



Roadmap for societal engagement for Small Modular Reactors (SMRs) in Finland

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SMRSiMa webinar, 12.1.2024

12/01/2024

VTT – beyond the obvious

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Introduction

- This study is part of SAFER2028 SMRSiMa project **SMR siting and waste management** (VTT, GTK, LUT). The aim of WP4 *Societal Engagement on SMRs and SMR waste management* is to advance our understanding on the societal engagement related to deployment of SMRs in Finland.
 - Task 1: Public opinion on SMR siting and Nuclear Waste Management Strategies (LUT)
 - Task 2: Resident engagement in pre-zoning phase (VTT)
- Based on scoping review of public documents, interviews (3) and survey results, VTT and LUT are co-developing a preliminary roadmap for addressing societal engagement issues related to SMRs in district heating.

Societal engagement: What is it and why a roadmap now?

- **Stakeholder/public/societal engagement** is premised on the notion that those groups who can affect and/or are affected by an issue [*e.g., physical location of district heating SMR plant in proximity to residential areas*] should be given the opportunity to comment and input into the development of decisions that affect them.
- Roadmaps for stakeholder engagement are **largely missing** – most strategic roadmaps focus on business and technology. Lessons learned from Canada and US on stakeholder engagement for SMRs should be reflected upon.

What is new with the SMRs?



New purposes

- With SMRs, energy can also be produced in smaller units and used for new purposes, such as heating industry and buildings. These are meaningful purposes for society (e.g., heat production for cities).



New actors and new technology

- Power companies, municipalities, manufacturing companies, etc. may come up with new ideas for engagement, while technology may enable new means for societal engagement.



New legislation and requirements

- Ongoing reform of the Nuclear Energy Act and the provisions for implementing it may have impact on societal engagement (legal requirements, two-way dialogue; citizens' comments).



New stakeholder landscape

- From small, rural, remote communities to large cities, heterogenous, multilingual, multicultural, changing urban population. New emergency planning zone considerations, new ways of working

The Canadian approach to stakeholder engagement on SMRs



- Canada's SMR Roadmap (2018): a collaborative 10-month cross-country conversation on Canada's SMR opportunity, led by the Government of Canada, through Natural Resources Canada (Steering Committee comprised of 11 partners)
- 180 individuals, 55 organizations, 10 sectors and subsectors: industry, federal, provincial, and territorial governments, utilities and other interested stakeholders
- Workshops, Indigenous engagement sessions, and working groups: "Indigenous engagement is not a one-time checklist exercise."
 - Indigenous and public views: reviewing and synthesizing existing literature and public opinion research, performing gap analyses, and developing recommendations.
 - Indigenous engagement best practices and lessons learned



"The path forward requires more extensive public engagement."

Stakeholder engagement on SMRs in Canada

- The study was commissioned by the Government of Canada due to need to build confidence in the Canadian Nuclear Safety Commission (CNSC) as a competent authority to regulate the growing industry in Canada. Main considerations:
 - **Regulatory Preparedness** to ensure the regulatory framework is ready for SMRs
 - **Addressing Community Concerns**, especially Indigenous and Northern communities, “potential beneficiaries of SMRs as well as bearers of the bulk of the risk”
 - **Enhancing Scientific Literacy of the public:** understanding SMRs risks and benefits is challenging for the public due to high level of technical complexity.

Stakeholder Engagement on Small Modular Reactors (SMR)

June 2023

Lorraine Brown, Aleksandar Despotovic, Roozbeh Hosseini, Todd Johnston & Alyssa Kirlin



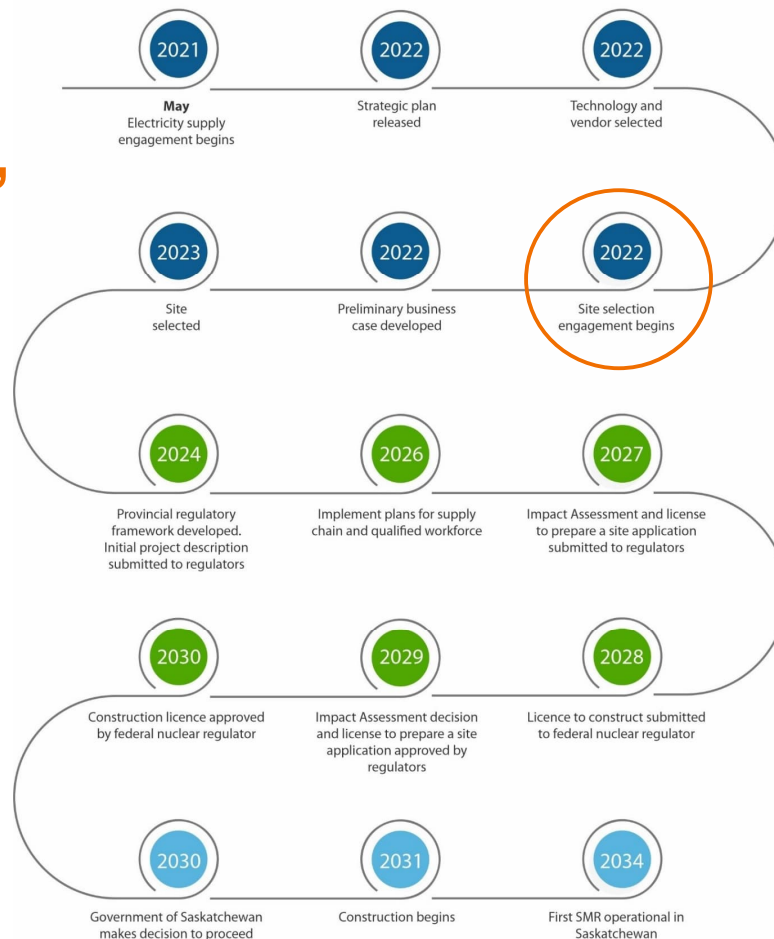
“Community concerns can be mitigated through:

- Site tours
- Collaborative environmental monitoring program
- Lessons learned from the decommissioning process at the Whiteshell power plant
- Plain language messaging and raising scientific literacy in engagement” (Brown et al., 2023)

SMR in Saskatchewan, Canada

“After reviewing the project schedules, it was determined that more time for engagement with the public, stakeholders and Indigenous rights holders would be beneficial.”

(SaskPower spokesperson Joel Cherry, 2022)



SaskPower set up a webpage [Planning for Nuclear Power | Engage SaskPower](#) to enable two-way dialogue with the public.

In 2022, Canadian utility SaskPower has identified two areas in the province of Saskatchewan - **Estevan** and **Elbow** - for further study to determine the feasibility of hosting SMR.

SaskPower will establish a **Regional Indigenous and Stakeholder Committee** made up of nominated representatives from each study area (Estevan and Elbow) to **support public participation on the SMR development project** (WNN, 2022)

Sources:

- [World Nuclear News: https://www.world-nuclear-news.org/Articles/SaskPower-selects-two-potential-sites-for-SMR-depl](https://www.world-nuclear-news.org/Articles/SaskPower-selects-two-potential-sites-for-SMR-depl)
- [Sask. pushes decision on site of potential small nuclear reactor back to late 2024 | CBC News](#)
- [A strategic plan for the deployment of small modular reactors | ontario.ca](#)

CONSENT-BASED SITING ROADMAP

The U.S. Department of Energy is pursuing one or more federal consolidated interim storage facilities to **store the nation's commercial spent nuclear fuel** in the near-term using a **multi-stage consent-based approach** that puts communities' interests at the forefront.



The USA approach: Consent-based siting for storage facilities

VTT

“To facilitate inclusive community engagement and elicit public feedback on consent-based siting.”

“Consent-based siting is an approach to siting facilities that focuses on the **needs and concerns of people and communities.**”

Siting processes include **social, economic, and technical considerations.**

“On the social and economic side, the public can participate in the siting process in a variety of ways, including through public meetings and hearings, advisory panels, studies that assess community wellbeing and long-term planning, and other outreach or educational effort.”

Source: U.S. Department of Energy, 2023 [CBSRoadmap-2023.png \(energy.gov\)](#)

Preliminary SWOT analysis for societal engagement in Finland in relation to SMRs



Strengths

- Strong regulator and open communication
- Waste management solution and competences
- Technical and R&D competences
- Existing legal basis and processes for societal engagement
- Cultural features: trust, transparency, freedom of expression, low level of corruption, high level of education
- Nuclear ecosystem and overall safety is valued

Weaknesses

- Strong technical focus overrides other aspects
- Overreliance on the regulator STUK
- Cultural features: too much trust in society
- Nuclear regulations and legislation in transition
- Role of local communities may vary
- Power imbalances among stakeholders
- NGOs voices are not necessarily strong
- Difficulties to interact and engage citizens
- Municipalities lack links to nuclear and STUK



Opportunities

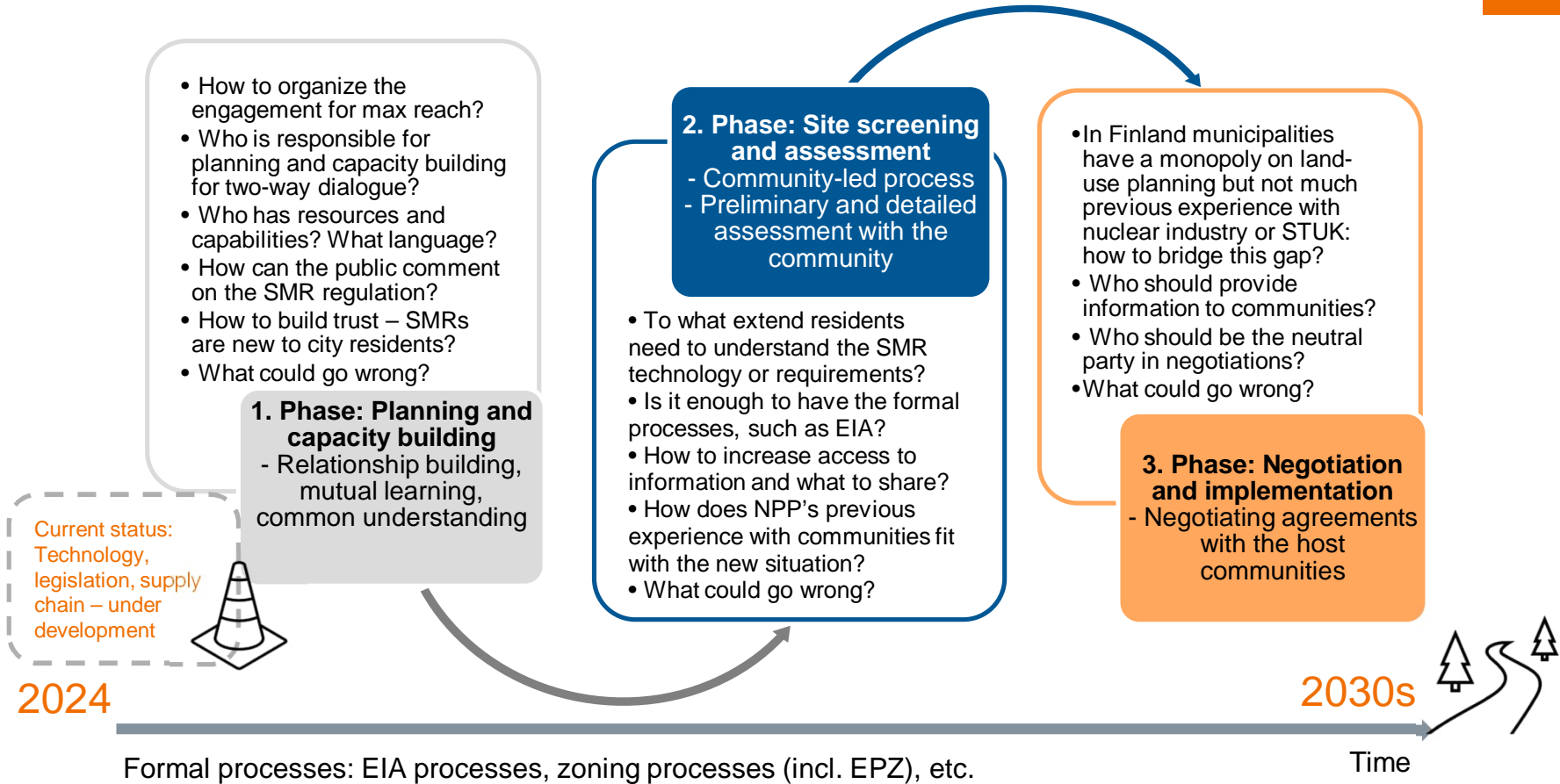
- Positive attitudes toward use of nuclear in society
- Local autonomy: municipalities as critical gatekeepers and mediators
- Trust in science and regulator enables fact-based communication
- Municipalities have knowledge and hands-on experience about their residents' needs and SE
- New actors and technologies enable new and diverse approaches for societal engagement

Threats

- Assumption for continuous public support for the nuclear; NIMBY, costs, waste management, transport issues may overrule positive attitudes
- Excluding women's concerns, minorities
- Opposition may unexpectedly arise from diverse and changing urban communities
- Overemphasis of economic and technical factors
- Insufficient resources, means and competences



Roadmap for societal engagement for SMRs in Finland



Conclusion and a way forward

- The roadmap for societal engagement for SMRs in Finland serve as a basis for discussion about the **important questions** to explore; to pay attention to the **enablers and barriers** that require further consideration.
- The roadmap is intended as a **dynamic, living document**, which will be revised and enriched with time as we gain more input and insight from various stakeholders.
- Experiences in the USA and Canada show that **societal engagement for SMRs cannot be underestimated** – it is a long-term, continuous process that requires resources, competences, diverse means, leadership and governance approach.

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