

Special Report 22/2016:

EU nuclear decommissioning assistance programmes in Lithuania, Bulgaria and Slovakia: some progress made since 2011, but critical challenges ahead



EUROPEAN
COURT
OF AUDITORS

Phil Wynn Owen, ECA Member

Exploratory seminar: Decommissioning, a new challenge for nuclear safety

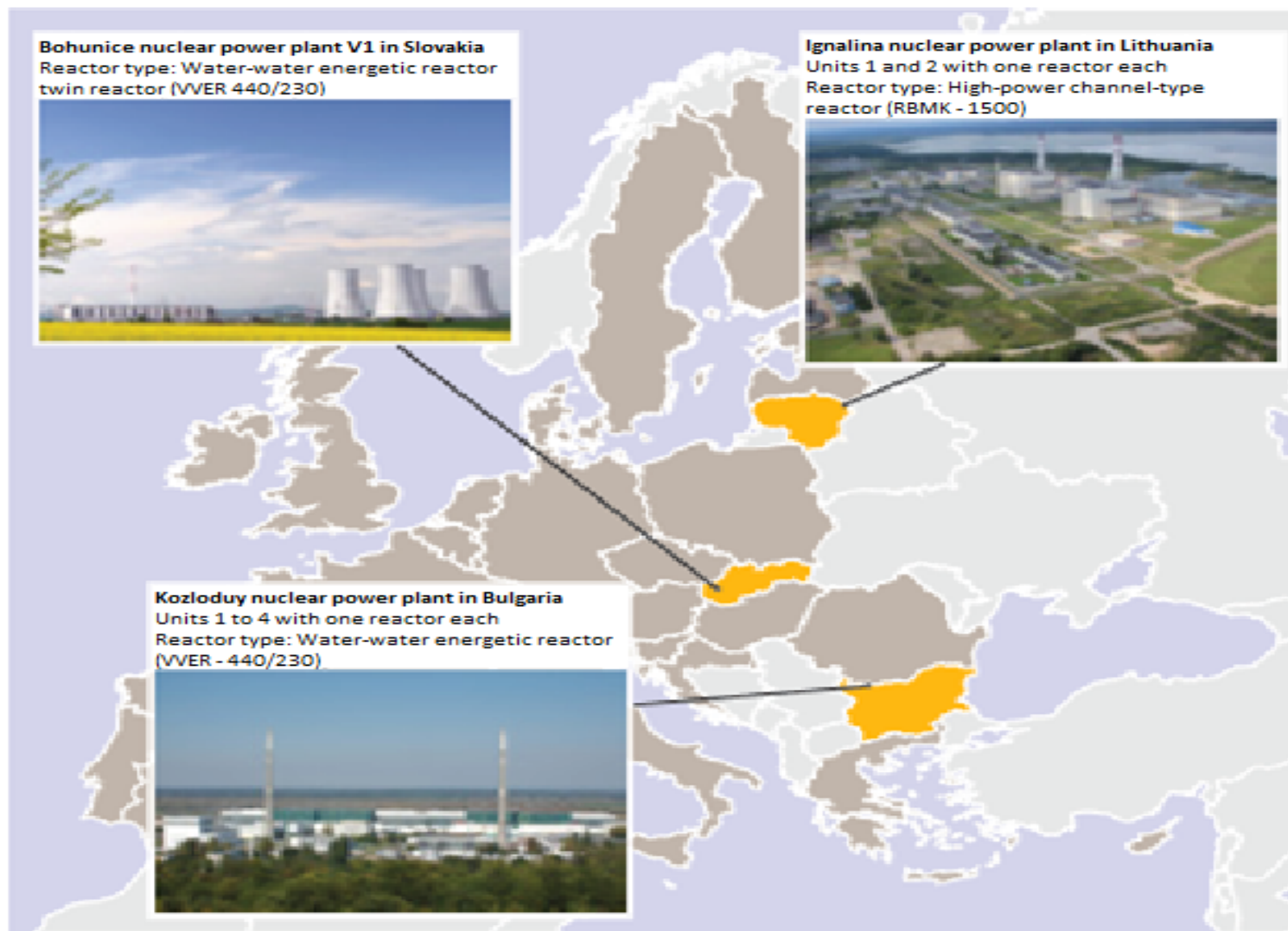
European Parliament, Brussels, 6 February 2017

Context

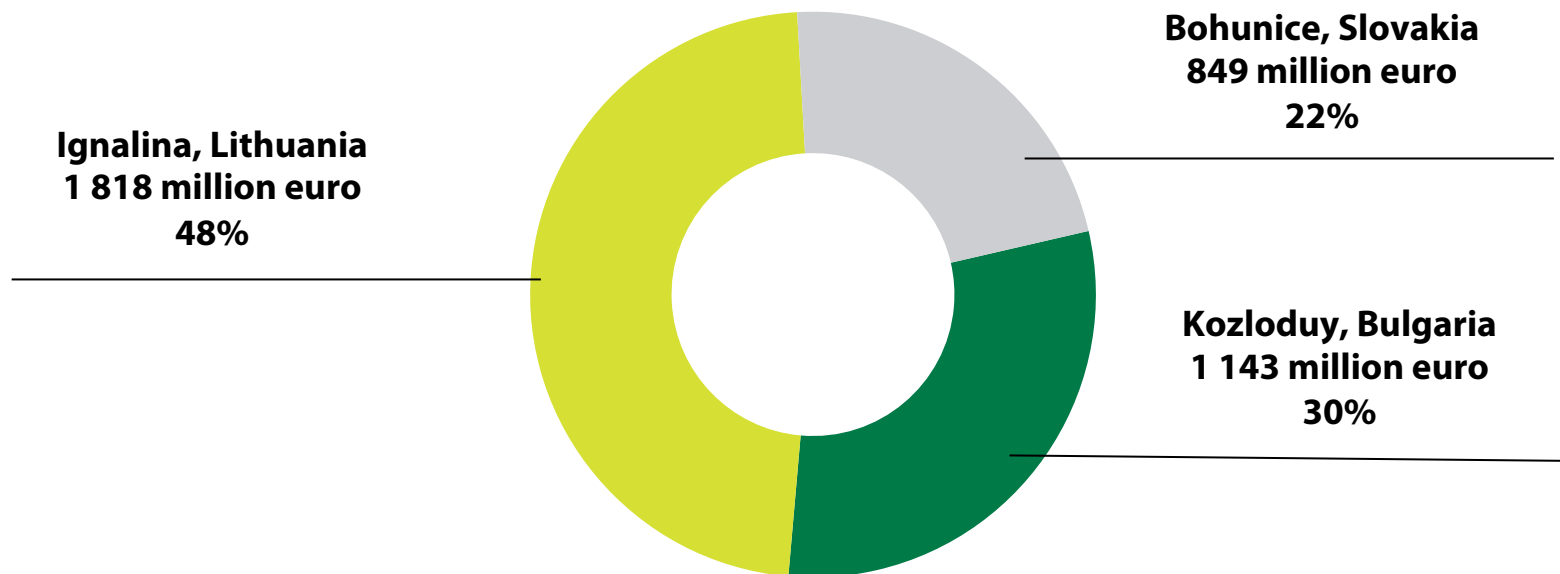
1. The Audit
2. Findings
3. Recommendations

1. The Audit

Sites in Lithuania, Bulgaria, Slovakia covered by the EU's NDAPs



EU decommissioning support – 2.96 billion euro by 2020



(million euro)	Decommissioning	Mitigation	Total
Lithuania	1 553	265	1 818
Bulgaria	731	412	1 143
Slovakia	671	178	849
Total	2 955	845	3 800

Main audit question

... to determine whether **progress has been made** in the implementation of the **EU's nuclear decommissioning** assistance programmes for **Lithuania, Bulgaria and Slovakia** since 2011

1

¹ECA report 16/11: "EU financial assistance for the decommissioning of nuclear plants in Bulgaria, Lithuania and Slovakia: achievements and future challenges"



Our audit.....

❑ did not cover

- compliance of project expenditure with fund-specific rules
- public procurement procedures
- radioactive security or safety of installations

❑ in no way sought to

- make a case for or against nuclear energy
- draw conclusions on the energy supply mix in the EU

Approach

- ❑ **visited sites** in Lithuania, Bulgaria and Slovakia
- ❑ **interviewed**
 - Member State officials
 - nuclear plant operators and waste management license holders
 - regulatory authorities
 - European Commission officials
 - Implementing body officials, including from EBRD
- ❑ assessed progress of **17 EU-funded key decommissioning projects**, including data on delays and cost overruns
- ❑ identified emerging **practice improvements and forward thinking**
- ❑ visited **world's first civil nuclear waste geological repository**, Finland

2. Findings

Findings: Progress since 2011

- ❑ **Some progress** made in decommissioning since 2011
 - key components dismantled in the plants' **non-controlled areas**
- ❑ **But critical challenges** lie ahead for all three Member States e.g. dismantling the **reactors**
- ❑ **Commission's "expected outputs" for irreversible closure** not all met
- ❑ Dedicated EU funding programmes have **not created the right incentives**

Expected outputs indicating irreversible closure

Expected output	Ignalina, Lithuania	Kozloduy, Bulgaria	Bohunice, Slovakia
NPP safely maintained in post-shutdown mode until complete de-fuelling	Partially achieved	Achieved	Achieved
Decommissioning licence is in place	Not achieved	Partially achieved	Achieved
Design for dismantling of reactor core/primary circuit is complete	Partially achieved	Partially achieved	Partially achieved
Dismantling in the reactor building has started	Partially achieved	Partially achieved	Partially achieved

As at 31 December 2015. For more details, see Table 3 on page 27 of the report

Findings: Waste Management

- ❑ **Waste management infrastructure:** some progress, but:
 - many key infrastructure **projects experienced delays** in 2011 to 2015
 - longest delays in Lithuania, where the decommissioning end date has, since 2011, been postponed by a further 9 years to 2038.
 - **challenges with major projects** in each Member State e.g.:
 - Lithuania – Interim storage for spent fuel assemblies
 - Bulgaria – National disposal facility for low/ intermediate-level waste
 - Slovakia – Decontamination of the primary circuit

- ❑ Work on potential **final disposal solutions for high-level waste and spent nuclear fuel** still only at conceptual stages

Findings: 2015 costs and financing gap

<i>[million euro]</i>	Ignalina, Lithuania	Kozloduy, Bulgaria	Bohunice, Slovakia	Total
Estimated costs	3 376	1 107	1 239	5 722
National financing, allocated ¹	262	348	476	1 086
EU financing, allocated	1 553	731	671	2 955
Financing gap	1 561	28	92	1 681

¹ Allocated national financing may be made up of dedicated funds set up for decommissioning, committed public expenditure or other national sources.

Source: Member States authorities, updated final decommissioning plans and 2015 annual work programmes, and, for Slovakia due to update, the draft 2016 annual work programme.

Findings: Financing Decommissioning

❑ Decommissioning financing gap

- in Lithuania gap now risen to 1.56 billion euro
- 28 million euro in Bulgaria, 92 million euro in Slovakia

❑ Member States **co-financing remains very limited**

- full EU financing only in '*well-founded exceptional cases*'
- but no Commission clear guidelines yet

❑ **Staff levels have declined**

- but some EU funds still used, e.g. in Lithuania for staff working on plant maintenance

Findings: costs, including final disposal

- ❑ estimated decommissioning cost will be **at least 5.7 billion euro**
- ❑ **double that with cost of final disposal to 11.4 billion euro**

<i>[million euro]</i>	Ignalina, Lithuania	Kozloduy, Bulgaria	Bohunice, Slovakia	Total
2015 cost estimate, <u>excluding</u> high-level waste and spent nuclear fuel disposal	3 376	1 107	1 239	5 722
Cost estimate for final disposal of high-level waste and spent nuclear fuel from the eight reactors	2 610	1 590	1 466	5 666
Cost estimate, <u>including</u> high-level waste and spent nuclear fuel disposal	5 986	2 697	2 705	11 388
National financing	262	348	476	1 086
EU financing	1 553	731	671	2 955
Financing gap	4 171	1 618	1 558	7 347

Findings: Reporting and Accounting

- ❑ Commission's assessment of financing and decommissioning plans, under **ex ante conditionalities**, was inadequate

- ❑ **future costs of nuclear decommissioning and final disposal**
 - not always recognised as provisions
 - and/or included in notes to accounts

- ❑ **Commission reply said it would publish:**
 - by Oct '16: Commission's Assessment of the ex-ante conditionalities
 - by end '16: Assessment of National Programmes in all 28 Member States

3. Recommendations

Recommendations

1. The three Member States concerned should:

- (a) further improve their project management practices in order to have the necessary waste and spent fuel management infrastructure in place when planned;
- (b) take steps to build up their own technical capacity, so as to achieve a better balance between in-house and external expertise;
- (c) find better ways to exchange best practices and technical knowledge, both among themselves and with the wider nuclear decommissioning community in the EU and beyond. **The Commission** should facilitate this in a cost-effective way.

Recommendations

2. (a) The Commission should, together with all relevant EU Member States, explore options for the disposal of spent fuel and high-level waste, including any regional and other EU-based solutions, duly considering safety, security and the cost-effectiveness of the alternatives. The Commission should include a review of this matter in its first report to the European Parliament and the Council on the implementation of the radioactive waste directive.

(b) The three Member States should, in parallel, progress with their plans for final disposal, in order to establish more complete cost estimates and financing plans for the disposal of spent fuel and radioactive waste, as required by the radioactive waste directive.

Recommendations

- 3. The three Member States** should recognise their own role in ensuring that the polluter pays principle is respected, and be prepared to use national funds to cover decommissioning costs, as well as the cost of final disposal, both in the current financing period and thereafter.
- 4. The Commission** should seek increases in national co-financing during the 2014-2020 financing period. It should define clearly, for example in a Commission decision, the 'well-founded exceptional' conditions under which projects can be fully financed by the EU under the nuclear decommissioning assistance programmes.

Recommendations

5. Dedicated funding programmes for nuclear decommissioning in Lithuania, Bulgaria and Slovakia should be discontinued after 2020.

If a clear need for the use of EU funds beyond 2020 is established, in one or more of these three Member States, any future EU funding proposed by the Commission and agreed by the legislator should include the right incentives to pursue decommissioning, including by being:

time limited and

based on appropriate levels of Member State co-financing.

One way to do this would be to consider widening access to the European Structural and Investment Funds to allow nuclear decommissioning activities to be covered, fulfilling these conditions.

Note: Lithuanian authorities drew our attention to their Accession Treaty protocols (see paragraph 83 and footnote 42 of our report)

Recommendations

6. **The Commission** should allow EU financing under the nuclear decommissioning assistance programmes to be used to finance only the costs of staff working fully on decommissioning activities.

7. **The Commission** should complete its assessment of the *ex ante* conditionalities.

8. **The Commission** should work together with all relevant Member States so that all future costs associated with nuclear decommissioning and the final disposal of spent fuel are accounted for properly, in a transparent manner, consistent with relevant accounting standards.