



Studsvik

PROJECT SPARE*
- A PROPOSAL

January 2020

*save in Norwegian

BACKGROUND

- Halden closed for fuel experiments 2018
- Minimum fuel PIE in Kjeller beyond 2020
- Unique and high value fuel from HRP risks becoming waste
- HRP currently evaluating inventory of experimental fuel to select which samples are desired to be transported to other labs for future studies.
- Samples available for future projects and research at Studsvik or other labs (if HRP agrees to make materials available)
- Time is short to secure HRP fuel at IFE
 - Agreement between IFE and NND during 2020 on what material shall be kept for research
 - Risk of non-claimed materials treated as waste by NND from 2021
 - IFE and Studsvik in dialog on possibilities for transporting selected samples to Studsvik.
 - Studsvik arranges transports, storage and final disposal
 - IFE available to support limited amount of handling at Halden/Kjeller.



PREREQUISITES – HRP FUEL FROM HALDEN AND KJELLER

- **Transports from IFE to Studsvik**
 - Established route for both Halden and Kjeller
 - Studsvik can accept foreign fuel for research purposes, limited amount fuel/year
 - Quarterly transport windows from Norway to Studsvik in 2020 can be offered

- **Cask availability**
 - IFE's B(U)-cask no valid certificate
 - Studsvik 14 ton cask most cost efficient (max 7 kg U/transport)
 - NCS45 not compatible with Kjeller
 - Agreement between IFE and NND 2020 what material shall be kept for research
 - Non-claimed HRP fuel may end up treated as waste by NND from 2021
 - Studsvik 14 ton cask certificate expires by Dec 2020, update may be possible



OVERVIEW

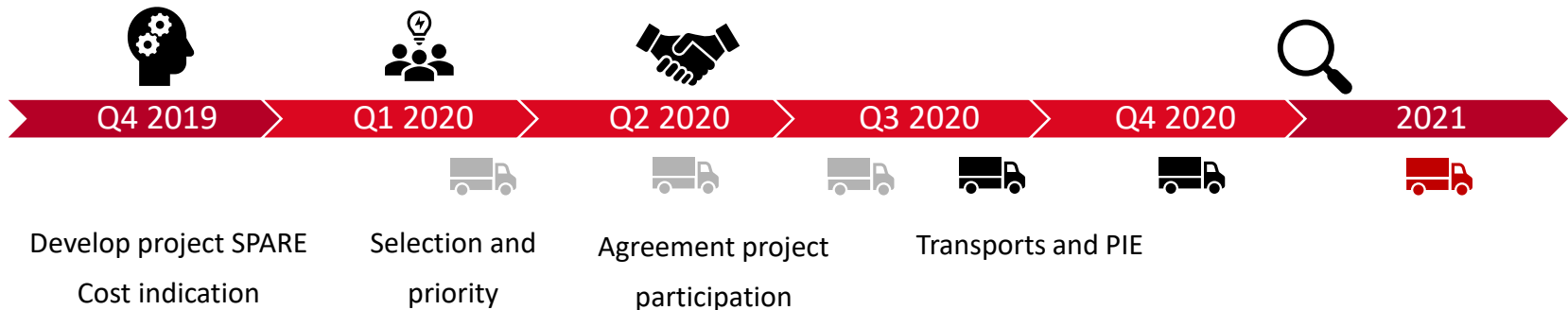
General

- Possibility for saving selected HRP samples from becoming waste by transporting samples to Studsvik.
- With HRP approval, samples may be transferred into other research programs.
- Project management: Studsvik

Scope

- Two transports from Norway to Sweden
- Maximum total amount Uranium 14 kg (~ 28 m fuel rods)
- Storage at Studsvik until 2026 with option to prolong, final storage included.
- Rod/sample condition verification upon reception
 - Visual inspection and gamma scanning suggested. FGR if intact segments.

Estimated total project budget 1 MEUR (excl Studsvik contribution)

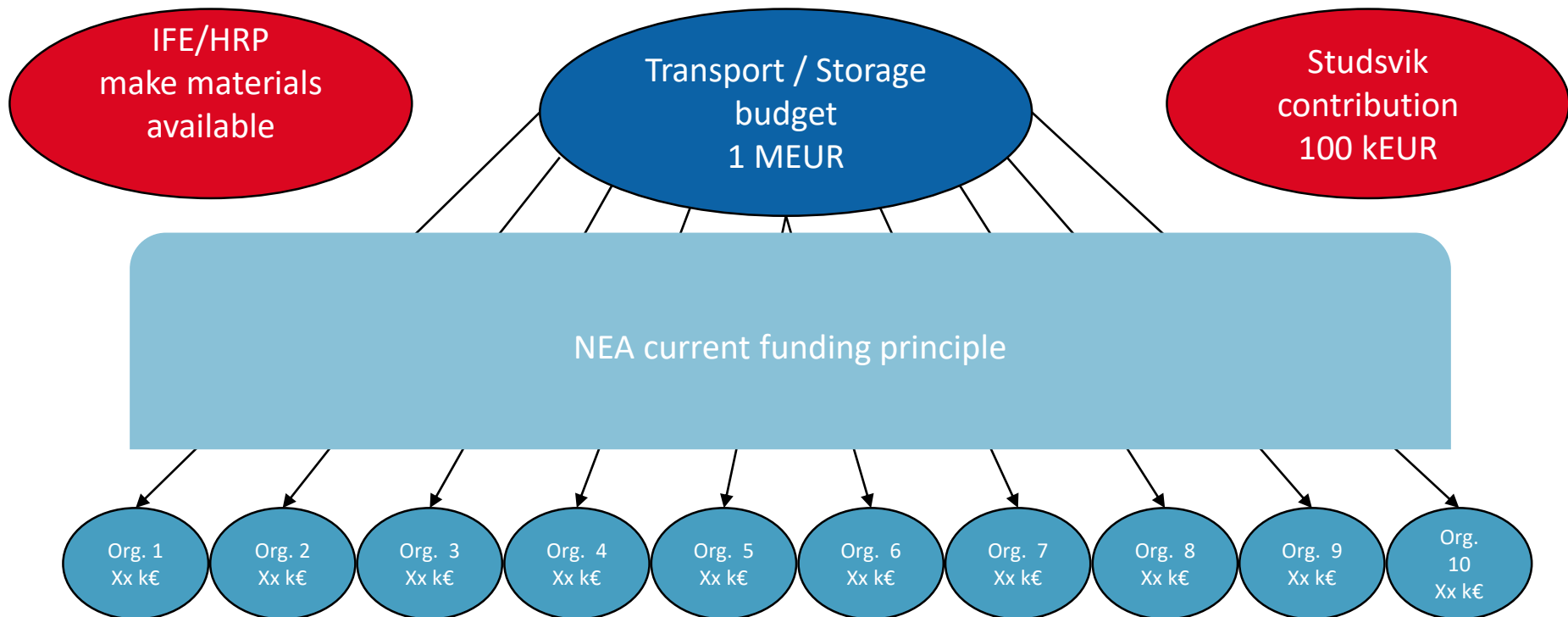


PROPOSED FUNDING MODEL

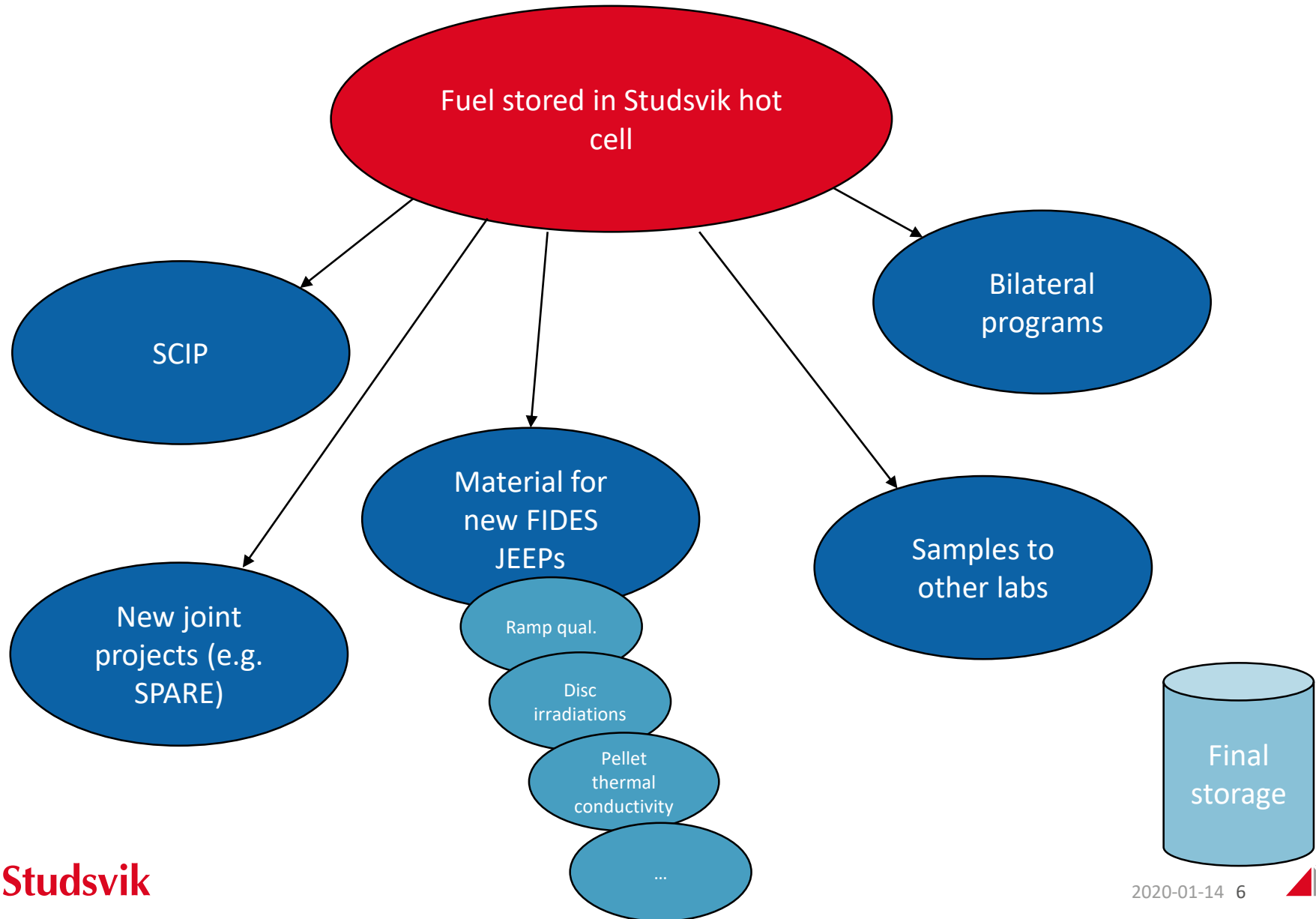
Estimated total project budget 1 MEUR

- The project cost is shared amongst interested organizations
- The cost proposed to be shared according to current NEA funding principles

Example – 10 participating organizations



HRP SAMPLES AVAILABLE TO OTHER PROGRAMS (PENDING APPROVAL FROM HRP)



NEXT STEPS

HRP members

- Feedback to Studsvik on the proposal
- Express interest to participate in SPARE including selection of samples

IFE

- Distributing list of HRP samples within HRP and other joint projects with interest in securing the fuel.

Studsvik

- Develop SPARE project details upon feedback from the nuclear community
- Arrange workshop in Q1 to rank fuel to be saved
- Potential application for extension of Studsvik 14 ton cask certificate, decision required by Q2 2020

Letter of intent or similar from organisations aiming to participate by end of 2020 Q1



WORKSHOP MARCH 12-13

- **Workshop objective:**

- Prioritize what HRP fuel to be saved within SPARE. Determine the time frame for transportation of fuel from Halden/Kjeller to Studsvik and identify ideas for future research.

- **Date and venue**

- The workshop is scheduled for **March 12-13, 2020**, starting at 9.30 and ending at 13.00 the following day. The meeting will be held at the conference center *Citykonferensen* in central **Stockholm, Sweden** (<https://www.citykonferensen.se/en/>).

- **Industry input**

- All organizations interested in being a member of project SPARE are welcome to the workshop. Studsvik expects organizations with specific interests in the HRP fuel to prepare presentations summarizing their priority and motivation. Such presentation can also include ideas of continued research using the HRP fuel.

- **Participation**

- Please indicate the interest from your organization to participate in the workshop before **January 31, 2020** by e-mailing the items below to Carolina.losin@studsvik.com.
 - Planned representatives from your organization
 - Are you attending workshop in person or via web
 - If you intend to make presentation at the workshop





Comments?

Can also be sent to carolina.losin@studsvik.com and terje.tverberg@ife.no

