Swedish geological disposal of spent nuclear fuel and radioactive waste - societal impact
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SKB
Challenges for stakeholder contacts and acceptance

• The extremely long time scale.

• First-of-its-kind-type of project.

• National interest to be solved locally - but preferably not in my backyard (NIMBY).

• Connections to nuclear power and nuclear weapons.

• Complicated and controversial field.

• Technical experts communicating with the public.

• Risk perspectives difficult to explain and understand.
Lessons learned during the 1980’s required a new strategy
Clear roles, responsibilities and financing of great importance

The Swedish Radioactive Waste Management Programme

- The nuclear power industry is responsible for taking care of its own waste.
- *The Swedish Nuclear Fuel and Waste Management Co (SKB)* was founded, and is owned by, reactor owners to fulfil the mission.
- Financing secured through The Nuclear Waste Fund.
- Control and review from society (Government, regulator, authorities and municipalities).
- Participation and influence for other stakeholders.
Societal aspects

SKB’s experiences for fruitful stakeholder involvement

- Cooperation industry/municipality is a sensitive thing.
- Waste disposal also tend to raise suspicions and distrust.
- Building and keeping trust and confidence needs time and patience.
- A durable relationship requires continued efforts over time.
- Strategy based on openness, transparency, voluntary participation, alternatives, dialogue and stepwise implementation.
- Societal aspects and Social Science were included in investigations and RD&D-programme.
Target groups

National/international

Authorities
Swedish Radiation Safety Authority (SSM)
The Swedish EPA, etc.

Baltic sea countries
(The Espoo Convention)

NGOs
Nature and environmental conservation organisations, etc.

Local/regional

Municipality, county administrative board

Members of the public
Particularly affected members of the public

NGOs
Nature and environmental conservation organisations, etc.
Interaction with stakeholders

Local presence and personal contacts often better than large meetings ...

... for example with local land and property owners and nearby residents
Facility visits and exhibitions

Brings science out to the public and improves understanding

- The central interim storage for spent fuel (Clab) receives 20,000 visitors annually
Site investigations and consultations 2002-2010

- More than 60 meetings and events, mainly in the two investigated municipalities.
- Every meeting and event well documented in official notes or protocols and summarized in annual reports.
- Over 2,000 questions, comments and remarks – written answers to all of them from SKB.
- Complete information and documentation on www.skb.se
- Consultation report enclosed with EIS in applications.
Finding a safe and accepted site

As a result of a long and thorough process SKB chose Forsmark

Knowledge building

Type areas 1977-1985
Strategic studies 1997-1999
Feasibility studies 1992-2000
Site investigations 2002-2008

Site studies

Hultsfred
Malå
Nyköping
Oskarshamn
Storuman
Tierp
Älvsby
Oskarshamn (Laxemar)
Östhammar (Forsmark)

Site selection 2009

Licensing ca 2011-2020

Construction ca 2020-2030
SKB continues both in Östhammar and Oskarshamn

**Östhammar**

*Today*
SFR + SFK + local office
- Number of employed: >50

*Future plans*
Expansion of SFR
- +150 jobs during construction

Establishment of spent fuel repository (SFK)
- + 500 jobs during construction
- + 250 jobs during operation

Total costs 30 billion SEK

**Oskarshamn**

*Today*
Hard rock-, bentonite- and canister laboratories + Clab and local office
- Number of employed: >225

*Future plans*
Encapsulation plant
- + 300 jobs during construction
- + 30 jobs during operation

Canister factory
- + 25 jobs during construction
- + 25 jobs during operation

Total costs 15 billion SEK

**Added values**

Östhammar: 0,5 billion SEK
Oskarshamn: 1,5 billion SEK
Initiated by the municipalities

- Agreement between Östhammar and Oskarshamn in 2007 to approach SKB together.

- Call for SKB and SKB’s owners to contribute to ”Added Values” in both municipalities.

- Agreement on ”Added Values” required before SKBs´ site selection.

- One and a half year of negotiations followed.

- SKB and its´ owners signed agreement in 2009.
The AVP facilitates further investments for mutual benefits in both municipalities

- Acknowledgment for municipal efforts and long participation in the process.

- **Based on Values**, not on money transfers.

- The municipality that was selected for the repository (Östhammar) gets 25% of The Added Values.

- The other municipality (Oskarshamn) gets the encapsulation plant and 75% of The Added Values.
AVP experiences

Prosperous and promising...

- Stepwise approach applicable and suitable not only on technology
- Acknowledgment to municipalities for participation
- Municipal initiative to negotiations an advantage
- Added Values and mutual benefits, not compensation
- Not expected allocation of resources wise and a success even if sometimes hard to understand
- Crucial component for local presence, trust and confidence in licensing phase
- No compromising or jeopardizing of anyones integrity
Trust and confidence

Public opinion poll, before site selection – ”if there is a suitable site”

Source: Synovate
The future KBS-3 final repository in Forsmark for spent nuclear fuel
A milestone for the Swedish RWM programme – SF final repository applications submitted and licensing procedures ongoing since March 2011