



Europe and Nuclear: managing the back-end

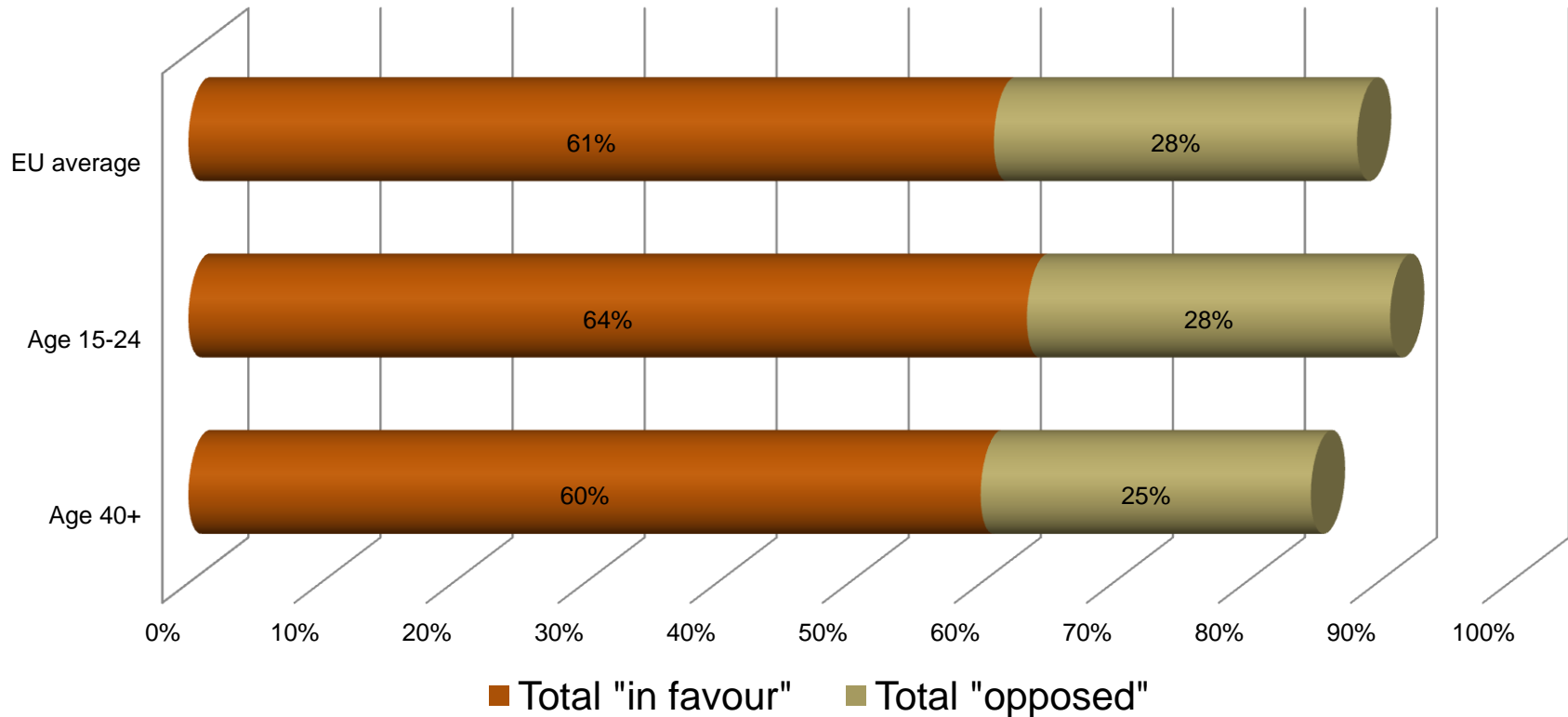
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The Institute of Energy Economics
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A Key to Public Acceptance

Support for Nuclear if Waste Issue is "solved"



source: Eurobarometer, Attitudes towards radioactive waste, July 2008

EU Framework: Directive

COUNCIL DIRECTIVE 2011/70/EURATOM
of 19 July 2011

establishing a Community framework for the responsible and safe management of spent fuel and radioactive waste

2011

- Adoption of EU Waste Directive

Member States responsibility:

“MS shall establish and maintain a national legislative, regulatory and organisational framework”

2013

- Transposition into National Legislation

“MS shall ensure that...”

- regulatory authority
- financial resources
- transparency
- reporting:

2015

- Submission by EU MS of their National Programmes

Aug 23, 2015 for the first time, thereafter every 3 years

deep geological disposal represents the safest and most appropriate end point management of high-level waste and spent fuel considered as waste.”

Directive 2011/70/EURATOM, (in the whereas...23rd)

EU Framework: Implementation



Country / Research	Decision	Expected Start of operation
Belgium «Hades» (Mol)	2011	
Finland «Onkalo» (Olkiluoto)	2001	2020 Olkiluoto
France Meuse-Hte Marne Laboratory	2006	2025 (Selection of the site ongoing)
Germany Gorleben Salt Dome	?	
Switzerland «GTS» (Grimsel Pass)	2008	2040 (Selection of the site ongoing)
Sweden Äspö Hard Rock Laboratory	2002	2023 Forsmark

How to make it?

- **transparency & inclusive stakeholder involvement** (e.g. local communities)

cf. Sweden, Finland, Belgium (LLW), France

- **not just an engineer's decision:**
 - *radioactivity*: "you can't tame it"; "it's for ever", etc.
 - *time*: beyond 1,000 years is out of perception
 - *deep geology*: fears; mythology; banned domain
- **= a catalyst for political action**

Which way to go?

- **spent fuel reprocessing:**

mature technology, can contribute to the sustainable development of nuclear energy (+ breeders)

- **reprocessing in the EU:**

UK: 900 tHM/y, will stop with Thorpe facility closing

France: 1,700 tHM/y (AREVA la Hague)

- up to the task?

- cumulative amount of spent fuel generated in the world by 2020: *almost half a million tHM...*
- economics
- non-proliferation

Key Messages

- **safe and efficient management of radioactive waste and spent fuel**
= **a defining objective** of nuclear industry
- **technical solutions** to safely manage radioactive waste **do exist** and so does the **money** to pay for
- **political will** is needed to implement **the technical solutions** that exist today
- **local stakeholder involvement** is key

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