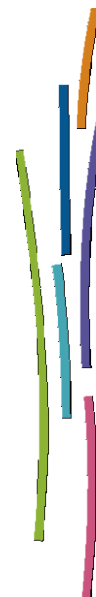


# Benefits of Joint Programming for RW French program

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**General Directorate for Energy and Climate  
Change**



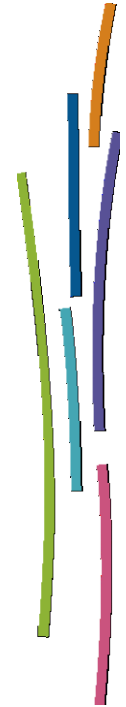
# Outline

1. Organization of the French Radioactive Waste Management
2. Benefits of joint programming



# French RW classification principles and scope of joint programming

Available on under		Very short lived waste containing radionuclides with a half-life of < 100 days	Short lived waste in which the radioactivity comes mainly from radionuclides with a half-life ≤ 31 years	Long lived waste containing mainly radionuclides with a half-life > 31 ans
Hundreds Bq/g	Very low level (VLL)	Management by radioactive decay on the production site  then disposal through routes dedicated to conventional waste	Recycling or dedicated surface disposal <i>(Industrial centre for collection, storage and disposal (Cires) disposal facility in the Aube département)</i>	
Millions Bq/g	Low level (LL)		Surface disposal <i>(Aube waste disposal facility)</i>	Shallow depth disposal <i>(being studied pursuant to the Act of 28 June 2006)</i>
	Intermediate level (IL)			
Billions Bq/g	High level (HL)	Not applicable <sup>1</sup>	Deep geological disposal <i>(being planned pursuant to the 28th June 2006 Act)</i>	



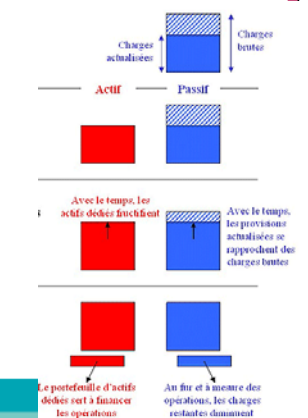
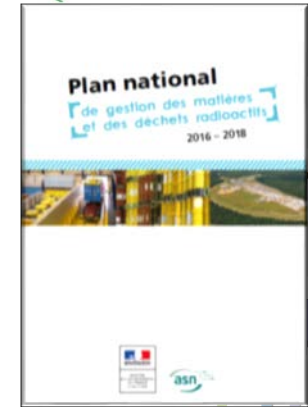
# Radioactive waste management regulated by law since 1991 in France



- ❑ Radioactive Waste (RW) management closely regulated and followed by the Parliament
  - 1991 Waste act
  - 2006 Planning act on radioactive materials and waste
  - 2016 deep geological disposal: reversibility and pilot industrial phase prior to start-up of the installation
- ❑ These acts set the principles of the French RW policy
  - Sustainable management of RW of whatever nature, with due regard for the protection of health, safety, and the environment,
  - Limitation of the burden borne by future generations,
  - Responsibility of RW producers.

# A specific institutional framework

- Creation of a RW management agency : **ANDRA**
  - ANDRA created in 1991, with a dedicated mission : to study, develop and manage routes for radioactive waste
  - Independent from waste producers
  
- Elaboration of a national plan and a national inventory every three years
  - National plan: a strategic roadmap for the overall management of the radioactive material and waste
  - A ministerial decree gives to the national plan a legal basis
  
- Long term nuclear expense funding obligations by operators (28 June 2006 French law)
  - Accounting rules (cost estimation, payment schedule, discount rate, reserve, dedicated asset...)
  - Administrative authority supervision



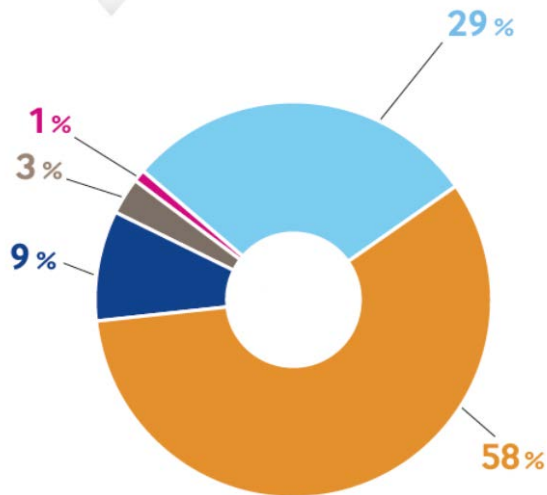
# A Strategic tool: The National Program

- Details, implements and follows-up the principles defined by law
  - States the principles and objectives of the management of radioactive material and waste
  - Draws up an assessment of existing and developing waste management routes
  - Gives the actions to be developed in order to improve the radioactive material and waste management
    - Research and studies to be carried out
    - Actions to be engaged
    - Milestones
- Involve heavily the stakeholders in the elaboration of the document
  - Co-directed by the Ministry of Environment, Energy and the sea and the Nuclear Safety Authority (ASN)
  - All stakeholders are involved : ANDRA, RW producers, TSO, Research Entities, Representatives of the civil society, Ministry representatives, etc...

Plan national  
de gestion des matières  
radioactives  
2016 - 2018

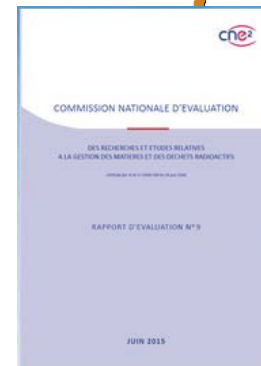
# A necessity of transparency: the National Inventory

Type	Total (m <sup>3</sup> )	In Storage Facility	In Disposal Facility	Disposal Facility capacity
HL	3 518	3 518	0	0
IL-LL	46 256	46 256	0	0
LL-LL	87 214	87 214	0	0
IL LL-SL	904 851	73 175	831 676	1 530 000
VLL	463 775	160 847	302 928	650 000



# A close follow-up of RW issues

- ❑ Implication of the Parliament, which regularly controls and evaluates the process :
  - Over 30 reports on nuclear safety, radioactive waste and related subjects written by the Parliamentary Office on Scientific Choices since 1990
- ❑ Annual scientific evaluation by the CNE (Commission Nationale d'Evaluation) :
  - 12 scientific members, half of them renewed every 3 years
  - Evaluations conducted on the basis of audits of RE involved in RW R&D : ANDRA, CEA, CNRS, ...
- ❑ Evaluation and control by the Nuclear Safety Authority (ASN)
- ❑ Follow-up by the High Comity for Transparency and Information on Nuclear Safety (HCTISN)

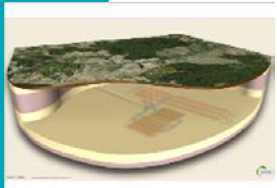




# National plan recommendations for 2016-2018

## Focus LLW-LL, ILW-LL and HLW-LL

- Management of low level long-lived waste (LLW-LL)
  - ANDRA shall continue with geological investigations on the site studied, assess the LLW-LL waste inventory liable to be disposed of in it and submit a report presenting the technical and safety options for this disposal facility
  - An overall industrial system for management of all the LLW-LL radioactive waste shall also be submitted
- Management of High Level and Intermediate Level, Long lived waste (HLW/ILW-LL)
  - *Submission of a safety options file in 2016 and integration of a pilot industrial phase prior to start-up of the installation*  
*Reception of the first radioactive waste packages is scheduled for approximately 2030*
  - ANDRA shall define a preliminary version of the acceptance specifications for the deep geological disposal facility it is designing, as soon as possible



# French benefits of joint programming

- Even if each country is responsible of the management of its own waste with its own policy, waste management is an issue at **the international level because each country has to address the same problem**
  - Bringing together skills is an obvious fact
    - Sharing effort and not wasting time reinventing the wheel
    - Sharing information and good practice
  - In a more and more complicated world, sharing reflection and conclusion is a **requirement** and **turn into a strength**
    - Scientific and technical aspects
    - Methodological aspects
    - Socio-political aspects
- French R&D feeds on international collaborations
  - International organization: NEA, IAEA...
  - Platform IGD-TP
  - European projects
  - Bilateral collaborations...

# French benefits of joint programming

□ A joint program seems to be an **optimized solution** to answer to European waste management issues

- Shared and Coordinated effort around
  - Scientific/technical questions
  - Knowledge management
  - Strategic and socio-economic studies
- Key enabling conditions
  - Developing a common vision
  - Establishing a common Strategic Research Agenda



□ **Strong support, encouragement and high expectations** from the Ministry of Environment, **Energy** and the sea to the Joint Program initiative

- Organization of regular Joint Program French mirror meeting to coordinate the French mandated actors, including WMO (ANDRA), TSO (IRSN), RE (CNRS, CEA) plus third parties and producers
- coordination of the French R&D activities with cross-European joint R&D programs

*Thank you for your attention*

