

Mission

- Independent committee attached to the Ministry of Environment (advise the government)
 - Studies issues relating to nuclear waste and the decommissioning of nuclear installations
 - Members - independent experts within technology and science but also within areas such as ethics and social sciences
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- Reports on the state of knowledge in the nuclear waste area every third year (1998, 2001, 2004 and 2007 reports available in English)
 - Independent review of SKB's RD&D programme for the disposal of spent nuclear fuel (every third year)
 - Hearings & seminars (Transparency Programme)

Members & Staff

Chair

Torsten Carlsson, (former Chair of Oskarshamn Municipal Executive Board)

Members

Carl Reinhold Bråkenhielm (vice chair), Professor, Theology, Uppsala University

Lena Andersson-Skog, Professor, Economic History, Umeå University

Yvonne Brandberg, Professor, Behavioural Science, Karolinska Institutet, Stockholm

Willis Forsling, Professor, Inorganic Chemistry, Luleå University of Technology

Tuija Hilding-Rydevik, Associate Professor, Environment and Planning Processes, Swedish University of Agricultural Sciences, Stockholm

Gert Knutsson, Professor Emeritus, Hydrogeology, Royal Institute of Technology, Stockholm

Inga-Britt Lindblad, Professor, Media and Communication Science, Umeå University

Clas-Otto Wene, Professor Emeritus, Energy Systems Technology, Chalmers University of Technology

Expert

Hannu Hänninen, Professor, Engineering Materials, University of Technology, Helsinki, Finland

Secretariat

Director Björn Hedberg (M.Sc.)

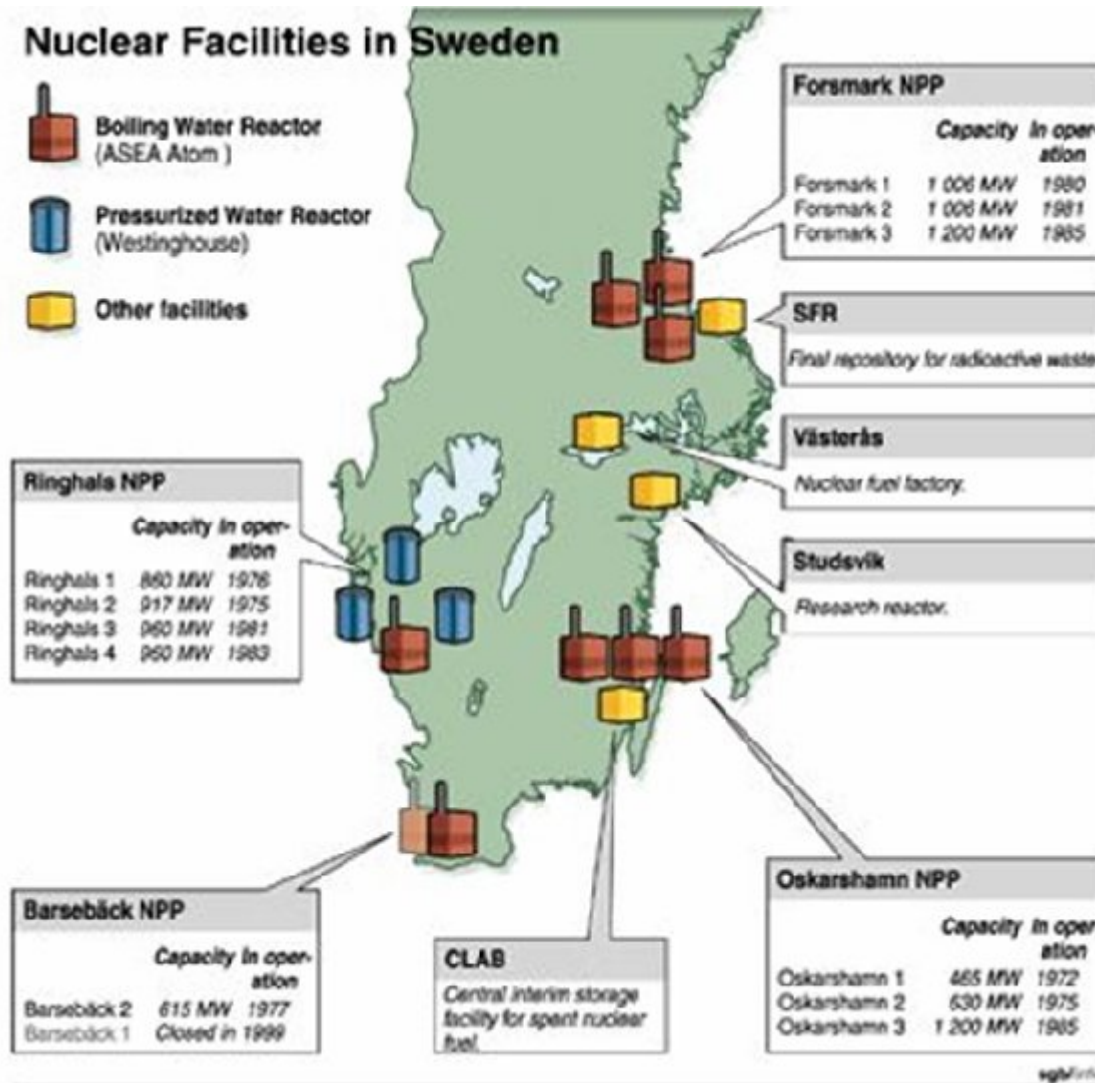
Scientific secretary Eva Simic (Ph.D.)

Assistant secretary Siv Milton

Swedish program for Final Disposal of Spent Nuclear fuel & Nuclear Waste

Swedish National Council on Nuclear Waste

Nuclear Facilities in Sweden



Governmental Authorities

Government / Ministry of Environment

- Grant Licenses & Decides on the Industry's RD&D-programme
- Set the Fee paid to the Nuclear Waste Fund

Nuclear Power Inspectorate, SKI

Radiation Protection Authority, SSI

- Regulations and guidelines, reviews and inspections of nuclear facilities
- Competence-building to review SKB's licence applications
- Neutral information to the public and relevant municipalities

Swedish National Council for Nuclear Waste

- Independent advising committee attached to Ministry of Environment
- No formal role in the licensing process

Board of the Nuclear Waste Fund

Environmental Court

Other Stakeholders

Nuclear Industry (owner of SKB)

Swedish Nuclear Waste Management Co. (SKB)

- Full responsibility for managing radioactive waste and spent nuclear fuel
- Full responsibility for all expenses regarding disposal
- Fees paid to an independent fund

Municipalities

- Central stakeholders in the EIA consultations
- High degree of independence - veto right

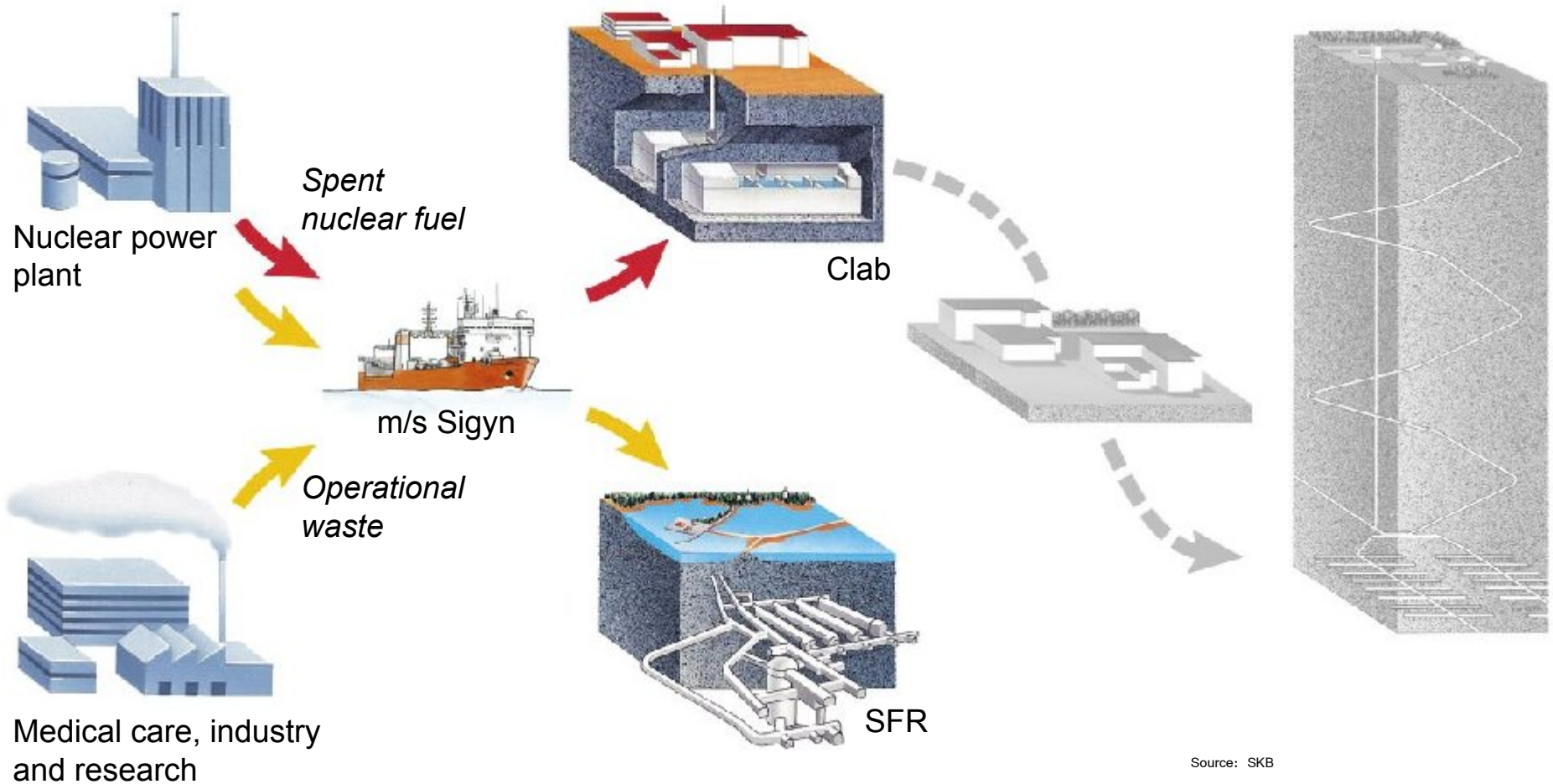
County Administrative Boards

- Coordinates EIA consultations regarding the final repository

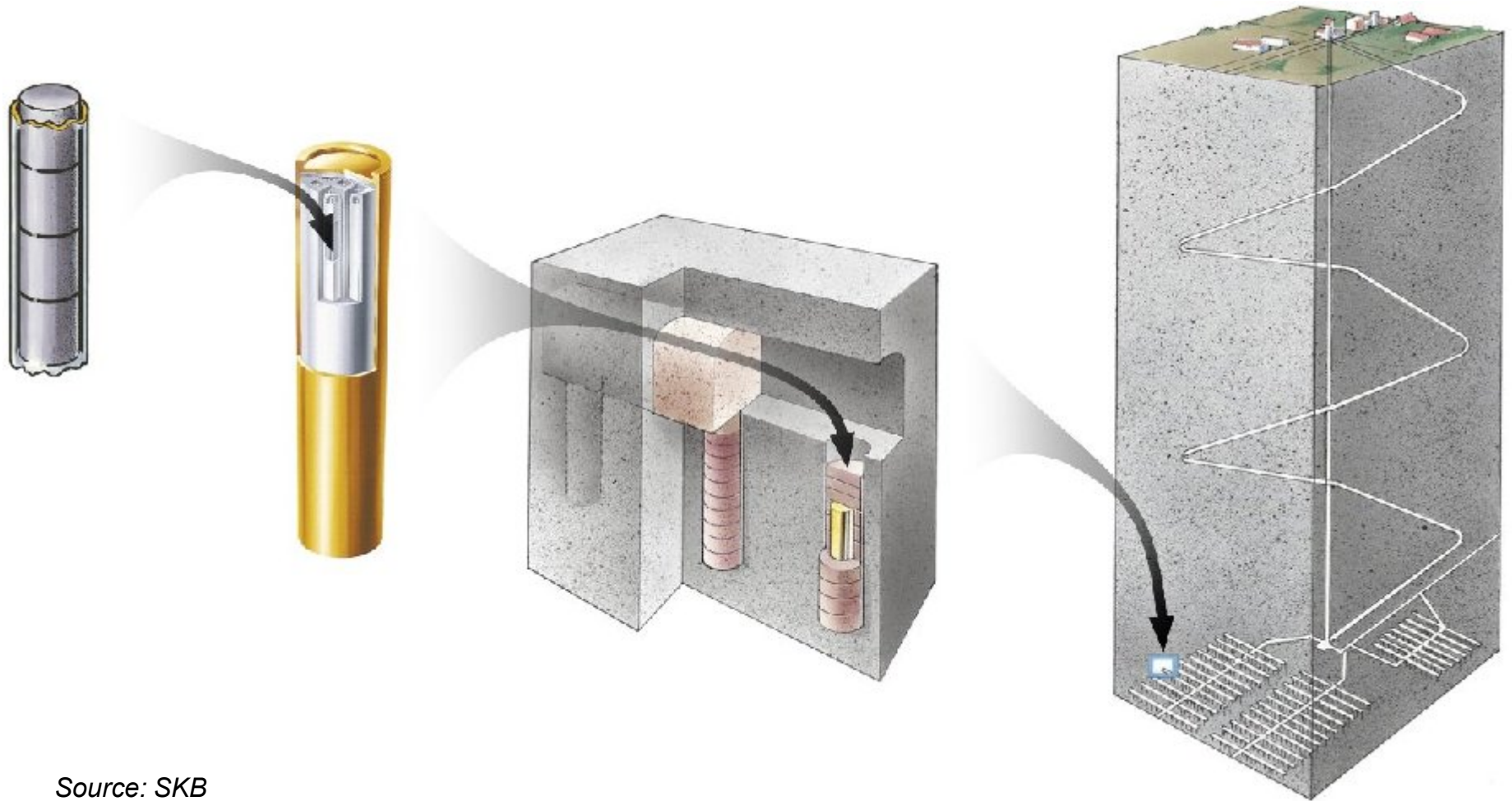
NGO's

- Participates in EIA – consultation process

Swedish Waste Management System



The KBS-3-system

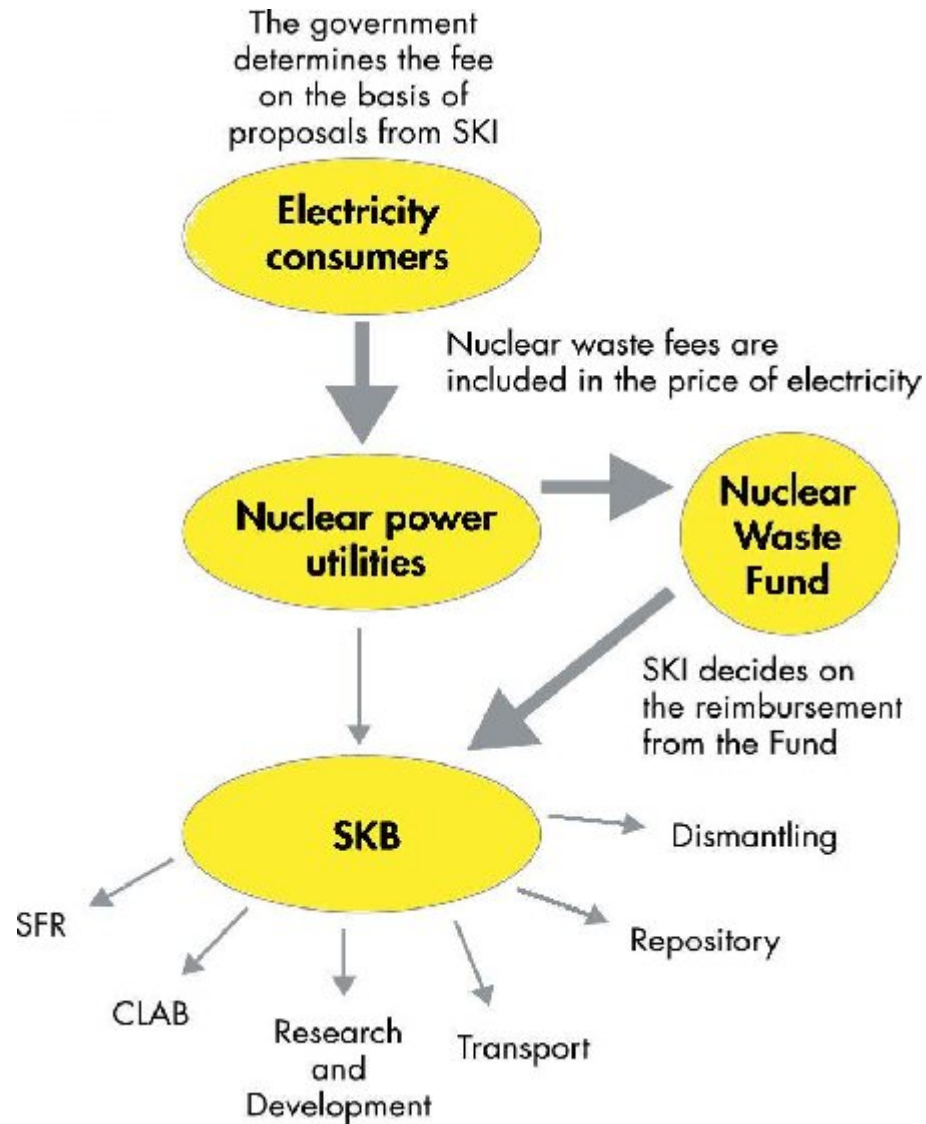


Source: SKB

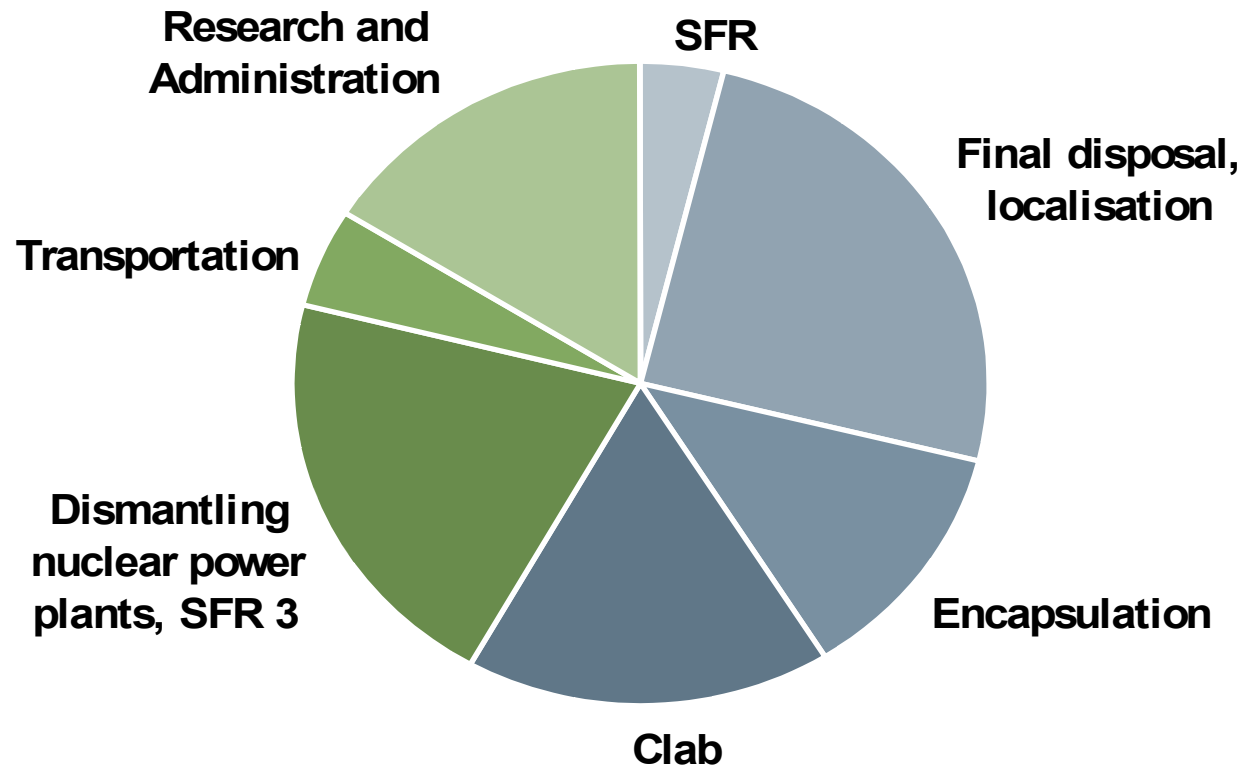
Legal Framework

- **Nuclear Activities Act (SKI)**
- **Radiation Protection Act (SSI)**
- **Environmental Code (Environmental Court)**
- **Financing Act (SKI)**
 - ➔ **Nuclear Waste Fund**
 - Independent from Industry, managed by a Governmental Board
 - Fee set by the Government
 - The Nuclear Inspectorate decides on disbursements
 - Authorities, Municipalities and County Administrative Boards can receive funding
 - NGO's can receive funding

Financing



Total Cost of Around SEK 95 Billion



Final Repository for spent nuclear Fuel Time Schedule

- 2002 - 2007** Site investigations in 2 municipalities
(Oskarshamn & Östhammar)
- 2006** SKB application - encapsulation plant
- 2009** SKB applications - final repository for spent
nuclear fuel
- 2009 >** Licensing process

Requirements in Sweden

- **Clear legal requirements**
 - Clear distribution of responsibilities
 - Work done by nuclear industry
 - Nuclear waste fund - paid by nuclear industry
 - Review and licensing by Government and authorities
 - Open review of RD&D program every 3:rd year
- **Voluntary process - Municipal veto**
- **Stepwise process**
- **National solution, in our generation**
- **EIA - Framework for stakeholder involvement**
- **Openness and transparency**
- **Dialogue**

The Nuclear Waste Council's Transparency Programme

Swedish National Council on Nuclear Waste

Why Transparency?

Decisions of high quality in controversial issues needs

- Neutral arenas where all stakeholders can meet
- High level of knowledge in basis for decisions
- Clear structure for an effective decision-making process
- Authenticity – no hidden agendas
- Unfolding of values and value judgments
- Long-term systematic process to avoid fragmentation

Transparency Programme - Background

- Discussions with stakeholders, 2005 and 2006 on their views about the future work of the Nuclear Waste Council
(Ministry of the Environment, SKB, SSI, SKI, municipalities, county administrative boards, regional councils, NGO's)
- Discussions showed a need for activities by KASAM leading to more transparency in the Swedish NWM programme
- Decision (2006) on a **Transparency Programme**

Transparency Programme

Aim

- Prepare as advisor to the Swedish Government
- Improve basis for decisions
- Resource for all stakeholders
- Contribute to development of NWM in a wider context

Structure

- Identify important issues
- Specify format for dialogues & hearings
- Perform dialogues & hearings – documentation & analysis

Dialogue with all relevant stakeholders

- Feedback on issues and format for dialogue

Basic Elements

- Use of RISCUM Model to support the transparency programme
- Recurrent elements in the programme would be:
 - A clear description of background for the issue being addressed
 - Knowledge building activities
 - A hearing where the KASAM committee members and staff stretch the stakeholders
 - Documentation and analysis of the hearing
- When needed, combine RISCUM with other approaches to citizen participation (focus groups, other forms of working groups)

Transparency Programme

Outline on *what, when & how* issues should be studied (2007-2010)

- ✓ Deep Boreholes (March 2007)
- ✓ Decommissioning of nuclear installations (December 2007)
- Analysis of the system for final disposal (spring 2008)
- Site selection – on what grounds? (June 2008)
- Participation & Democracy (autumn, 2008)
- Actions and Authenticity in NWM (spring 2009)
- Site selection – an evaluation (autumn 2009)
- Authorities regulations and guidance (spring 2010)
- Values, judgments and critical assumptions in the safety case (autumn 2010)

Nuclear Development in Sweden & Site Selection Programme for Spent Nuclear Fuel

Swedish National Council on Nuclear Waste

Nuclear Development in Sweden

Background

- 1945 Atomic Energy Commission appointed
(Civil use of nuclear power)
National Defence Research Institute (FOA)
(Military applications of nuclear power)
- 1947 Atomic Energy Co.
- ~1950 - 60 Research reactors R1 & R2, Ågesta
- 1968 Non-proliferation Treaty
- 1971 First light-water reactor started

Nuclear Development in Sweden

Politicisation & National Debate

- 1972 Critical debate on NP risks and uncertainties
Radioactive Waste Commission appointed
- 1976 General elections; non-socialist Government
(strongly diverging views on nuclear power)
- 1977 Nuclear Power Stipulation Act
(SNF final management with *absolute safety*)
((Nuclear Energy issue > Nuclear waste))
- 1979 Three Mile Island NPP accident
- 1980 Referendum on future use of nuclear power

Nuclear Development in Sweden

Legal Requirements and Waste Facilities

- 1981 Act on financing of future expenses for nuclear fuel
- 1984 Act on nuclear activities
- 1985 Central storage for SNF (CLAB)
(1986 Chernobyl disaster)
- 1988 Final storage for LLW+ILW (SFR)

Geo-Scientific Research Programme 1977-85

A technocratic approach

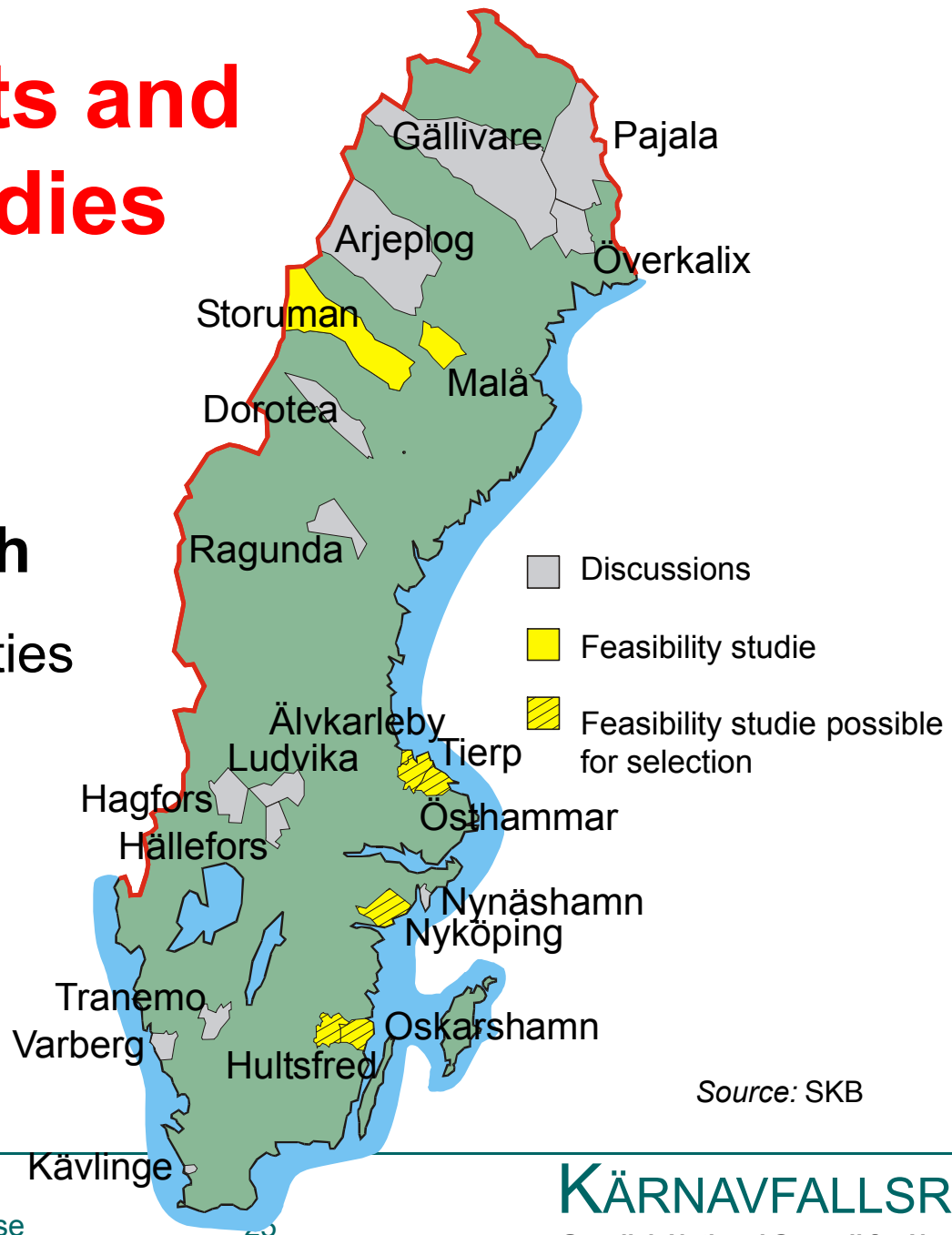
- No dialogue with municipalities
- Increasing local opposition and demonstrations
- Programme forced to stop



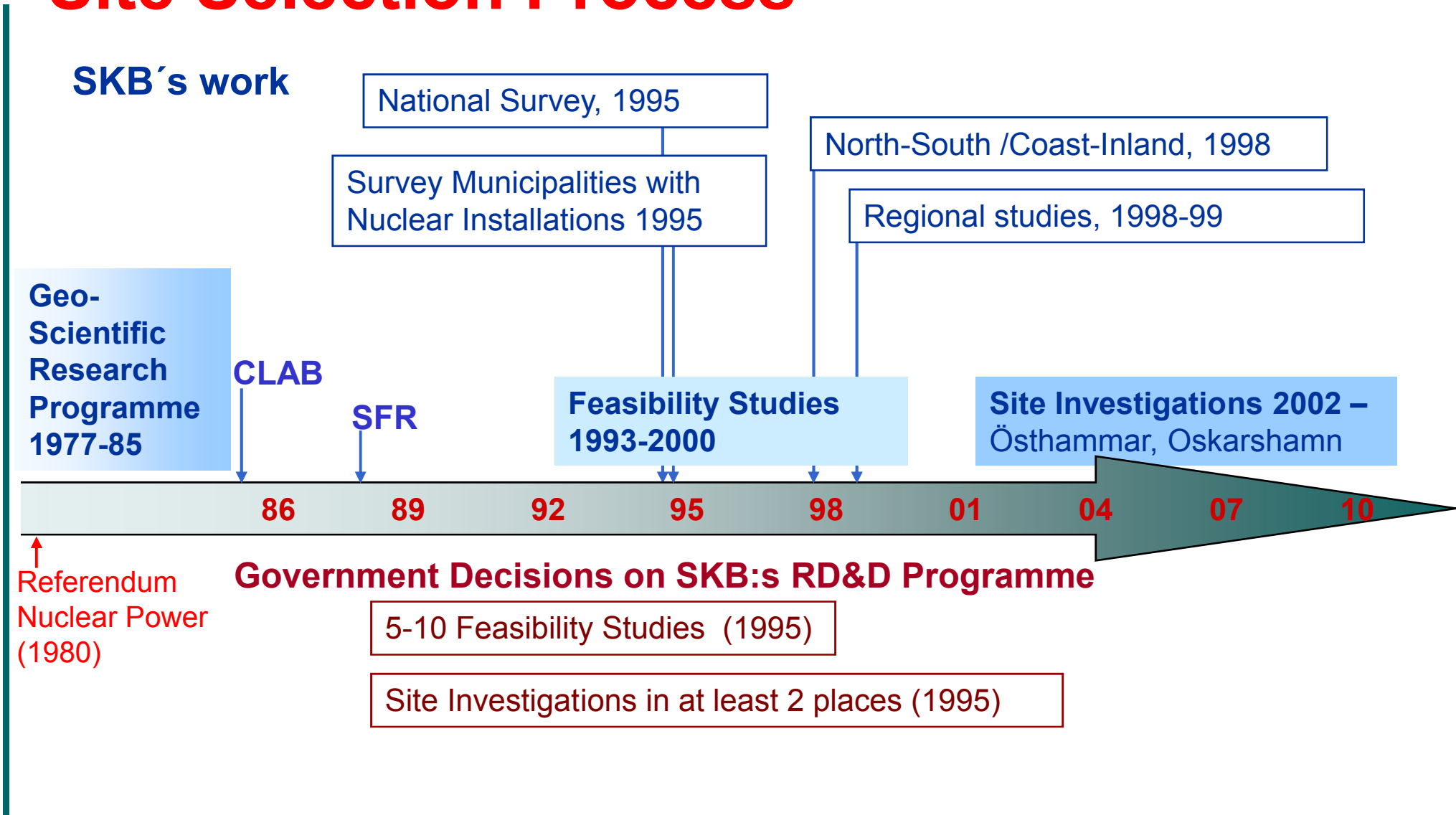
SKB's Contacts and Feasibility Studies 1992 – 2000

A voluntary approach

- Dialogue with municipalities
- Municipal decisions



Site Selection Process



Risk Communication & Management

Swedish National Council on Nuclear Waste

15 Years of Research and Experience in Risk Communication

Dialogue project, 1990-93

RISCOM Pilot project, 1996-98

Oskarshamns model, EIA-Forum, 1994-

VALDOR Conferences, 1999, 2001, 2003, 2006

EU-project: RISCOM II, 2000-03

SKI/SSI hearings, 2001

Guidance on SSI's regulations on final management

(Transparency Forum on EMF (SSI) 2004-2005)

Nuclear Waste Councils Transparency Programme, 2006-

The RISCUM Model

- An approach to increase the chances of an effective democratic process in complex societal decisions
- Stakeholder dialogue are not enough to achieve communicative action
- Advice on developing communications and interactions to give all participants influence and power in the related decision processes

RISCOM

- Three cornerstones:

Facts	from scientific methods, tells us what is true
Legitimacy	what is fair, acceptable, legitimate in society
Authenticity	personal/organisational integrity, identity, truthfulness

- Values in decisions need to be legitimate & authentic
- Transparency is obtained by clarifying facts, the legitimacy of arguments and the authenticity of the different actors

Transparency

In a given policy area, transparency is the outcome of ongoing learning processes that increase all stakeholders' appreciation of related issues, and provide them with channels to stretch their operators, implementers and representatives to meet their requirements for technical explanations, proof of authenticity, and legitimacy of actions.

- Transparency requires a guardian of process integrity
- Transparency requires Communicative Action

Ethical Issues

Swedish National Council for Nuclear Waste

World Commission's Report on Environment and Development, *Our Common Future*, from 1987 (OUP)

The development that meets the needs of the present generation without compromising the ability of future generations to meet their needs. (p. 43)

The Idea of the Rolling Present

- Preserve the gains that our culture and civilisation have made for posterity!
- Maintain our just institutions – and those institutions that maintain justice – intact!
- Pass on to future generations a greater capital, in the form of more knowledge and better developed technology than we ourselves received from previous generations!

(from John Rawls)