

Nuclear Decommissioning – Costs and risks

Presentation of the applied methodology and the results

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1. To identify, describe and characterise best practice examples for decommissioning in Europe
2. To understand, describe and compare the decommissioning projects in Bulgaria, Lithuania and Slovakia with these best practice examples, and
3. To derive recommendations for improvements in these decommissioning projects.

1. Best practices in decommissioning

Analysis showed that

- Most of the 88 decommissioning projects in Europe are located in France, Germany and the UK.
- A large variety of reactor types, power categories, operational ages are under decommissioning.
- Of the 88 projects only 8 have already finalised decommissioning (most of them located in Germany).

Identification of three examples:

- Electricité de France (EDF): stock company, but majorly state owned, nine reactors under decommissioning
- Energiewerke Nord (EWN): federally owned company, six reactors under decommissioning
- Sellafield Ltd.: set up under control of a national agency (NDA), large complex with a variety of installations to decommission

1. Best practices in decommissioning

Best practices that were identified:

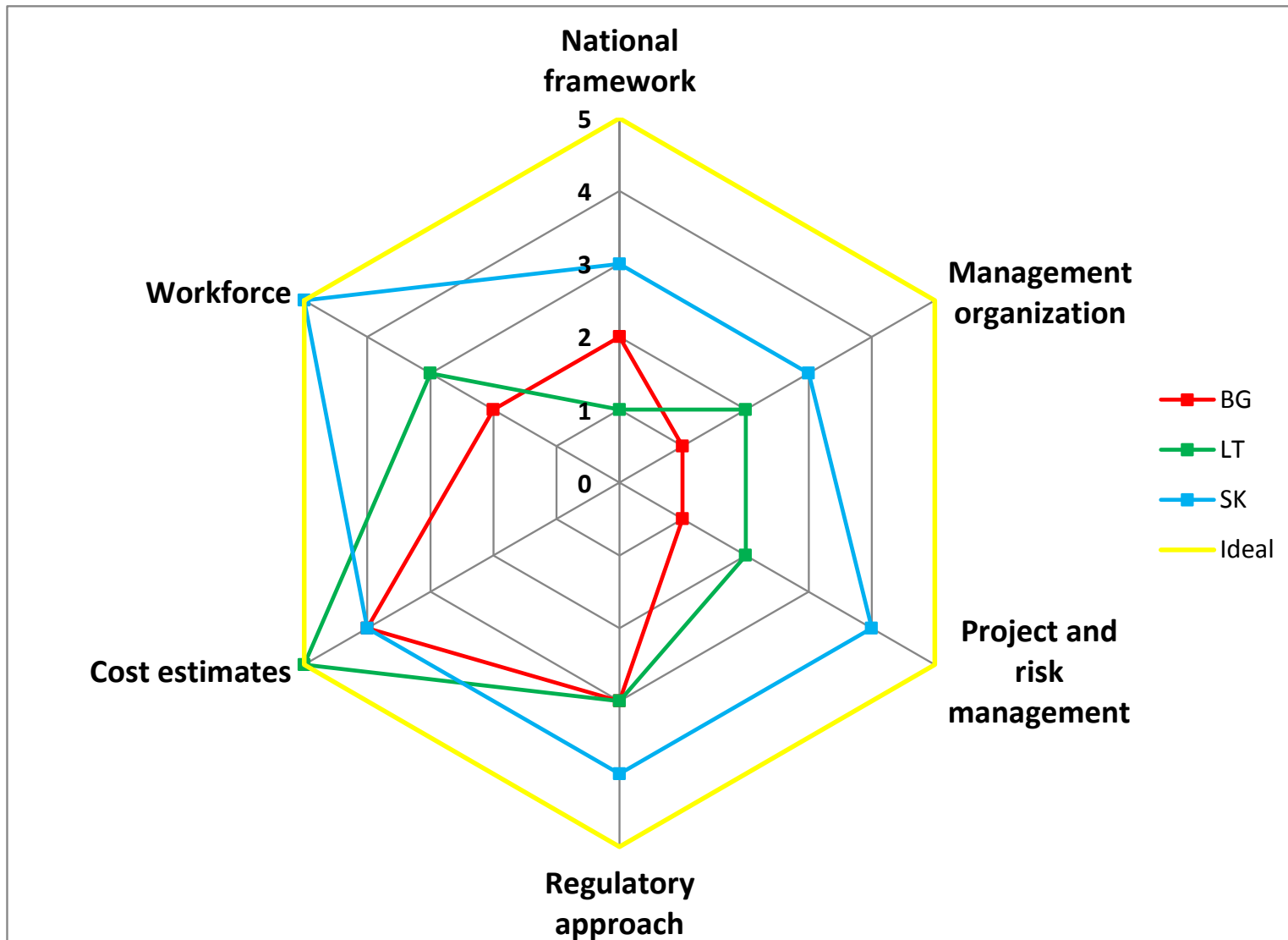
1. To completely re-structure and build-up designated **organisations** which are **optimised for decommissioning**, have undivided responsibility assigned and clear management structures (EDF, EWN).
2. To closely **control strategic management decisions** by a strong institution, leaving operational decisions with the management but providing a continuous and well-informed assessment counterpart for the management (e.g. EWN: Federal Ministry of Finance).
3. To create, install and continuously work with a comprehensive **project management** tool that provides all necessary information for work planning, as knowledge base, for estimates, etc.

1. Best practices in decommissioning

4. To preserve and use internal workforce's **knowledge and experience** with the facility, but also to **re-qualify** the workforce for the new task of decommissioning.

2. Results of the comparison

Quantitative representation of the comparison results



2. Results of the comparison

We identified

- that the national framework which should be able to set up, organise and control the responsible decommissioning organisation is not highly developed in Bulgaria, Lithuania and Slovakia and could be better understood as a national task,
- that the national organisations, which should be held fully responsible for decommissioning, are not optimally organised to fulfil their task in the necessary manner,
- that project management can be largely improved in most of the decommissioning projects.

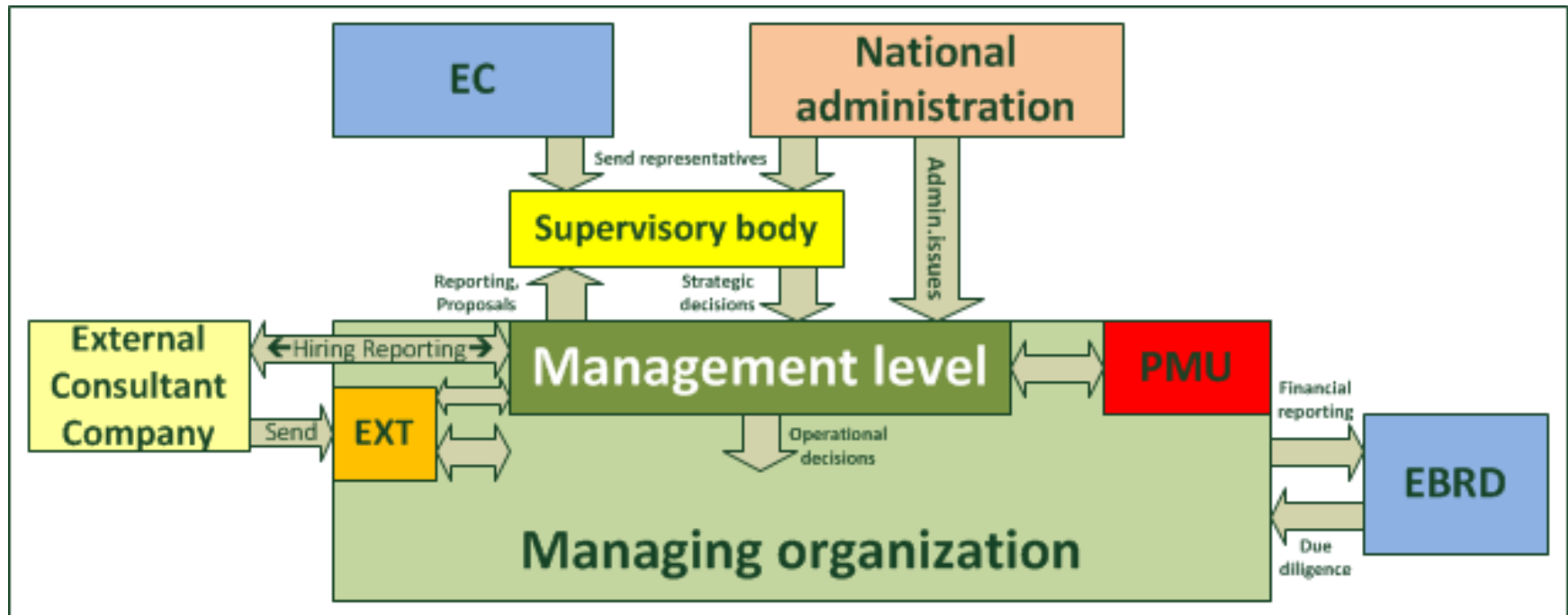
3. Derived recommendations

Eight recommendations were derived from the findings. These concern:

1. Improving national control conditions
2. Towards co-shared financing
3. Improving responsibility of the managing organisation
4. Improving project and risk management
5. Continuation of the good practice in licensing
6. Improving cost estimates
7. Improving effectiveness of the workforce
8. Achieving clear responsibility attributions

3. Recommendations

In recommendation 8 we propose a clear attribution of responsibilities. The respective organisational structure to achieve this can be designed as shown in the figure.



Vielen Dank für Ihre Aufmerksamkeit!
Thank you for your attention!

Haben Sie noch Fragen?
Do you have any questions?



The recommendations in full text

Recommendation 1: Improving national control conditions

The introduction of EU/member state shared projects and a joint steering of the strategic decisions of the organisation that is responsible for implementing decommissioning is recommended in order to strengthen the role of the national controlling administrator and to increase the cost effectiveness.

Recommendation 2: Towards co-shared financing

The EU support of the decommissioning should be re-organized as co-sharing projects. Cosharing of the costs would increase the country's interest in controlling the managing organisation's strategic decisions towards increased cost effectiveness. In the co-financed and co-directed projects both institutions financing the activity should equally control their effectiveness. The share should be defined with a fixed level, but allowing to reduce the EC's contribution in case of projects that are only in part related to decommissioning. The fixed level should be depending from the country's abilities, but shall not be below certain thresholds to achieve the desired goal.

Recommendation 3: Improving responsibility of the managing organisation

A clearer attribution of responsibilities in respect to strategic decisions is recommended. In accordance with this proposed re-organisation and under consideration of the specific conditions in this case (e.g. co-financing, shared control) a possible advanced structure of the management organisation in accordance with the identified best practice is recommended.

The recommendations in full text

Recommendation 4: Improving project and risk management

A complete and adequate project and risk management, including the respective task-tailored IT tools (PMIS), for the decommissioning project has to be considered a state-of-the-art requirement. Improving, completing and fully implementing project and risk management should be given the highest priority. Management should set up respective work methods and tools, the controlling institutions should supervise their design and timely implementation in the managing process.

Recommendation 5: Continuation of the good practice in licensing

Licensing issues should be carefully considered within the risk assessment and should not be underestimated, because failures and delays in this field can have major consequences for the decommissioning process. The good practice identified so far should be continued and upgraded to match to the upcoming more sensitive work steps.

Recommendation 6: Improving cost estimates

Cost estimates are based on state-of-the-art. To further increase their reliability and usefulness, cost escalation and risks should be included in future estimates.

Recommendation 7: Improving effectiveness of the workforce

The relevance of workforce issues, such as conversion management and training, is well recognized in all three countries. Explicit training, e.g. in the less technical and more soft skill areas of project management, risk communication and knowledge management is desirable.

The recommendations in full text

Recommendation 8: Achieving clear responsibility attributions

In any future setting clear, unambiguous and transparent responsibilities have to be defined and implemented to avoid any dilution and dispersion of responsibilities over several institutions and to avoid unclear and uncommunicated attributions.

The national supervising institution and the EC should be jointly attributed the full responsibility for controlling the national managing organisation's strategic decisions. They should have the right and as well the obligation to completely oversee the whole performance of the decommissioning project and to steer and control the management.

The managing organisation has to be attributed the sole, undivided and unambiguous responsibility to a) prepare the proposals and the complete background for the strategic decisions and b) for any operational decisions. This includes all overseeing, steering and supervision over organisation-internal as well as any external processes, including procurement, cost and time control.

To control the due diligence of all financial transactions, the managing organisation should define, set up, implement and regularly audit an adequate internal control system. The national controlling institution or an equivalent (e.g. the Ministry for Finance) as well as the EC should have the right and the obligation to oversee and exemplarily check the adequacy of the management's measures to keep control over its financial transactions.

If, in the case of Bulgaria and Slovakia, the interferences of the constitution of the managing organisation's with its non-decommissioning obligations is too complicated and may reduce the effectiveness of the management level's ability to act, an institutional separation of the decommissioning project part should be considered.