

# Responsible and safe management of spent fuel and radioactive waste

## The Community framework

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EU/Euratom conference on FISSION SAfety of reactor  
systems

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# EU REGULATORY FRAMEWORK RADIOACTIVE WASTE MANAGEMENT

1957

EURATOM TREATY

"Nuclear Safety Directive"

2009

Responsible and safe management of spent fuel and radioactive waste

"Waste & Spent Fuel" Directive

2011

Revised "Basic Safety Standards"

2013

Amended "Nuclear Safety Directive"

2014

PINC (Art. 40 EA)

1<sup>st</sup> Report on "Waste & Spent Fuel Directive"

2017

2<sup>nd</sup> Report on "Waste & Spent Fuel Directive"

foreseen 2019

# “WASTE & SPENT FUEL” DIRECTIVE (Council Directive 2011/70/Euratom)



## Major challenges addressed:

- Avoid imposing undue burdens on future generations
- Appropriate national arrangements for a high level of safety
- Public information and participation



# DIRECTIVE ON RESPONSIBLE & SAFE MANAGEMENT OF SPENT FUEL AND RADIOACTIVE WASTE

Euratom Directive 2011/70 aims to improve the safety of radioactive waste and spent fuel disposal without undue burden on future generations.



# COUNCIL DIRECTIVE 2011/70/Euratom

European  
Commission

## MEMBER STATES

- Establish national policies
- Have ultimate responsibility
- Establish a national legislative, regulatory and organisational framework
- Establish a competent regulatory authority
- Ensure the licence holders' prime responsibility

Policy

Framework

Programme

Reports

## EUROPEAN COMMISSION roles:

- Guardian of the Treaties
- Legislative initiative
- Ensure compliance with EU regulatory framework
- Facilitate dialogue and cooperation between MS
- Report to other EU Institutions

## COUNCIL OF EUROPEAN UNION role:

- Legislator

## EUROPEAN COURT OF JUSTICE role:

- Jurisdiction

# NATIONAL POLICIES

have to ensure:

AVOID

REDUCE

REUSE

RECYCLE

RECOVER

TREAT

DISPOSE

- Generation kept to the **minimum** which is **reasonably practicable**
- **Interdependencies** shall be taken into account
- **Safely management**, including in the **long term** with **passive safety features**
- **Graded approach**
- **Costs borne by those who generated those materials**
- Evidence-based and documented **decision-making process**

Disposal in the Member State in which the waste was generated, unless an agreement is in force between the Member State and another country to use a disposal facility in its territory

# 1<sup>st</sup> COMMISSION REPORT



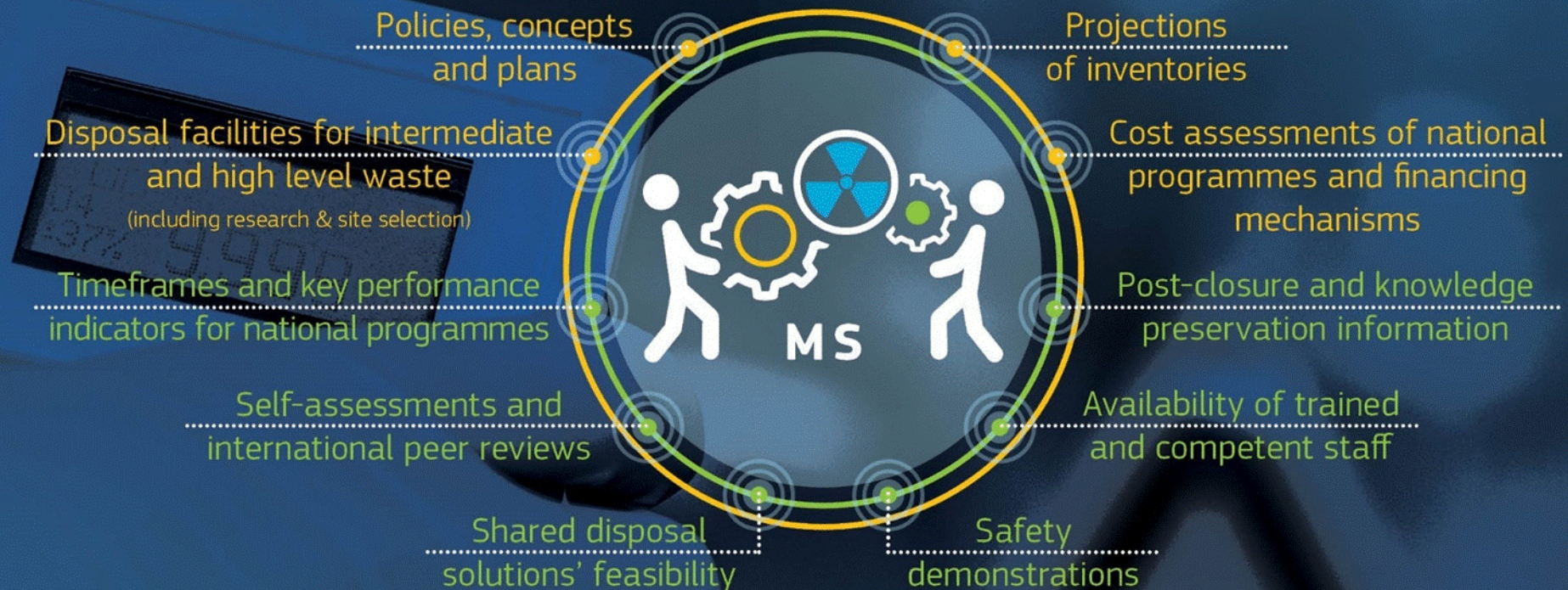
- Provides a **comprehensive overview** to the Council, European Parliament and EU citizens
- Brings the principle of **avoiding undue burden on future generations**
- Recognises MS' efforts and encourage pursuing them in several areas; **policies, cost estimations, financing provisions** and concrete projects for **waste disposal**.

- Main report COM(2017)236  
<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52017DC0236>
- Staff Working Document SWD (2017)159 on MS implementation  
<https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1531085795800&uri=CELEX:52017SC0159>
- Staff Working Document SWD (2017)161 on inventories, prospects  
<https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1531085865514&uri=CELEX:52017SC0161>

# WAY FORWARD

## Different level of implementation by Member States

ADDITIONAL **EFFORTS** & SPECIFIC **FOCUS** NEEDED ON:



# IMPORTANCE OF THE R&D ON THE DIRECTIVE

Member States shall ensure that the national framework (for spent fuel and radioactive waste management):

## Article 5 Obligations (5.2)

- is improved ...taking into account ... **the development of relevant technology and research.**

## Article 8 Expertise and skills

- require all parties to make arrangements for ...**research** and development activities to cover the needs of the **national programme...**

## Article 12 Contents of national programmes (12.1(f))

... shall include:

the **research**, development and demonstration activities that **are needed in order to implement solutions**

# UNDERGROUND RESEARCH LABORATORIES

## RESEARCH AND DEVELOPMENT IN SPENT FUEL AND RADIOACTIVE WASTE ACROSS THE EU

Member States need to establish and implement research, development and demonstration activities to support implementation of the national programmes.

### SWEDEN

Åspö HRL - North of Oskarshamn

Research activities on performance of barriers for spent fuel disposal

Stripa mine - Closed in 1991

Research from 1977 to 1991

### GERMANY

Gorleben - Discontinued in 2013

Salt formation

### BELGIUM

HADES - SCK•CEN site at Mol

Boom clay

### FRANCE

Bure - Meuse/Haute Marne

Callovo-oxfordian clay

Tournemire - Southern Aveyron

Methodological lab

### FINLAND

ONKALO - Eurajoki

Waste categorization

### POLAND

PURL - Planned

Research for Deep Geological Repository

### CZECH REPUBLIC

Planned - To be selected

2030 - Long-term site investigations

### HUNGARY

Planned - Western Mecsek

Planned from 2020 to 2055

### ROMANIA

Planned - Planned

2030 - Sustainability of underground



CLOSED



OPERATIONAL

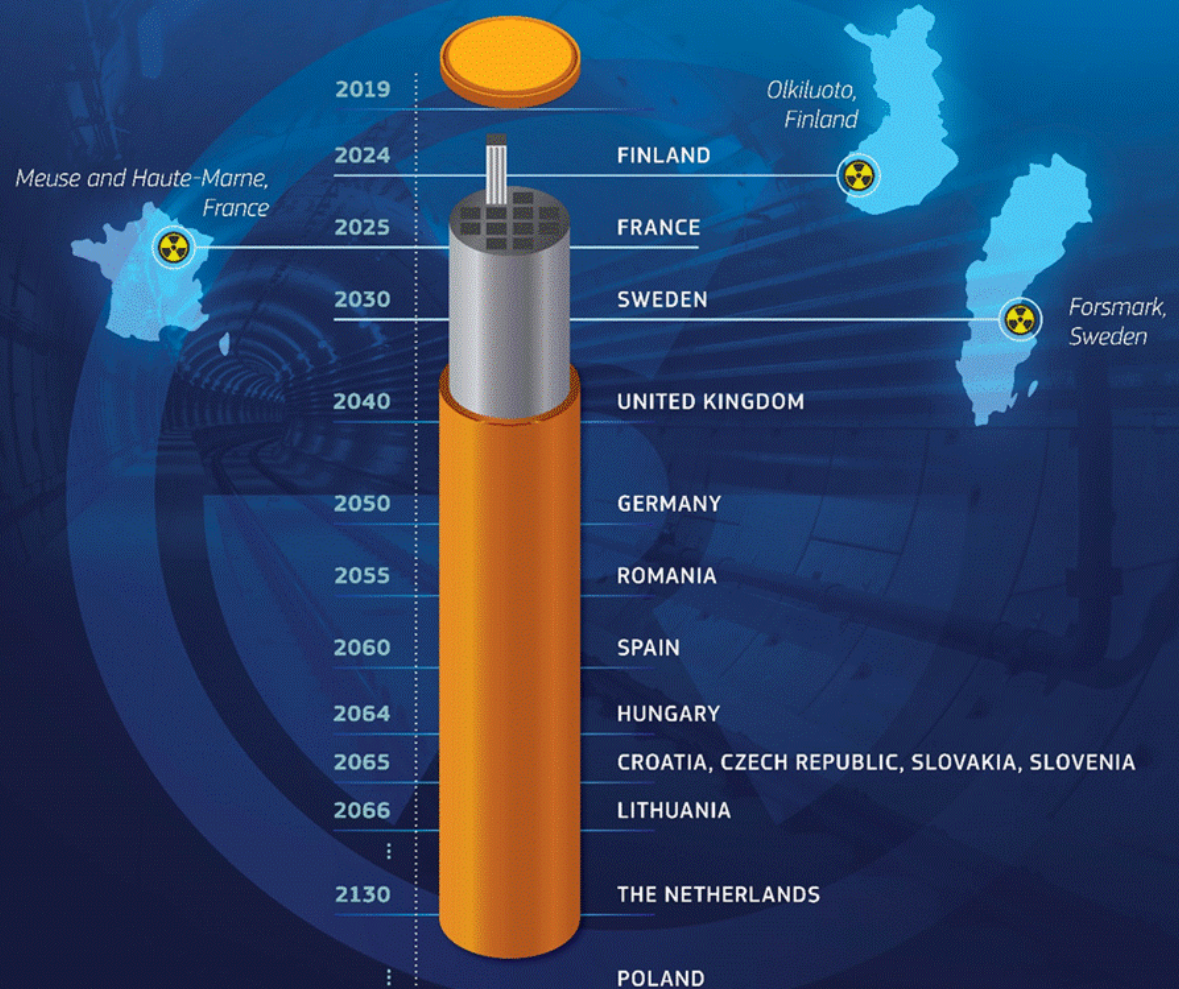


PLANNED  
FACILITIES

# NATIONAL POLICIES

## DEEP GEOLOGICAL DISPOSAL

15 Member States plan to build underground disposal facilities for intermediate and high level waste and spent fuel



# THANK YOU

<https://ec.europa.eu/energy/en/home>