



Czech  
Renewable Energy  
Chamber

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# Nuclear Waste Governance in the Czech Republic

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19<sup>th</sup> REFORM Group Meeting, Salzburg, September 1, 2014



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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

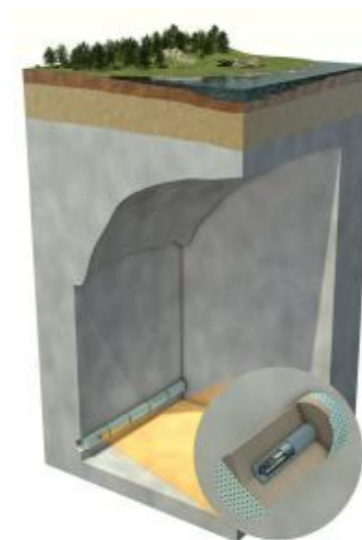
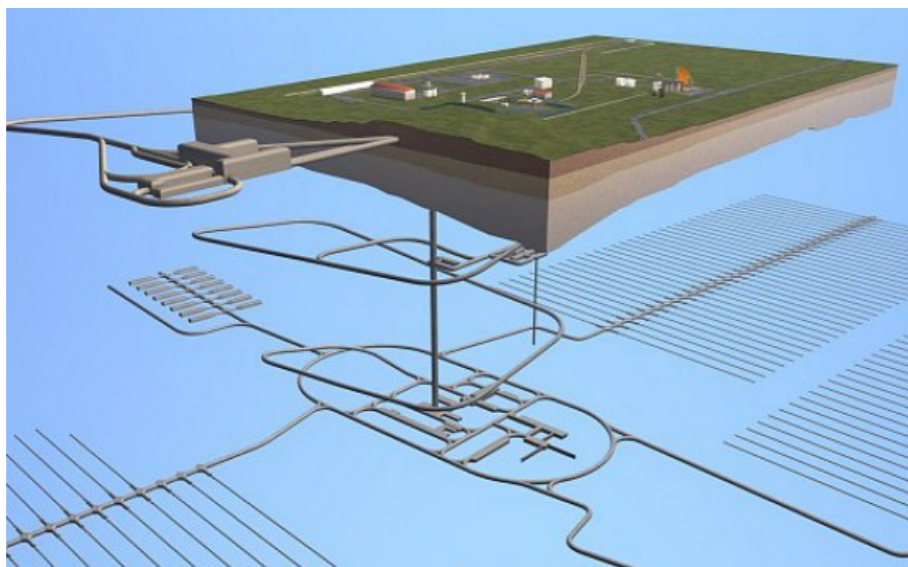
### **TEMELIN intermediate storage facility**

- 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 €/m<sup>2</sup>, max. 145,000 €.



## 5) Sitting procedures

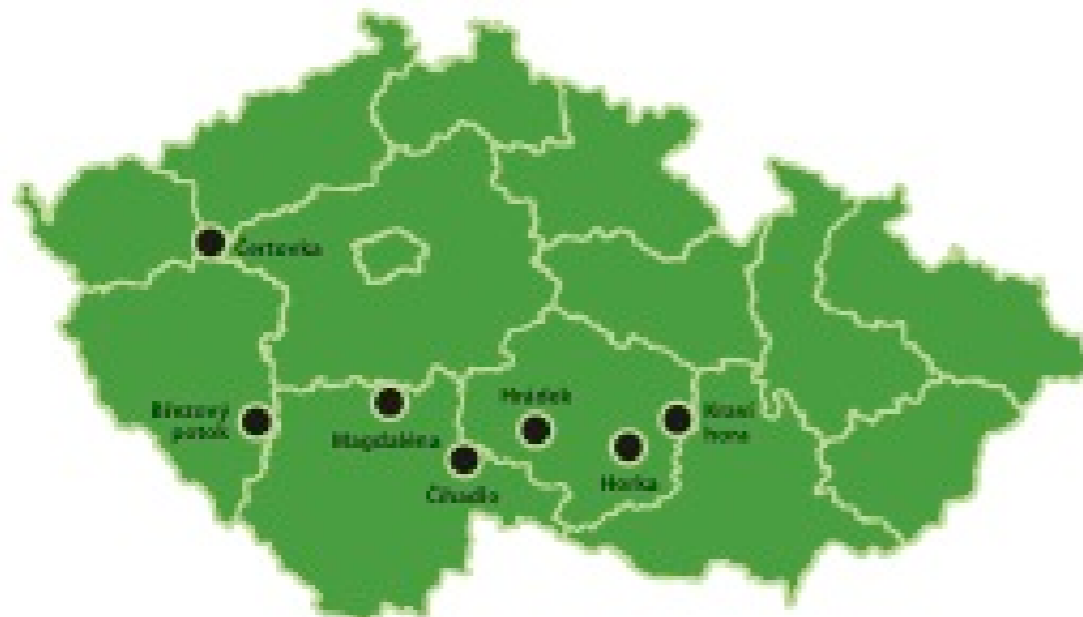
1990–1993 27 sites recommended (Czech Geological Inst.),

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

No.	Municipality	year	Participation in referendum	Agree with repository location	Disagree with repository location
1	Oslavička	2003	80.0%	1.5%	<b>98.5%</b>
2	Nadějkov	2003	67.5%	2.8%	<b>95.7%</b>
3	Přeštěnice	2003	76.4%	0.6%	<b>99.4%</b>
4	Božetice	2003	73.0%	2.8%	<b>95.7%</b>
5	Hodkov	2004	72.5%	4.0%	<b>96.0%</b>
6	Rudíkov	2004	71.9%	4.0%	<b>95.7%</b>
7	Budišov	2004	51.1%	12.1%	<b>81.8%</b>
8	Nárameč	2004	71.7%	5.2%	<b>93.4%</b>
9	Lodhéřov	2004	84.0%	0.6%	<b>99.4%</b>
10	Deštná	2004	63.4%	1.8%	<b>93.1%</b>
11	Zhoř	2004	69.1%	0.0%	<b>99.3%</b>
12	Jistebnice	2004	51.2%	1.8%	<b>93.7%</b>
13	Pačejov	2004	80.8%	1.7%	<b>95.5%</b>
14	Maňovice	2004	89.5%	0.0%	<b>97.1%</b>
15	Olšany	2004	95.1%	0.0%	<b>99.4%</b>
16	Rohy	2004	65.2%	9.6%	<b>89.0%</b>
17	Hojkov	2007	92.4%	0.0%	<b>98.3%</b>
18	Opatov	2007	67.5%	2.8%	<b>95.4%</b>
19	Dušejov	2007	65.3%	3.7%	<b>95.8%</b>
20	Jedlov	2007	68.7%	1.9%	<b>98.1%</b>
21	Milíčov	2007	86.4%	1.1%	<b>95.5%</b>
22	Dvorce	2007	73.3%	4.5%	<b>95.5%</b>
23	Hubenov	2007	82.6%	1.1%	<b>98.9%</b>
24	Cejle	2008	72.6%	15.1%	<b>79.4%</b>
25	Rohozná	2009	75.0%	2.6%	<b>96.6%</b>
26	Okrouhlá Radouň	2009	59.5%	5.7%	<b>93.2%</b>
27	Lubenec	2012	53.4%	17.2%	<b>79.7%</b>
28	Bukov	2013	87.9%	42.7%	<b>51.9%</b>



## 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 of 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



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## 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”.



## 7) Nuclear industry perspective

- ☑ 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.”







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Thank you for your attention.