

## COMS-WD

*A new proposal for cooperation  
between member states responding  
to the Waste Directive*

COVRA<sub>NV</sub>

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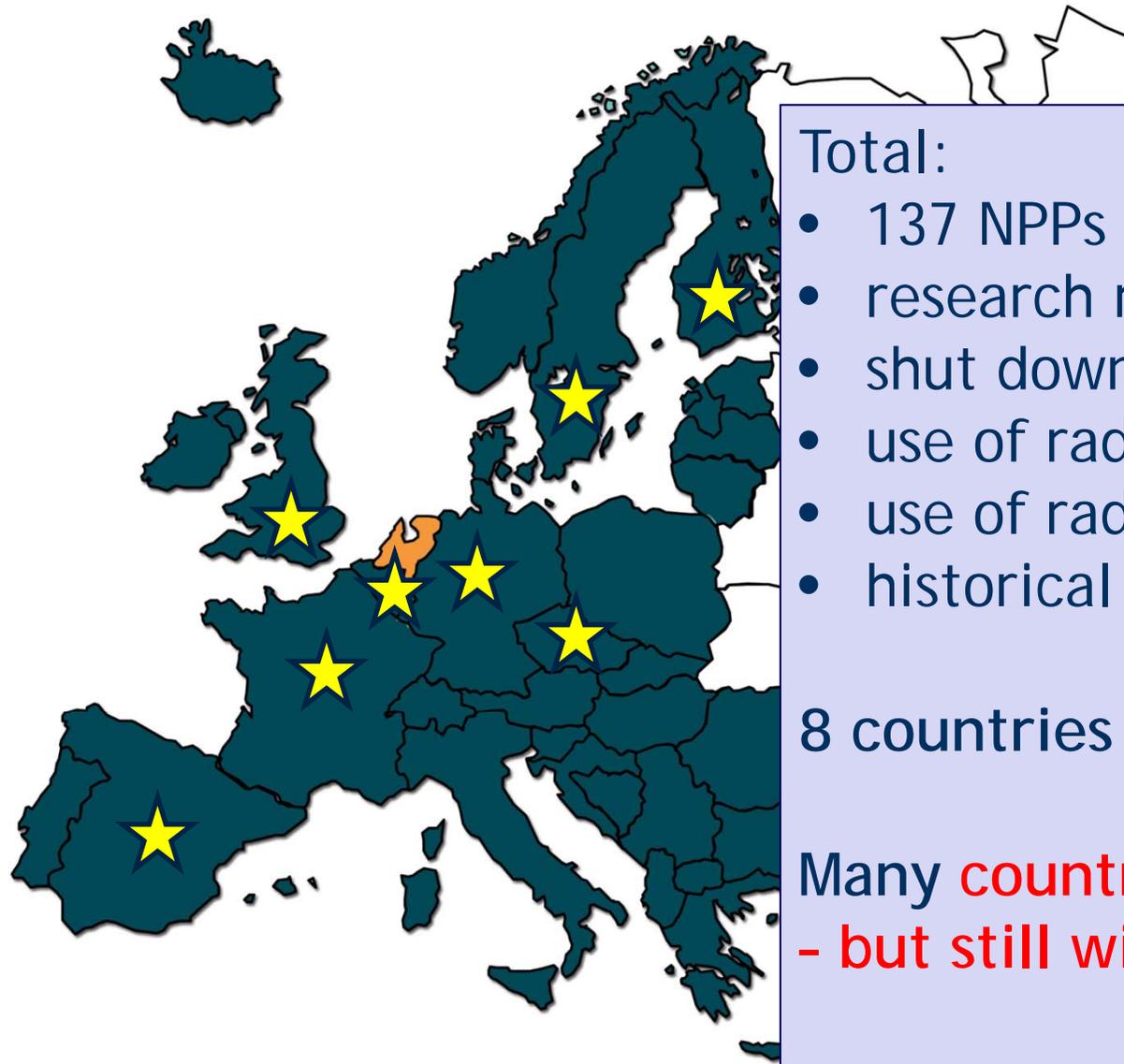
# Content

- Radioactive waste in Europe
- Waste Directive
  - National programme
- Challenges facing EU MS with small RW
- Proposal COMS-WD
- Conclusions

# Radioactive waste in Europe



# Radioactive waste in Europe



Total:

- 137 NPPs
- research reactors
- shut down reactors
- use of radioactive sources
- use of radioactive materials
- historical waste

8 countries with > 2000MWe

Many **countries with NO NPPs**  
- **but still with radwastes**

# Plans for radioactive waste in EU

From IGD-TP Geodisposal June 2014; Davies

## HLW / SF Geological Repository Programmes in the EU

EU State & CH		Austria				Latvia	
Candidate		Belgium	2080	LW 2040		Lithuania	
		Bulgaria				Luxembourg	
Interest in sharing		Croatia				Malta	
Likely interest		Cyprus				Netherlands	2115
Open		Czech Republic	2065			Poland	
Unlikely to share		Denmark				Portugal	
National programme only		Estonia				Romania	2055
		Finland	2022			Slovakia	end 2030s
2025: active programme on geological disposal, for operation within 10-40 years		France	2025			Slovenia	2065
2065: denotes programmes with very long timescales and little R&D activity at present		Germany	2032	Site selection 2032 ILW Konrad 2019		Spain	2050
		Greece				Sweden	2029
		Ireland				Turkey	
		Italy				United Kingdom	2040
		Hungary	2064			Switzerland	2040+

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# Waste directive

Key obligation:

to ensure the establishment, maintenance and implementation of a **National Programme** covering **all aspects** of spent fuel and radioactive waste management from generation to disposal

- National Programmes ready August 2015, 3 year updates

# NATIONAL PROGRAMME

Answer to the questions:

- *“What radioactive waste and spent fuel do you have;*
- *What are you doing/going to do with it; and*
- *When are you going to do this?”*

# NATIONAL PROGRAMME

- Basis is the Inventory **what?**
- WM scheme per waste class **how?**
- Projects with milestones and timing **when?**

# MANAGEMENT OF RADIOACTIVE WASTE AND SPENT FUEL

- organization
- collection
- storage before treatment
- treatment
- interim storage
- disposal

needed for:  
ALL kinds and categories  
of waste and SF

Are we going to have **28** national programmes?  
**YES!**

Are we going to have **28** national disposal facilities??  
**UNLIKELY**

2000

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# The biggest challenge is Geological Disposal

- Nuclear safety and security must be assured - at all future times and globally - Geological Disposal is the only known solution
- But - long timescales to implement, difficult to site, expensive - especially for small inventories
- Small nuclear nations may not have suitable locations, adequate financing or sufficient technical know-how

# Why multinational solutions for geological disposal?

- Neither spent fuel containing fissile plutonium nor HLW nor long lived radioactive wastes should end up in numerous scattered locations
- Fewer, safely constructed and well secured storage and disposal facilities must be the goal
- Available regional facilities may make earlier disposal feasible for small MS

# EU support multinational facilities

- Support of Parliament and Commission
- Support of specific activities
  - SAPIERR I
  - SAPIERR II
  - ERDO-WG (not funded by EC)
- Waste Directive
  - Acknowledged as option

- ★ The 14 SAPIERR working group members
- ★ National disposal programme only
- ★ No formal official policy
- ★ No NPP but some waste for deep disposal



Past and current involvement with ERDO-WG

- Austria
- Bulgaria
- Denmark
- Ireland
- Italy
- Lithuania
- Netherlands
- Poland
- Romania
- Slovakia
- Slovenia

# But many programmes face challenges other than those of geological disposal

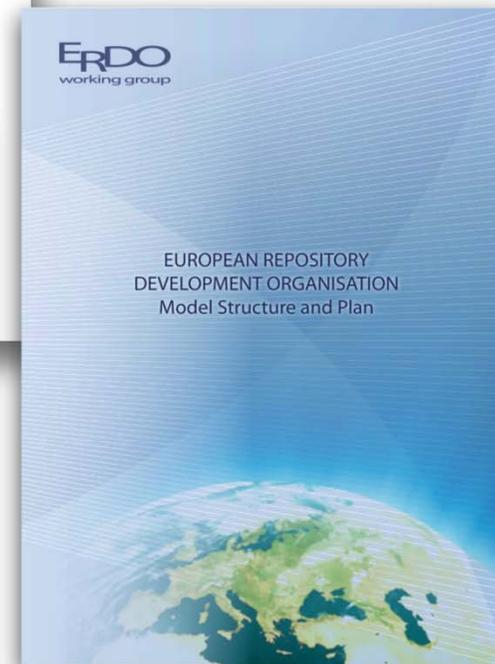
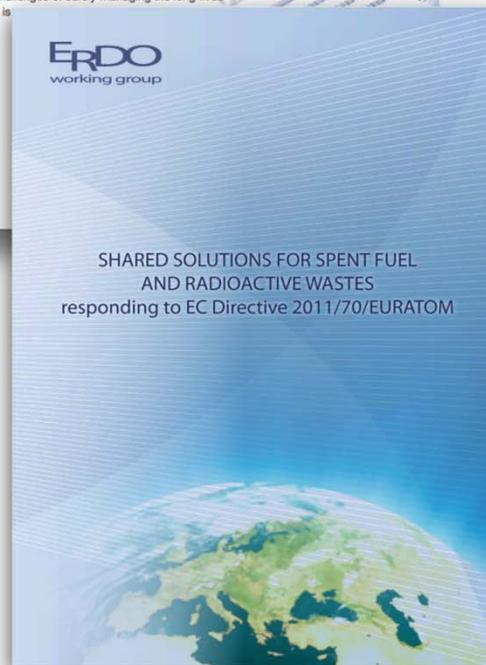
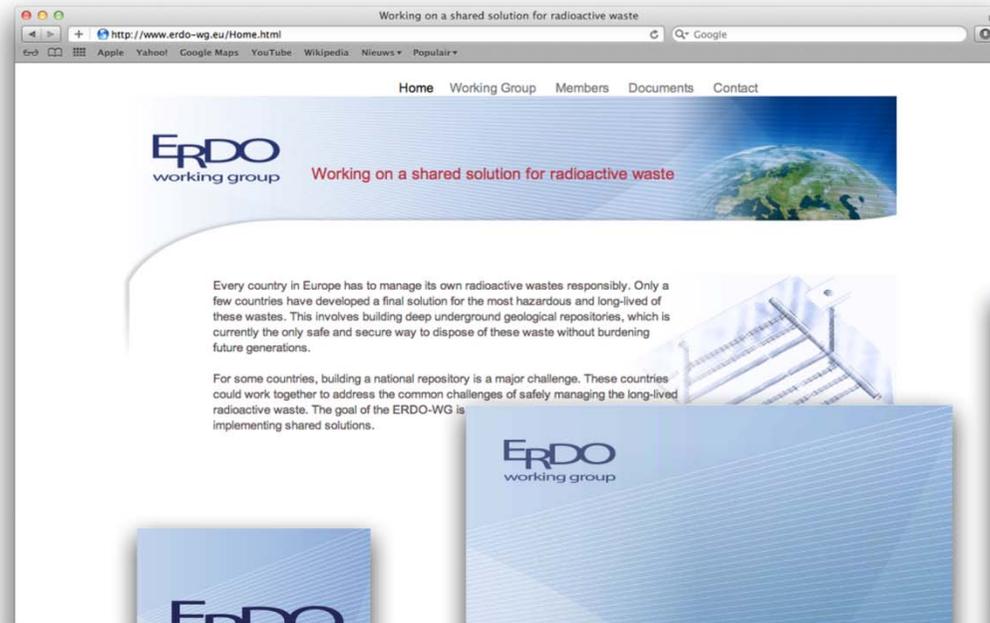
- Their immediate problems are not related to RDD on GD but to meeting the Waste Directive (WD) requirements
- Many aspects of WD are common to (small) RWM programmes
- Cooperation and regular contacts can help

**Hence the development of COMS-WD**

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# COMS-WD: based on earlier work on meeting WD requirements



# COMS-WD Goals

- Assist small MS to meet WD Requirements
- Enhance safe management practices throughout all pre-disposal phases
- Potentially enable safe disposal facilities to be available to all EU countries
  - Working Group meetings
    - Establish dialogue between potential host countries
    - Facilitate technical exchange during production of reports
      - *All travel costs budgeted in order prevent obstacles to attend (as experienced in the past)*

# COMS-WD Proposed Output

Reports (*produced with modest allowance to provide input for small participants that are not designated as national waste management bodies*)

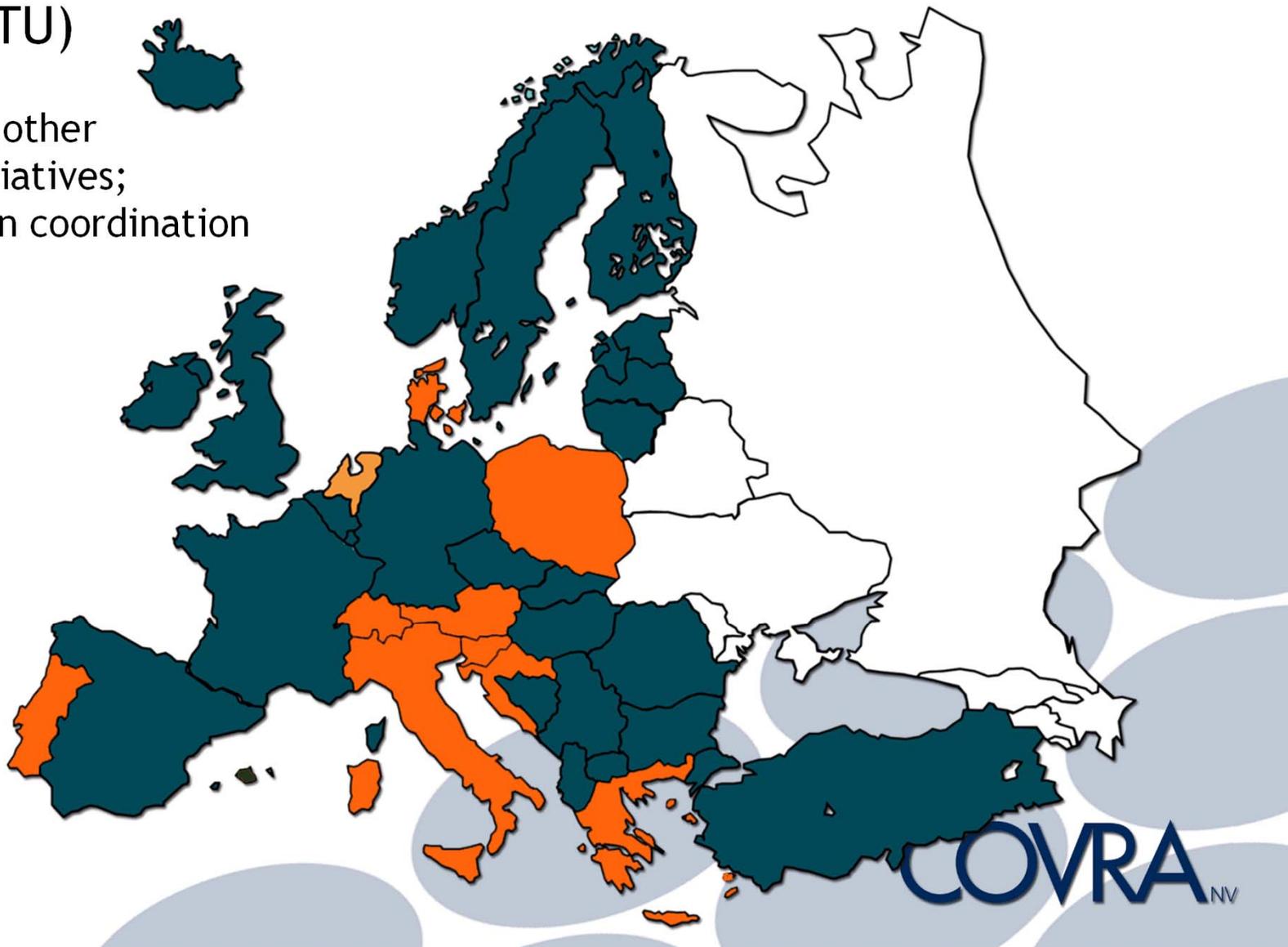
- Waste inventory from
  - all nuclear technology applications;
  - decommissioned nuclear facilities.
- Waste classification
- Regulatory framework for RWM
- Cost estimation and financing structures for implementation of national programmes

# COMS-WD

participating organisations in countries

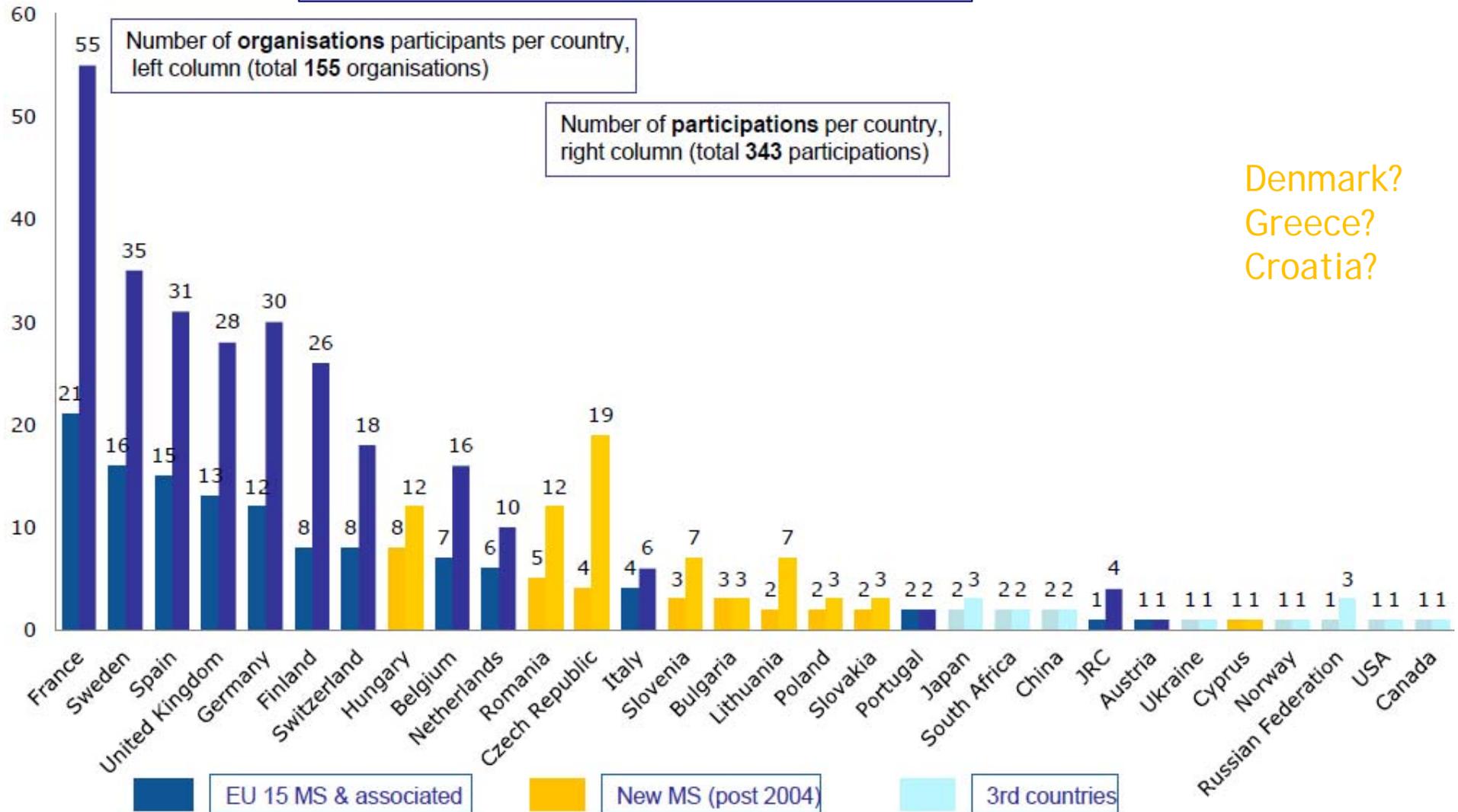
+ EC(JRC-ITU)

- 1) rule out duplication in other EC funded initiatives;
- 2) continuation coordination with other EC projects



# EURATOM FP7 RWM projects

From IGD-TP Geodisposal June 2014; Davies



Denmark?  
Greece?  
Croatia?

# COMS-WD Participants - primarily implementers in small RWM programmes

Participant organisation name	Country
COVRA	Netherlands
ARAO	Slovenia
Ministry of Economy	Poland
Danish Decommissioning	Denmark
Fund for financing the decommissioning of the Krsko NPP	Croatia
Greek Atomic Energy Commission (GAEC)	Greece
Instituto Superior Técnico	Portugal
ENEA	Italy
Bundesministerium für Land- und Forstwirtschaft, Umwelt- und Wasserwirtschaft	Austria
ARIUS	Switzerland
MCM	Switzerland

# EC RWM programmes

- IGD-TP
  - Focus on advanced programmes( cf. Vision Statement)
  - Primarily for MS with large amounts of radioactive waste
  - Aimed at Geological Disposal
  - Advanced topics (e.g. Demonstration Experiments)
- COMS-WD
  - For MS with limited amounts of radioactive waste
  - Includes MS with no NPPs
  - MS States with less advanced programmes into geological disposal of radioactive waste
  - Include all predisposal issues
  - Ultimate possible option - multinational disposal facility

# Conclusions on COMS-WD

- Designed primarily for MS with small RWM programmes
- Complementary to IGD-TP (and JOPRAD) – coordination needed
- EU research proposal devoted to
  - relevant knowledge transfer and exchange between less advanced MS
  - also for MS with no NPPs as yet or with no NPPs planned
    - e.g. Poland, Austria, Denmark, Portugal, Greece
  - potential implementation of governance and stakeholder involvement:
    - Avoid fragmentation and duplication of effort
    - Provide critical mass and leverage of joint effort

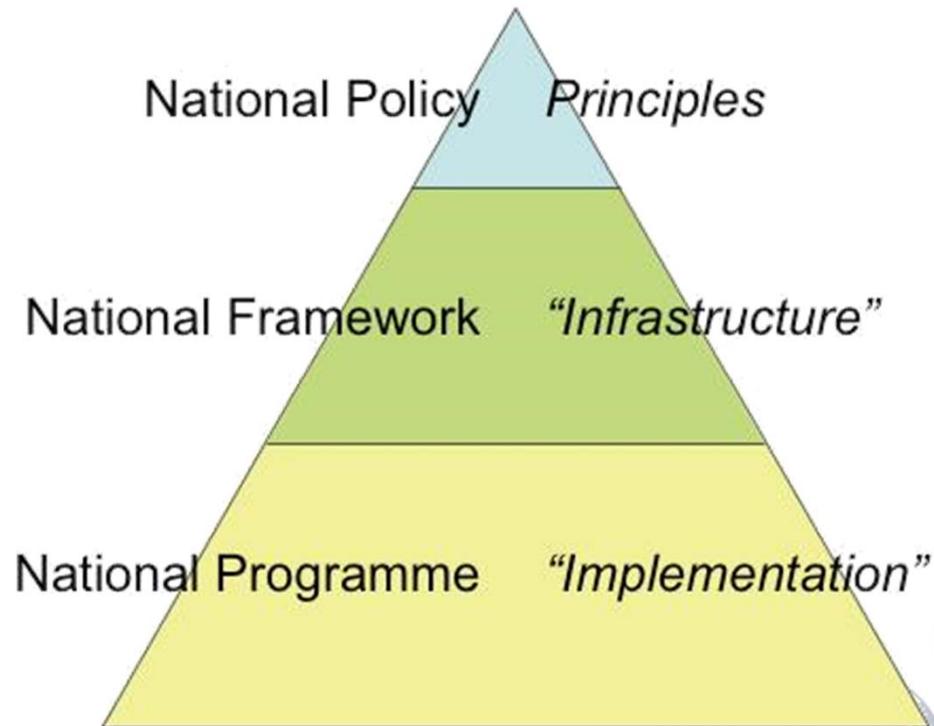
The End - Thank you!



COVRA<sup>NV</sup>

# Waste directive

- MS obligation: WM structure



# Horizon 2020 / Euratom goals

- Support safety of nuclear systems
- Support the development and sustainability of nuclear expertise and excellence in the European Union
- Contribute to the development of safe longer term solutions for the management of ultimate radioactive waste
  - NFRP 4 - 2014: EU concerted development of Member State research on **radioactive waste management**
  - NFRP 5 and NFRP 6 explicitly for Geological Disposal