the Joint Project – Nuclear Risk & Public Control: http://www.joint-project.org/

The Joint Project is supported by

Federal Ministry
Republic of Austria
Climate Action, Environment,
Energy, Mobility,
Innovation and Technology