Nuclear Waste Governance in the Czech Republic

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Chamber of Renewable Energies, Czech Republic

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1) Present intermediate storage for high-level radioactive waste

**DUKOVANY intermediate storage facility**

- before 1989: Dukovany - Jaslovske Bohunice (SK) Soviet Union,

- since 1995: dry storage facility 600 tons / 60 Castor 440/84 containers (GNS Nukem DE) full by 2005,

- since 2005: storage facility for 1,330 tons – covers planned Dukovany NPP operation time.
1) Present intermediate storage for high-level radioactive waste

**TEMELIN intermediate storage facility**

- storage facility for 1,370 tons / Castor 1000/19,
- built by unknown CEEI with in-transparent ownership / costs 60 mil. € while similar Isar facility costs were 32 mil. € acc. to EoN,
2) Waste storage concept by 2065

- planning since mid 1980s, first design in 1999,
- approved by the government 2002, upgraded design 2012,
- 500 m deep / stable geological formation,
- 2 most appropriate sites to be identified by 2015 !,
- planned construction 2050 – 2065.
3) Costs and financing

- est. costs of construction and operation (reference design base option) = 3,85 bn. €,

- CEZ obliged to contribute 2 €/MWh (50 CZK) to nuclear account,

- deposit: 0,52 bn. € in 2009 + cca 0,056 bn. /year,

- expected life time: Dukovany till 2027 + Temelin till 2055 = + 1,84 bn. €

- =nuclear account deposit by 2055 = 2,36 bn. € < est. costs = 3,85 bn. € ! + 0,81 bn. € decommissioning costs (2008 prices) = 2,3 bn. € deficit
4) Legal framework

Insufficient position of municipalities and land owners

- no obligation for Ministry for Regional Development to cooperate with municipalities on Spatial Development Policy: (with regional authorities only),

- no right for the municipalities to influence the performance of geological works,

- organisation providing geological works obliged to have a written agreement with the land owner before the work, but if no agreement, regional authority shall decide ..., 

- 2011 Atomic Act amendment – compensation = 22,000 € + 0,01 €/m², max. 145,000 €.
5) Sitting procedures

1990–1993  27 sites recommended (Czech Geological Inst.),
1990-1998  13 most promising areas (Nuclear Research Inst.)
2002-2003  11 sites (Regional Waste Repository Administr.)
2003-2005  6 sites (dto.)
2005-2009  further works put on hold till the end of 2009
5) Information, participation and civic society

<table>
<thead>
<tr>
<th>No.</th>
<th>Municipality</th>
<th>Year</th>
<th>Participation in referendum</th>
<th>Agree with repository location</th>
<th>Disagree with repository location</th>
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</table>

Source: Calla (2009) and Bursik (2013)
5) Information, participation and civic society

- exploration works terminated for five years till 2009,

- 01/2007 Government’s Program “Further steps in searching for the deep repository for spent nuclear fuel will be taken in transparent manner, consent of affected municipalities will be an inviolable criterion” (Greens),

- “Working group for dialogue on the deep repository involving representatives of municipalities” (2010). Group proposed an amendment = disagreement of the municipality could only be overcome by Senate resolution,

- Working group disbanded by 2013,

- initiative of 131 mayors “Be fair about the deep repository” – proclamation towards the Government,
6) EURATOM directive implementation

- Dir. 2011/70/Euratom implementation should be reported by 23 August 2015 to the Commission,

- “National spent fuel and radioactive waste handling program should be developed,

- Should have been presented to the Government by June, 2014 – no information available yet,

- the policy should include EIA /Strategic Environmental Impact Assessment) – no information available yet.
7) Nuclear industry perspective

- NPP tender was stopped:
  - April, 10, 2014 CEZ decided to stop its tender for new nuclear reactors at Temelin or/and Dukovany,
  - official reason: non stability od the European energy sector,
  - true reason / economics of NUX – CEZ decision taken one day after the government refused to guarantee a fix-price,
  - photovoltaic tunnel caused by late FIT regulation in 2010 paradoxically has helped to stop Temelin NPP2 plans
7) Nuclear industry perspective

- July 2011 – financial director of ČEZ Novák said “I have to smile to those saying ČEZ will not have money for new NPP Temelin ... ČEZ will generate such a cash flow between construction start 2015-16 and grid connection 2020, that these money will be sufficient”,

- February 2012 – strategy director of ČEZ Cyrani said “It is in fact impossible to built a nuclear power plant referring to electricity market price only ... we have been asking the state to provide a guaranteed nuclear electricity price otherwise we will not sign a contract for NPP Temelin expansion”. 
Government took note of the final report of the government envoy for the expansion of NPP Temelin (6 August, 2014)

- “I visited all construction sites, Olkiluoto 3, Flamanville 3 and Taishan 1+2 (Areva), Leningraskaya II/1+2 and Novovoronyezhkaya II/1+2 (Rosatom), Sanmen 1+2, Haiyang 1+2, Vogtle 3+4 and Summer 2+3 (Westinghouse) … “there are things that no firm ever describes in presentations, but that cannot be hidden during a detailed excursion”. I have not seen any construction that did not have multi-year delay.”

- “the weaknesses of the entire sector are evident … lack of basic blue-collar workers, specialised welders and installation workers for valves and fittings, higher experts - project managers, largest shortage experts that prepare start-up and connection to the grid.”
7) Nuclear industry perspective

- “We have a delay of around three years,” the project manager of Leningradskaya 2 told me during my first visit. “How much more expenses will the project be?” I asked. “Nothing. It will cost exactly the same,” he answered.

Do we have it?

- “I have now worked seven years for the government. I have seen five prime ministers. Show me a big, functioning firm that would have five bosses in seven years: that does not exist.”
Who will pay the repository site and additional costs of nuclear electricity out of new NPP?

The consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years, the consumers – for the period of 40 years.
martin.bursik@me.com
Thank you for your attention.