



**GUIDELINES FOR THE ESTABLISHMENT AND NOTIFICATION OF NATIONAL PROGRAMMES UNDER THE COUNCIL DIRECTIVE 2011/70/EURATOM OF 19 JULY 2011 ON THE RESPONSIBLE AND SAFE MANAGEMENT OF SPENT FUEL AND RADIOACTIVE WASTE**

**“The **NA**tional **PRO**gramme (NAPRO) guide”**

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[http://ec.europa.eu/energy/nuclear/forum/risks/doc/waste\\_disposal/docs/napro\\_guide\\_web.pdf](http://ec.europa.eu/energy/nuclear/forum/risks/doc/waste_disposal/docs/napro_guide_web.pdf)



- **National Programmes turn planning and “infrastructure” into practice ->  
Key in implementation of the Directive**

**Notification deadline to the Commission: 23 August 2015**

- **European Nuclear Energy Forum (ENEF) Work Group Risk established a Working Group for drafting the NAPRO Guide.**

**Purposes,**

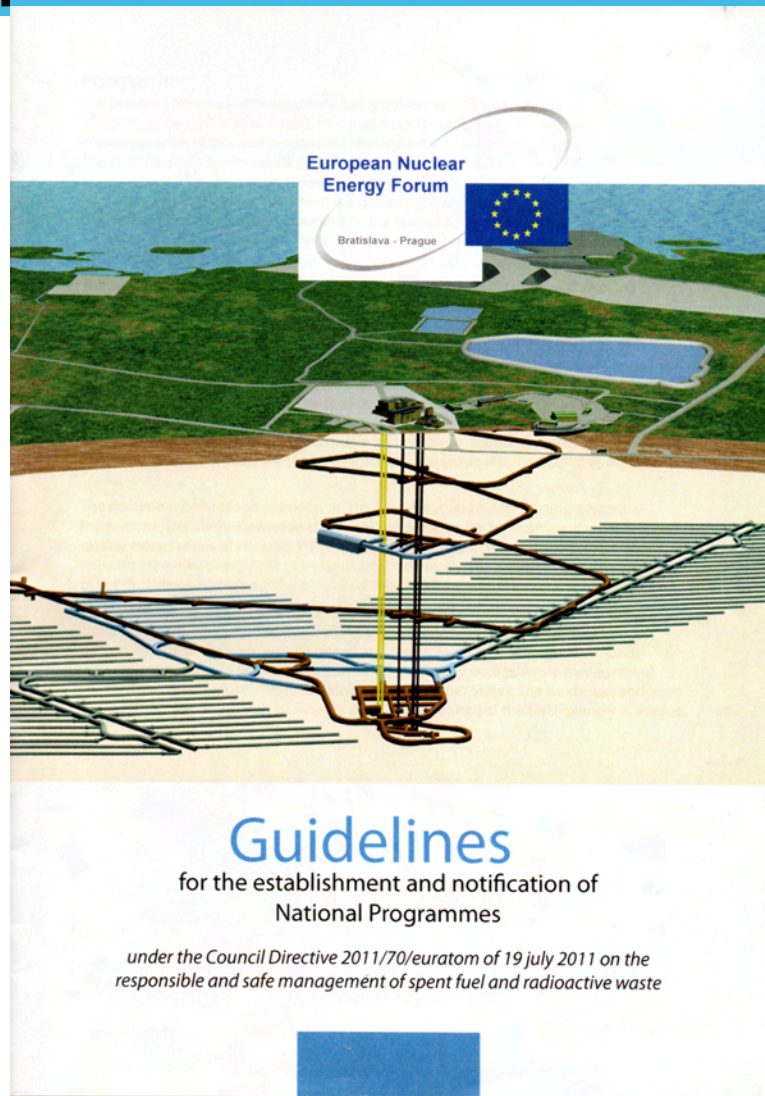
- **Key reference for common understanding amongst national actors,**
- **Information to interested groups, and**
- **Support in notifying the National Programmes to the Commission**
- **....**



□

## 2. OBJECTIVE OF THE GUIDE

The objective of this Guide is to provide a **descriptive**, but non-exhaustive **tool to Member States** to assist in the establishment, documentation, communication and notification of National Programmes for the safe and responsible management of spent fuel and radioactive waste, which **(i)** satisfy both the needs of national actors and **(ii)** the requirements of the Waste Directive. It also **(iii)** assists the Commission in the review of National Programmes.



- **Main Text (13 pages)**
- **Details in the Annexes (7 pages)**

▪ **Secretarial support by the Commission**  
**DG ENER and DG-JRC-ITU**

▪ **Endorsed by**  
**ENEF Working Group Risk**  
**30 January 2013, and**  
  
**presented at the**  
**ENEF plenary in Prague,**  
**30-31 May 2013.**

▪ **ANDRA (FR)**  
**AREVA (FR)**  
**CEZ (CZ)**  
**COVRA (NL)**  
**ENRESA (ES)**  
**ESTONIAN Min. Env. (ET)**  
**FORATOM (BE)**  
**GNS (DE)**  
**NDA (UK)**  
**NIRAS-ONDRAF (BE)**  
**NNF (SK)**  
**POSIVA (FI)**  
**SKB (SE)**  
**SOGIN (IT)**  
**TVO (FI)**

▪ **Peer character**  
  
**Not legally binding**



## Waste Directive Structure:

- Introduction
- Recitals (“Whereas”)
  - References to other Directives, Recommendations, Agreements, ..
  - Explanations and statements (also legally valid)
- Chapter 1
  - Article 1 “Subject Matter”
  - Article 2 “Scope”
  - Article 3 “Definitions”
  - Article 4 “General Principles”
- Chapter 2 Obligations
  - Article 5 “National Framework”
  - Article 6 “Competent Regulatory Authority”
  - Article 7 “License Holders”
  - Article 8 “Expertise and Skills”
  - Article 9 “Financial Resources”
  - Article 10 “Transparency”
  - Article 11 “National Programmes”
  - Article 12 “Contents of National Programmes”
  - Article 13 “Notification”
  - Article 14 “Reporting”
- Chapter 3 Final Provisions
  - Article 15 “Transposition”
  - Article 16 “Entry into force”
  - Article 17 “Addressees”



Waste Directive Structure:

**Article 12.1 “Contents of National Programmes”**

- **National Policy**
- **Milestones and Timeframes**
- **Inventory**
- **Concepts or Plans and Technical Solutions from Generation to Disposal**
- **Concepts, Plans for the Post-Closure Phase**
- **Research, Development & Demonstration Activities**
- **Responsibilities, Performance Indicators**
- **Cost Assessment**
- **Financing Scheme**
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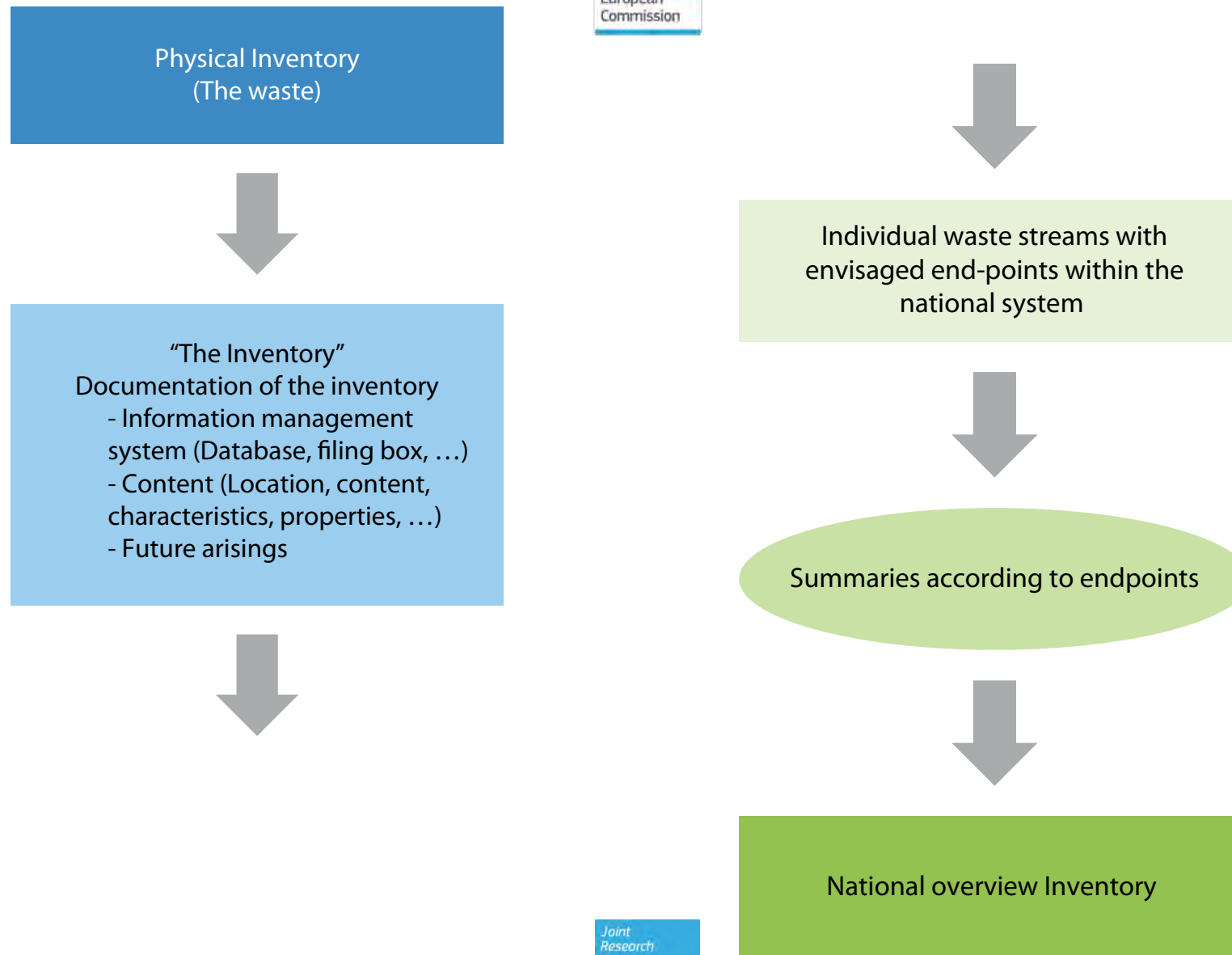


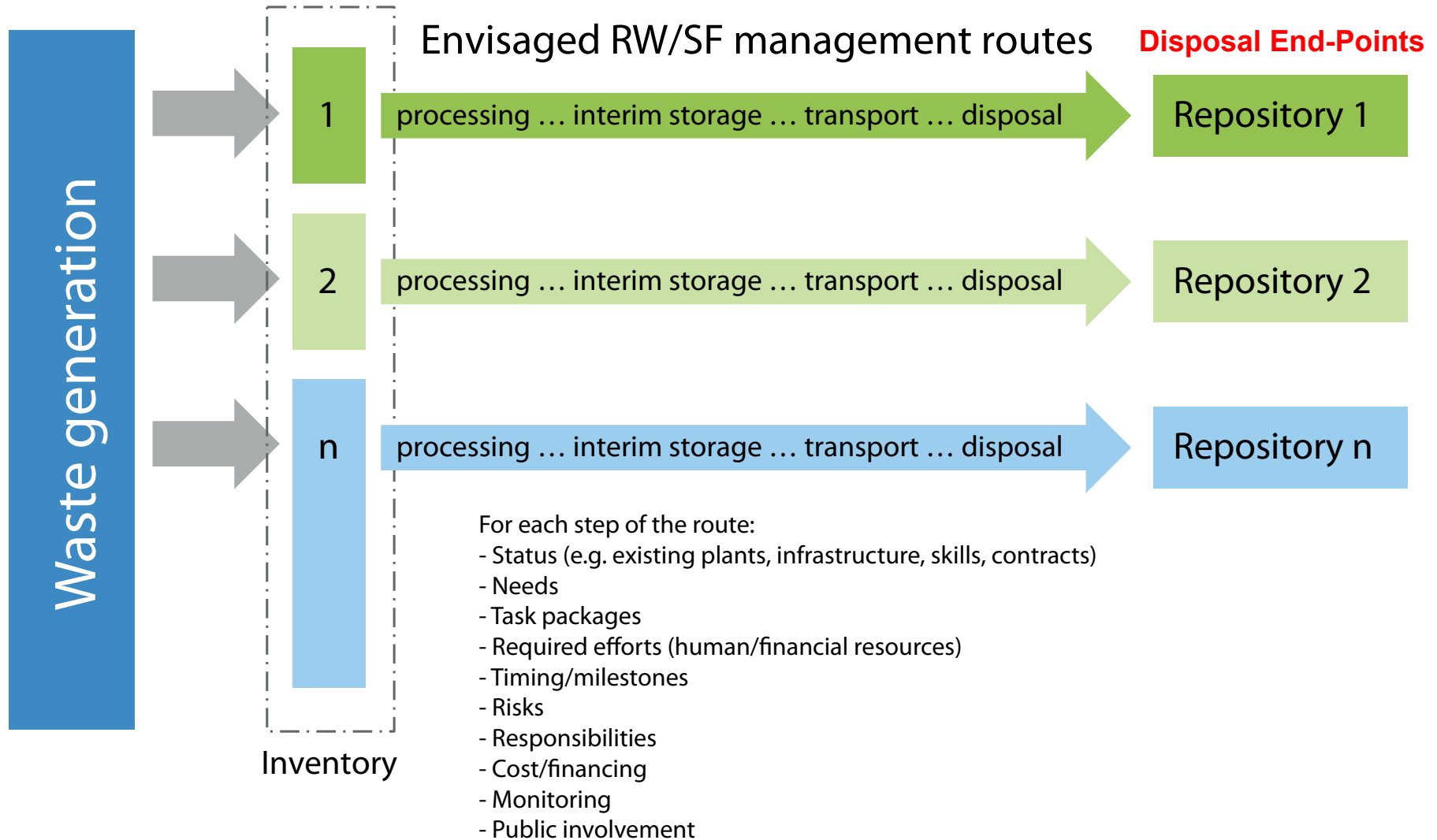
## Article 12.1 “Contents of National Programmes”

- 
- **National Policy** Article 4, and
- **Milestones and Time** (20) The operation of nuclear reactors generates spent fuel. Each Member State remains free to define its fuel cycle policy. The spent fuel can be regarded either as a valuable resource that may be reprocessed or as radioactive waste that is destined for direct disposal. Whatever option is chosen, the disposal of high-level waste, separated at reprocessing, or of spent fuel regarded as waste should be considered.
- **Inventory**
- **Concepts or Plans at**
- **Concepts, Plans for the Post-Closure Phase**
- **Research Development & Demonstration Activities** (20) Scientific research and  
**Article 9, Financial resources**  
 Member States shall ensure that the national framework require that adequate financial resources be available when needed for the implementation of national programmes referred to in Article 11, especially for the management of spent fuel and radioactive waste, taking due account of the responsibility of spent fuel and radioactive waste generators.
- **Financing Scheme** fuel and radioactive waste, as well as contribute to reducing the risk of the radiotoxicity of high-level waste.
- **Transparency Policy or Process**
- **Agr** Article 10, Transparency











## **Article 12 “Contents of National Programmes”**

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### National Policy (*General principles (Article 4)*)

Depending on the magnitude of the programme, it will include aspects such as:

- The principle for reduction of radioactive waste generation
- Fuel cycle policy (reprocessing vs. direct disposal, participation in R&D projects on advanced technologies, ..)
- Role and duration of storage
- If applicable, role of reversibility and retrievability
- **Role of shared solutions**
- **Contingency planning**
- **Waste ownership/responsibility**
- **Decision making process**



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## Milestones and Timeframes

- **Timely ordering towards the end-points.**
- **Interim targets.**
- **Check points.**
- **Decision point character (avoid impression of pre-empting decision-making)**
- **With respect to disposal projects:**
  - **strongly influenced by socio-political processes, and possibly also by**
  - **scientific-technical and geological findings.**



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## Inventory

**The inventory should be exhaustive and include a sufficiently broad set of information for spent fuel and radioactive waste such as:**

- **Radionuclide content, and if applicable, associated heat generation;**
- **Amount, composition, chemical and physical form, as well as possible chemical, physical and other risks;**
- **Location, including if presently stored abroad;**
- **The origin and history, including previous and present “owners”;**
- **Plans and time schedules for receiving waste returned from abroad;**
- **Plans and time schedules for returning waste to an owner in a different country;**
- **Estimations of future arisings; and**
- **Classification in accordance with management and disposal routes within the National Programme.**



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**For the steps in the waste management routes**

- Gap analysis;
- Status of accessibility of concepts and technical solutions;
- **Shared developments and solutions;**
- **Roadmaps for development and co-operation;**
- **Back-up solutions; and**
- Optimization in terms of safety (short and long term), radiation protection and/or reduction of waste generation.



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Commensurate with the proximity of closure:

- Concerned **National Policy** or legislation;
- Transmitting to future generations knowledge, awareness and eventual interventions. (e.g. markers, archives, public information);
- Active institutional control measures;
- Time period for planned institutional control measures:
- If applicable, concepts and technical solutions for post-closure waste recovery; and
- **Responsibilities and ownership.**



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**Plans for continuing RD&D:**

- Improving waste characterization,
- Reduction of waste generation and overall safety,
- Improved disposal implementation;
- .....

**RD&D gap analysis based on experience and operational feedback, making use of competence networks and platforms, reviews and international developments.**

**To meet identified needs:**

- Own investigations at a national level;
- Joint RD&D on bilateral and/or multinational level, including European framework programmes;
- Contracting/acquisition of RD&D.



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**National actors with specified responsibilities typically are:**

- **Government(s) (national, federal, regional, local as nationally applicable);**
- **Parliament (s) (national, federal, regional, local as nationally applicable);**
- **Regulator/inspectorate;**
- **Licence holders;**
- **Research organizations;**
- **Waste management organisation(s).**

**Set out responsibilities for different waste streams,  
including each step and task of the individual management routes**

**=>**

**Thereby, primary responsibility with those who have generated the waste.**



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### Performance indicators:

- **Measure progress towards targets and compliance with operational goals (e.g. achieving public trust, responsible use of financial resources).**
- **Capture:**
  - **Elements critical for successful implementation**
  - **Individual waste management steps.**
- **Cover:**
  - **Safety,**
  - **Environmental aspects,**
  - **Financial aspects, and**
  - **The timely achievement.**
- **Regular monitoring -> assist effective implementation management.**



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- **Basis for the selection and application of the financing scheme.**  
**Methodologies vary considerably both within and between countries, making comparison difficult ->**

**Clearly define:**

- Underlining hypotheses,
  - Inputs and boundary conditions
  - Time periods between re-assessments, and
  - Methodology for refinement.
- 
- **Set out all essential assumptions, such as:**
    - Purpose of the cost estimate,
    - Reference date,
    - Exchange rates,
    - Discounting rates, and
    - Contingencies.



## ■ Cost Assessment (cont.)

In principle cover all identifiable costs related to each element and step of the National Programme, including cost profile over time:

- Relevant investments,
- Financing costs,
- Operational costs,
- Post-closure costs,
- Regulatory control,
- Maintenance,
- RD&D,
- Development of competences and skills,
- Public involvement,
- .....

**Joint Repositories:**  
**Different cost estimations for the two “dual tracks”,**  
**Different parallel time-schedules,**  
 ..... ?

The level of detail should correspond to the stage of individual projects or activities



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- **Financing is directly related to cost assessments.**

**Set out in particular how the cost are to be covered, for example from:**

- **Established provisions,**
- **Funds,**
- **Operational budgets, or**
- **Public resources.**

**Include remediation and legacy management.**

- **Regularly reassess adequacy, availability and security of financing against developments in the political and financial area, as well as the real and committed expenditure scenarios**

**Clear understanding of who pays for what, how much and when.**





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■ □ Transparency needs systematic implementation at an early stage.

□ **Joint Repositories: Who is the public?**

The National Programme should in particular describe:

- Legal provisions ensuring public information and participation;
- How public has access to information;
- Responsibilities for providing information;
- Steps and activities where the public is involved in decision making;
- How the public is informed about their possibilities to participate;
- Provision of resources for public to participate;
- How effectiveness is assessed;
- How the views brought forward during public involvement are reflected in the decision making process.



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■  
□  
**Examples of agreements to be included are intergovernmental agreements covering services such as reprocessing for spent fuel, conditioning activities for radioactive wastes, packaging or temporary storage, return of sealed sources, etc.**

□  
**Key issue for joint disposal solutions**

**For each agreement, the National Programme should set out:**

- **Scope;**
- **Duration and time schedules;**
- **Conditions and responsibilities;**
- **Materials, quantities and services involved;**
- **Relationship to the National Programme; and**
- **Reference to the text of the agreement.**



- **Article 12.2:**  
***“The national programme together with the national policy may be contained in a single document or in a number of documents.”***

- **NAPRO Guide makes proposal for “Lead Document”:**

**Could be helpful in order to:**

- **Present a coherent overview of the National Programme and its context;**
- **Communicate the National Programme to national stakeholders and promote common understanding; and**
- **Support notification of the National Programme to the Commission**

**Annex VI “Proposed Generic Structure of Lead Document”**



## QUALITY INDICATORS FOR NATIONAL PROGRAMMES

... include, amongst others, that the programmes are:

1. **Fit to national needs,**  
following a graded approach as to safety, whilst taking account of the Member State's waste inventory,
2. **Comprehensive,**  
covering all materials covered by the Directive as well as all necessary aspects and activities,
3. **Up-to-date,**  
taking into account relevant new national and international political, technical and socio-political developments and findings in line with the concept of continuous improvement,
4. **Credible,**  
demonstrating a clear intention and commitment to tackle challenges in a comprehensive and timely fashion and demonstrating that the intra and inter-generational responsibility is respected by implementing activities without undue delay,



## QUALITY INDICATORS FOR NATIONAL PROGRAMMES (cont.)

5. **Convincing and plausible,**  
comprising realistic and consistent steps leading to the envisaged endpoint, including the availability or development of competences and resources, the evaluation and management of planning risks to minimise delays, as well as taking due regard to societal factors,
6. **Measurable and controllable,**  
including clear decision points, also providing, if required, flexibility in order to respond to policy changes or unexpected developments,
7. **Transparent,**  
accessible to all stakeholders except where this would compromise safety, security or justified economic interests,
8. **Traceable,**  
comprising evidence based documentation of decision making and implementation,
9. **Timely and adequately resourced,**  
including provisions for financial and other (staff, competence, knowledge, information, ...) resources, when needed.



□ **The NAPRO Guide:**

- **Peer document**
- **Elaborates on National Programmes (establishing, implementing, documenting and communicating)**
- **Focuses on Art. 12.1**

**Feedback is welcome at any time**

**For joint disposal solutions: There are topics that may benefit from some additional analysis**