

## **Comment on the Initial Project Description for the NWMO Deep Geological Repository – On the treatment of Transportation of Used Nuclear Fuel**

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*This comment concerns the treatment of transportation in the Initial Project Description (IPD) for the proposed Deep Geological Repository (DGR) for Canada's used nuclear fuel.*

The IPD states that transportation of used nuclear fuel from reactor sites to the repository is not included within the scope of the Project, beyond primary and secondary access roads at the Project site, on the basis that transportation is regulated separately by the Canadian Nuclear Safety Commission (CNSC) and uses existing infrastructure. While this position may reflect existing regulatory practice with respect to package certification and transport licensing, it raises substantive concerns regarding whether all reasonably foreseeable effects of the Project have been appropriately scoped under the Impact Assessment Act (IAA).

### **Transportation as an integral component of the Project**

Transportation is not an ancillary or optional activity. It is a necessary, long-duration, and geographically distributed component of the Project, without which the DGR cannot function. Over the operational life of the facility, transportation will involve the repeated movement of used nuclear fuel from multiple reactor sites across Canada to a single repository location, potentially over several decades. This activity is therefore not incidental to the Project but constitutive of it.

By excluding transportation from the Project scope, the IPD effectively treats transportation as a solved technical matter rather than as a system of activities with spatial, social, cultural, and environmental dimensions. The reliance on CNSC-certified transportation packages, while important for demonstrating container integrity and radiological protection, does not address the broader effects associated with transport corridors, cumulative shipment volumes, emergency preparedness across diverse jurisdictions, or impacts on communities and Indigenous Nations located far from the repository site.

### **Regulatory separation versus assessment completeness**

The IPD repeatedly points to separate CNSC regulation and certification of transportation packages as justification for excluding transportation from the Project description. However, certification and licensing address how transportation is conducted at a technical level; they do not address where, how often, over what time frame, or with what cumulative effects transportation will occur. These latter questions fall squarely within the purposes of impact assessment.

Under the IAA, the scope of assessment is not limited to activities physically located at the project site. It extends to all effects that are reasonably foreseeable and that may occur on federal lands, outside the province, or on Indigenous lands, regardless of whether those effects arise from activities regulated under other statutes. Transportation of used nuclear fuel clearly meets this threshold.

### **International precedent: Posiva (Finland) and SKB (Sweden)**

Comparable international deep geological repository projects provide clear precedent for treating transportation as an integral component of the repository project for the purposes of environmental assessment.

In Finland, Posiva's Environmental Impact Assessment process for the Onkalo repository explicitly included transportation of used nuclear fuel as part of the project scope. Transport modes, routes, cumulative shipment volumes, accident scenarios, and emergency preparedness were assessed geographically, not abstractly. Municipalities and communities along transport routes were included in consultation processes, even where no repository facilities were located. While transport packages were separately licensed, transportation itself was assessed as a long-term, repetitive activity with distinct social and environmental effects.

Similarly, in Sweden, SKB's environmental assessment and licensing process for the Forsmark repository integrated transportation from interim storage facilities to the repository as a linked system. Rail and sea transport corridors were explicitly identified, risks were assessed in relation to real transport geographies, and public engagement extended beyond the host community to transport municipalities. Transportation was explicitly recognized as one of the most publicly visible phases of the programme, warranting early and transparent assessment.

In neither case was separate regulatory oversight used as a rationale for excluding transportation from assessment. Instead, certification and licensing were treated as complementary to, rather than substitutes for, impact assessment.

### **Consent, participation, and Indigenous jurisdiction**

The IPD places strong emphasis on consent-based siting and on the roles of Wabigoon Lake Ojibway Nation and the Township of Ignace as host communities. However, by excluding transportation from the Project scope, the consent and engagement framework effectively stops at the repository boundary.

Transportation corridors will traverse multiple municipalities and Indigenous territories over the life of the Project. Communities and Nations located along these corridors may experience effects related to risk perception, emergency preparedness requirements, land and resource use, and long-term institutional responsibility, even if the probability of an accident is low. The absence of a corridor-level assessment risks rendering these communities procedurally invisible within the impact assessment process.

## **Cumulative and climate-related considerations**

The IPD does not address transportation as a cumulative activity involving thousands of shipments over decades, nor does it examine how climate change may affect transportation infrastructure, emergency response, or route reliability over the operational life of the Project. Wildfires, flooding, extreme weather, and infrastructure degradation are increasingly relevant considerations for long-term projects of this nature and warrant explicit assessment.

## **Conclusion**

The exclusion of transportation of used nuclear fuel from the Project scope represents a significant gap in the Initial Project Description. While technical regulation of transport packages and operations is necessary, it is not sufficient to meet the objectives of impact assessment under the IAA. International precedent demonstrates that transportation can and should be assessed as an integral component of a deep geological repository project, even where regulatory responsibilities are shared across statutes and agencies.

At a minimum, the Impact Assessment Agency of Canada should require that transportation be brought within the scope of the Project for the purposes of impact assessment, including corridor-level effects, cumulative shipment volumes, emergency preparedness across jurisdictions, Indigenous and municipal participation along transport routes, and climate-related risks. Addressing transportation in this manner would strengthen the completeness, transparency, and legitimacy of the assessment process and align the Project more closely with international practice.

For comparative context, a brief summary of how transportation was treated in the environmental assessments for comparable deep geological repository projects in Finland and Sweden is provided in Annex A (below).

## **Annex A – Comparative Context: Treatment of Transportation in Deep Geological Repository Projects**

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### **Finland – Posiva (Onkalo DGR)**

#### *Assessment scope*

Transportation of used nuclear fuel from reactor sites to the repository was explicitly included within the scope of the Environmental Impact Assessment process.

#### *Key features*

Transportation treated as a long-term, repetitive project activity.

Transport modes and routes (rail and sea) identified and compared.

Cumulative shipment volumes assessed over the operational life of the repository.

Accident scenarios assessed geographically, not solely at the container level.

Municipalities and communities along transport routes included in consultation processes.

#### *Regulatory approach*

Transport packages and operations subject to separate licensing.

Environmental assessment addressed corridor-level, cumulative, and social effects alongside technical regulation.

### **Sweden – SKB (Forsmark DGR)**

#### *Assessment scope*

Transportation integrated into the repository project as a linked system between interim storage (CLAB) and the final repository.

#### *Key features*

Rail and sea transport corridors explicitly identified.

Risk assessments tied to real transport geographies.

Public engagement extended beyond the host community to transport municipalities.

Transportation explicitly recognized as one of the most publicly visible phases of the programme.

#### *Regulatory approach*

Existing transport experience used to inform assessment, not to exclude transportation from scope. Licensing and impact assessment treated as complementary processes.

### **Canada – NWMO (Proposed DGR)**

#### *Assessment scope*

Transportation of used nuclear fuel from reactor sites to the repository explicitly excluded from the Project scope for the purposes of the Initial Project Description, beyond site access roads, on the basis that transportation is regulated separately and uses existing infrastructure.

#### *Key characteristics*

No identification or assessment of transport corridors.

No analysis of cumulative shipment volumes over the life of the Project.

No corridor-level assessment of environmental, social, or Indigenous land-use effects.  
Engagement and consent framework limited to host communities.

*Summary observation*

In comparable international repository projects, transportation has been treated as an integral component of the project for the purposes of environmental assessment, even where transport packages and operations are regulated under separate licensing regimes. The exclusion of transportation from the scope of the NWMO Project represents a clear departure from this practice and raises questions regarding the completeness of the impact assessment under the Impact Assessment Act.

*Key Documents*

Posiva Oy. *Final Disposal of Spent Nuclear Fuel – Environmental Impact Assessment Report*. Eurajoki, Finland: Posiva Oy, 2008.

Ministry of Employment and the Economy (Finland). *Decision-in-Principle on the Final Disposal Facility for Spent Nuclear Fuel*. Helsinki, 2010.

Svensk Kärnbränslehantering AB (SKB). *Final Repository for Spent Nuclear Fuel – Environmental Impact Statement*. Stockholm: SKB, 2011.

Land and Environment Court (Sweden). *Judgment on the Application for a Final Repository for Spent Nuclear Fuel*. Case no. M 1333-11, 2018.