The role of regions in siting procedures

Background

Over the past 20 years, the NEA Forum on Stakeholder Confidence (FSC) has worked extensively on the involvement of local stakeholders in decision-making processes concerning high-level radioactive waste disposal facilities located in their area. This work has mainly focused on the direct impact of the disposal facilities on the hosting municipalities and their immediate vicinity. However, the social and economic effects of these facilities affect wider territorial areas that also have a say in the decisions made on their development. Because of this, the FSC has taken an interest in the role of regions in site selection procedures for deep geological repositories (DGRs). For the purpose of this document, "regions" are understood as the intermediate governance area between the local and national levels. These regions can sometimes be located in a neighbouring country.

To investigate this topic, an exploratory questionnaire was circulated among all FSC members in 2022. The objective was to frame the issue and to identify various regional involvement practices, possible challenges and ways to deal with these challenges. Eleven countries responded: Belgium, Canada, France, Germany, Italy, Japan, Spain, Sweden, Switzerland, the United Kingdom and the United States. This document describes the survey's findings. It includes an introduction presenting the situation in different countries and three national examples offered by Japan, Switzerland and the United States.

From a general point of view, one observation from the replies to the questionnaire is that countries adopt different methods to involve intermediate governance levels in the site selection process for a waste repository. Participation schemes are aligned to larger contexts of each country's governance structure, as well as political and geographical conditions.

Defining what is a region

In most countries, at least one "intermediate" governance level can be identified between the national and local levels. This is the level which is considered as a "region" for the purpose of this document. Some countries present only one layer between "national" and "local" levels. It is the case for Japan (prefectures), Sweden (counties), and Switzerland (cantons). Others have different "intermediate" governance structures, such as Belgium (regions, provinces, cantons), France (regions, departments), Italy (regions, counties), Spain (autonomous communities and provinces) and the United States (states, counties). In other countries, differences exist between areas within the nation, which adds complexity to the understanding of "regions". Moreover, the size of regions varies significantly from country to country. The term therefore needs to be understood in a loose way.

Various regulatory schemes for site selection and participation

The site selection of a DGR is a long and complex process in which decisions must be based on scientific and technical arguments, with wide-ranging public participation and ultimately wide societal support. A country can choose to establish its site selection process by a legal act adopted by Parliament (typically a law), or by governmental decision (e.g. a Ministerial Order or an announced national policy). Germany and Japan are countries where such processes have been established by a law. In these cases, the siting process is highly prescriptive, including roles and responsibilities of the different actors and administration levels (although the main focus remains the local level). In Canada, England and Spain[1], the site selection process has not been framed by law and is instead based on governmental policies and decisions. In the absence of a law prescribing the process for site selection, regional

1. The information provided for Spain refers to an experience of site selection for a centralised interim storage facility for spent fuel, not a DGR. The site selection of a centralised interim storage facility for spent fuel was a project initiated in 2006 with the constitution of an Inter-Ministerial Commission to define the licensing criteria for this facility and elaborate a proposal of candidates.

participation can be promoted in other ways: either by activities organised by the waste management agency (Nuclear Waste Management Organization, Canada) or through other channels.

In several countries, the search of a site for a geological repository is not governed by a specific set of site selection laws, but by a broader legislative framework. In Italy, the involvement of regions in siting procedures is based on a general law regarding administrative procedures and accessibility of administrative documents. In Belgium, regional involvement in siting is regulated by environmental and land use (including the underground) legislation. It is also the case in France[2] and Sweden, where the framework is additionally set by nuclear safety legislation as well as planning and construction legislation. In Switzerland, co-operation with cantons is prescribed in land-use planning legislation, which also applies to the Swiss site selection procedure.

Countries which refer to dedicated legislation on regional involvement in siting of a DGR are Germany, where the Site Selection Act (2013, amended in 2017) assigns limited roles to the regional level, and Japan, where the Final Disposal Act (2000) prescribes that national government should adhere to the agreement of the prefectural governor in the siting process, among other requirements.

While many countries grant financial benefits to local communities participating in site selection procedures, only a few of them provide specific financial support for regional involvement on a wider scale. In Switzerland, cantons receive annual funding for their participation in siting. It is also the case in Japan. In England and Wales, the relevant principal local authorities participating in working groups and/or community partnerships get financial support for participation costs in the siting process.

Differing levels of involvement of regions

Regional involvement is often defined as a consultative and/or monitoring role, meaning that opinions, concerns and/or objections can be voiced, but are not necessarily incorporated in the final decision. However, some countries designed more elaborate mechanisms for regional involvement: through involvement in parliamentary approval at the end of each phase of the site selection procedure (Germany), through an initial application/expression of interest (France, Italy) or a requirement for regional authorities to have a final agreement with steps taken in the siting process (Japan).

Another consideration in the site selection procedure of a waste repository is the involvement of neighbouring countries. Cross-border participation is an important issue that is dealt with differently by various countries. In practice, cross-border involvement is currently not incorporated in the siting process in most countries. This can be due to the current lack of a regulated national siting procedure (Spain), the lack of identified potential sites (Belgium), geographical isolation (Japan), or other reasons. However, the absence of current cross-border consultation mechanisms does not imply that such consultation would be disregarded once particular siting procedures are set.

In other countries, such supra-national regional involvement already took place, or is clearly included in the site selection procedure. It was the case with the involvement of Åland (Finland) in the siting process taking place in Östhammar (Sweden). The Finnish region was informed about the siting process and was attributed a consultative role in meetings and through written comments. Other examples can be found in Switzerland and Germany. In the case of Switzerland, affected German communities are part of the Swiss regional conferences. In the case of Germany, neighbouring countries will be involved in the siting process through formal participation inscribed in international standards and the national Site Selection Act (e.g. participation in regional conferences).

Dealing with challenges along the site selection process

Given the complexity of the subject matter, it is only natural that tensions arise as the repository becomes a reality. Regardless of whether countries have a regulatory framework for the site selection process or what the level of regulation/formalisation is, such challenges require an adequate response. Past experiences in several countries (such as Italy and Spain) illustrate the fact that national decisions on siting can be met with strong regional opposition, sometimes causing the project to fail. Reasons for this opposition can be varied. Conflicts, including judicial procedures, may typically arise when regions regulate issues within their realms of competence that collide with other competences reserved for the national level (e.g. the use of the underground could potentially become an issue in a country like Belgium, where regions are responsible for groundwater protection and reservoirs, geothermal projects and extractive activities). Other circumstances that can result in conflict can be a lack of confidence in national decision makers, a vocal and effectively organised protest movement, a perceived lack of involvement of the regions, etc.

No matter the motives, experience proves that such challenges arising during the siting process must be addressed as they occur. Otherwise, they are likely to affect the procedure as the case of Spain illustrates, with a process to select a centralised interim storage facility being judicially challenged[3].

2. The applicable law in France makes reference to the siting of an underground laboratory, which is in France a prerequisite to establishing a geological repository.

3. The Spanish case refers to lack of agreement between the central and the regional governments in licensing a centralised interim storage facility for spent fuel in a site in the municipality of Villar de Cañas, in the Autonomous Community of Castilla La Mancha. This site was designated among a list of candidate municipalities by the Central Government in December 2011. Some activities were conducted to prepare the license application for this site, but in July 2015, after a change of administration, the regional government made use of its competences to propose the extension of an environmentally protected area (Natura 2000 Network) which would, in practical terms, hinder the construction of the facility in that location. This decision was judicially challenged by the central Government. A judicial process took place until July 2018, when the Supreme Court of Castilla La Mancha ruled against the decision to expand the Natura 2000 Network. Ultimately, the delays in the process and lack of agreement resulted in an abandonment of the project.

Additional considerations

Apart from the abovementioned questionnaire, the FSC has discussed the involvement of regions in site selection processes during regular meetings. Among the ideas that emerged, one relates to specific communication issues. Some countries have multilingual communities, such as Belgium, Canada, Spain or Switzerland. In these cases, it can be beneficial to translate the information into the different national languages to foster the involvement of regions, because among other things this is a sign of respect of different identities and facilitates the community's open and direct participation in the debate.

A key factor in this discussion is the benefits for the region as a whole in terms of added value gained from the existence of the facility. The site selection process can be jeopardised by the regional perception that a single municipality will benefit from the DGR (in terms of increased sources of income, employment growth, enhanced environmental protection, possible tax benefits, etc.), while the region as a whole would be obligated to endure potential inconveniences such as waste shipments and water use and address concerns from any environmental impacts associated with the DGR. This perception could be overcome with a broader approach that would extend the circle of benefits to not only the host municipality and its immediate neighbours, but to wider areas. The sectoral plan in Switzerland has taken this issue into account, setting the debate on "regional" rather than local development.

Conclusion

Countries are pursuing different paths to identify their sites for a high-level waste repository, thereby involving stakeholders at different levels of governance. The role played by the intermediate level of governance (or what is referred to here as the region) depends on several factors. These include the governance structure of the country as well as political and geographical aspects. Each country defines more or less formally the role of such intermediate levels, giving their regions a consultative role in most cases.

Practical experience demonstrates that:

- an area wider than the sole hosting municipality should be included in the decision-making process, be it in a formal or informal way;
- the involvement of regions should be considered at the initial stage of the selection process;
- foreseeing mechanisms for conflict resolution during the search process is important;
- flexibility in the design and development of site selection dynamics, including in the participation framework, is key.

The following case studies provide further insights into the interactions between national, regional and local representatives in DGR siting decisions in three different countries.

Three national examples

Japan

The political hierarchy in Japan consists of three levels: national, prefectural and municipal. There are 47 prefectures and 1 718 municipalities in Japan.

The site selection process for a geological disposal project is specified in the Final Disposal Act, which requires that disposal site(s) be selected through three investigation stages: Literature Survey (LS), Preliminary Investigation (PI), and Detailed Investigation (DI).

The literature survey can be initiated by two mechanisms: application for the LS to the Japan Nuclear Waste Management Organization (NUMO) by a municipality or proposal by the national government to a municipality to accept the LS.

The inclusion of the regional level in the procedure depends on the stage of the procedure. The LS application and the acceptance of the government proposal can be made at the discretion of the municipality. These steps do not require prefectural approval. However, when proceeding from LS to PI, from PI to a DI, and from DI to the selection of a disposal site, agreement from both mayors of the municipality and prefectural governors are required. In addition, the intention of the municipalities surrounding the hosting municipality that accepted investigation will also be taken into consideration when the prefectural governor decides whether or not to proceed to the next stage.

In terms of added value, municipalities that accept the investigation receive a grant from the national government. During the LS, JPY 1 billion (ca. EUR 7.2 million) per year with a maximum of JPY 2 billion (ca. EUR 14.4 million) is provided. During the PI, JPY 2 billion (ca. EUR 14.4 million) per year for PI, with a maximum of JPY 7 billion (EUR 50.7 million) is provided. The grant for DI and the later stages have not been specified yet. The grant will be given to the hosting municipality, however the neighbouring municipalities and prefectures could also receive a grant that should not exceed 50% of the total grant.

In the Hokkaido prefecture, the first phase of the site selection stage (the LS), is being conducted in two municipalities (Suttu town and Kamoenai village) since November 2020. The LS does not involve on-site activities such as borehole drilling, however a "Place for Dialogue" initiative has been held in the local municipalities since April 2021 to enhance the understanding of geological disposals. An officer from the Hokkaido prefectural government participates in the "Place for Dialogue" as an observer.

Switzerland

Cantons are the member states of the Swiss Confederation. They act as the intermediate level between the federal government and the communal level (i.e. municipalities). The implementation of the site selection procedure for a DGR for all waste categories is set out by law. It is carried out in accordance with spatial planning legislation ("Sectoral Plans"), which calls for co-operation at all three levels. Sectoral Plans are the most important spatial planning instrument of the federal government to plan national infrastructure projects such as a DGR and are a means to co-ordinate projects with the cantons and other stakeholders. The siting decisions for a DGR that result from this collaboration are made within the Sectoral Plan process and are binding on the authorities at all levels. Currently, the "Sectoral Plan for Deep Geological Repositories for Nuclear Waste" (Sectoral Plan for DGR) is in its third and last stage. In September 2022, the implementer Nagra announced the siting region for which it will submit the general licence application in 2024.

Cantons were already engaged in the development of the "Conceptual Part" of the "Sectoral Plan for DGR"[4]. The Conceptual Part defines the goals, the procedures, and the roles of all involved stakeholders as well as the criteria to be applied in selecting sites for DGRs in Switzerland. Since the start of the site selection procedure according to the Conceptual Part of the Sectoral Plan for DGRs in 2008, the cantons are already involved on a political and technical level. This involvement is formalised through various mechanisms (committees, expert groups, involvement in planning of important procedural steps, early information, publication of statements, etc.). Thus, cantons bring their interests and values into the decision-making process by participating in each of the three stages. They receive a certain amount of funding from the waste producers each year to cover their participation costs and collaboration in the Sectoral Plan and to fund their own experts. Thus, the cantons can build knowledge on safety-related topics with their own chosen experts.

Because the cantons (and the municipalities) do not have a right to veto a DGR, early and broad co-operation is crucial in order to acknowledge the needs and concerns of the cantons and to identify potential conflicts that may arise during the process. Conflicts can be resolved before decisions are taken by the Federal Government and Parliament (and possibly by a facultative referendum by the Swiss voters).

If conflicts between the Sectoral Plan and cantonal spatial planning cannot be resolved, the siting cantons, neighbouring cantons and federal authorities have the right to invoke the settlement procedure at any time from the responsible Federal Department.

United States

The United States is a federal republic of 50 states. These 50 states are further divided into smaller political subdivisions typically called "counties" (one state – Louisiana – uses the term "parish" and one – Alaska – uses the term "borough"). Cities are the dominant local unit of government.

The Nuclear Waste Policy Act (NWPA) of 1982 supports the use of deep geologic repositories for the safe disposal of radioactive waste. The NWPA establishes procedures to evaluate and select sites for geologic repositories and for the interaction of state and federal governments. It also provides a timetable of key milestones the federal agencies must meet in carrying out the programme. The NWPA assigns the US Department of Energy (DOE) the responsibility to site, build, and operate a deep geologic repository for the disposal of high-level waste and spent nuclear fuel. The NWPA directs the US Environmental Protection Agency (EPA) to develop standards for protection of the general environment from offsite releases of radioactive material in repositories. The NWPA directs the US Nuclear Regulatory Commission (NRC) to license the DOE to operate a repository only if it meets the EPA's standards and all other relevant requirements. Later amendments were made to the NWPA to:

- Direct the DOE to consider Yucca Mountain in the state of Nevada as the site to be evaluated for the first geologic repository;
- Prohibit the DOE from conducting site specific activities at a second site unless authorised to do so by Congress;
- Require the Secretary of Energy to develop a report on the need for a second repository no later than 1 January 2010;
- Establish a commission to study the need and feasibility of a monitored retrievable storage facility.

In 2002, the DOE formally recommended to the US President that Yucca Mountain be constructed as the nation's first high-level waste repository. Although the US President approved the recommendation, the NWPA provided the state the opportunity to veto the decision. The State of Nevada exercised its right to veto the selection of Yucca Mountain. However, consistent with the process defined in law, Congress passed a resolution approving the location, allowing the DOE to move forward. The DOE submitted its licence application in 2008, although the proceeding has been suspended since 2011.

Recently, the DOE initiated a Consent-Based Siting Program for Spent Nuclear Fuel to broadly look at stakeholder engagement strategies to facilitate the siting of a facility.

4. SFOE (2008), *Sectoral Plan for Deep Geological Repositories: Conceptual Part*, Swiss Federal Office of Energy, Bern.

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