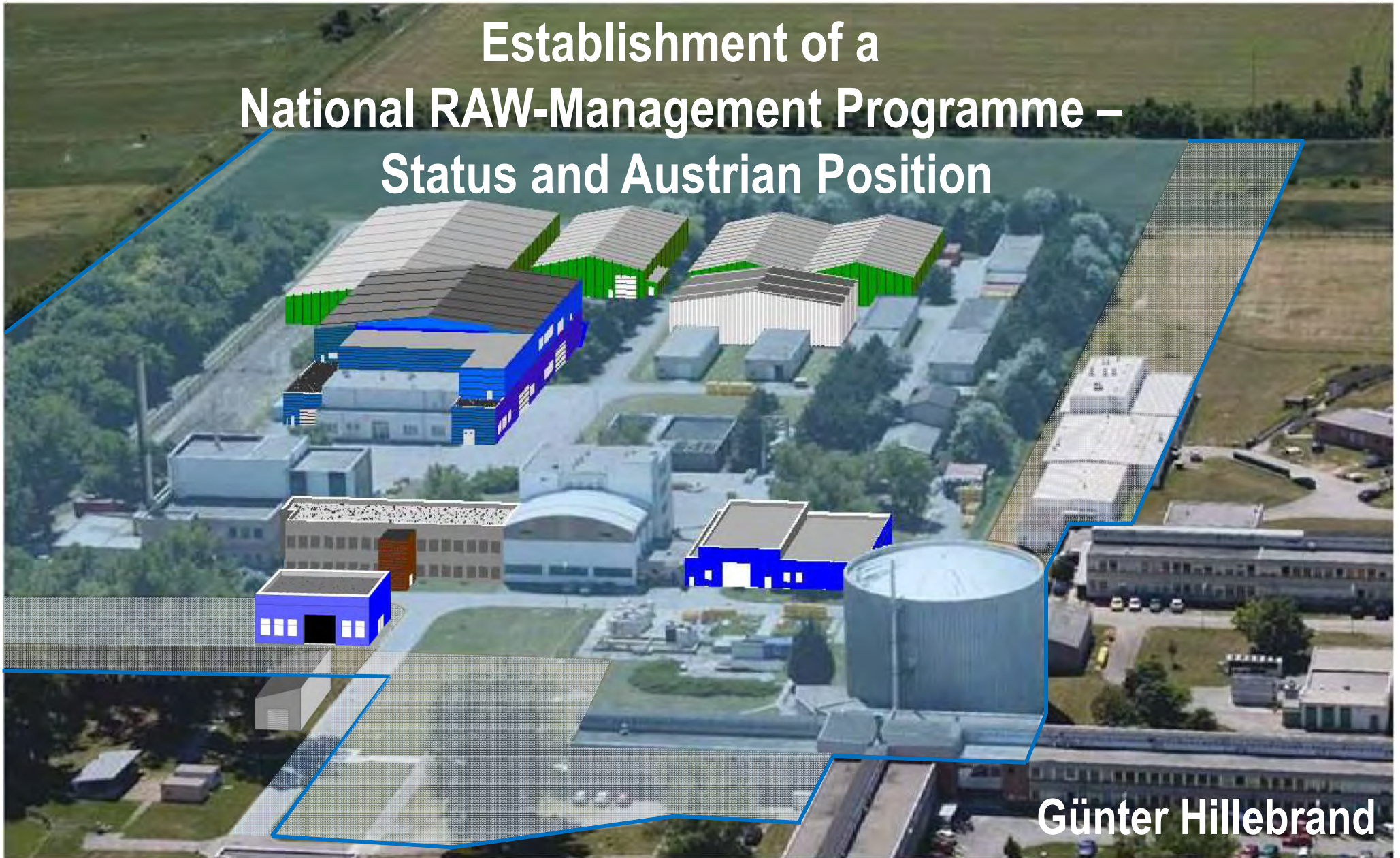


# Establishment of a National RAW-Management Programme – Status and Austrian Position



Günter Hillebrand

---

## Content of presentation

- General Situation in Austria
- Waste Management – Goals and Techniques
- Financial Aspects of WM
- New Waste Management Concept
- Implementation of EC-Directive
- Development of an Integrated Management System (IMS)
- Austria's participation in ERDO

## General situation



- Austria is a country **without NPP**
- A NPP was constructed in Zwentendorf in the 1970s, but not put in operation as a consequence of a negative vote in a referendum (1978)
- As a consequence a **Anti-Atomic Law** was set in 1978 and a **Constitutional Law** in 1999
- **LILW** from applications in medicine, research, industry and ongoing decommissioning projects
- A small **TRIGA-Research Reactor** at the University is operating (until 2023 or beyond)
- **HLW** and **SNF** does not arise in Austria



# Radioactive Waste Management – Policy and Practice (I)



- **RAW management** is governed by Austria Radiation Protection Act and General Radiation Protection Ordinance at BMLFUW<sup>1)</sup>
- The **Republic of Austria** is obliged to remove all conditioned radioactive waste interim stored at the site of NES to a final or long-term repository until the end of 2045 at the latest
- The question regarding the location of the **final storage** is still open
- Austria being a small country without nuclear power plants sees an **international co-operation** for the disposal of radioactive waste as the most reasonable solution and is therefore interested in common, **shared repositories** for radioactive waste
- Currently, there are **no plans to construct** a final repository in Austria in the near future

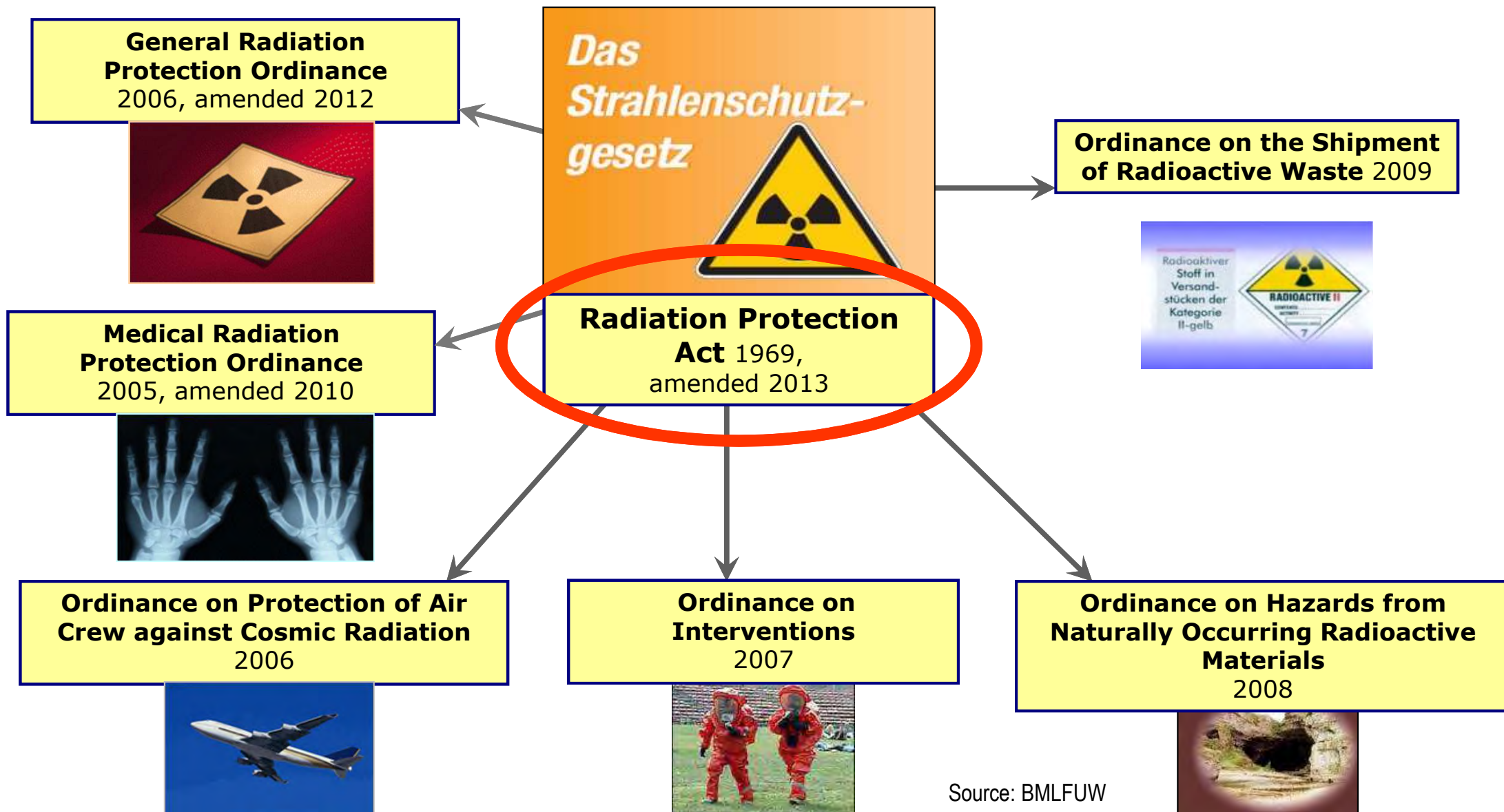
<sup>1)</sup> BMLFUW = Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management

## Radioactive Waste Management – Policy and Practice (II)

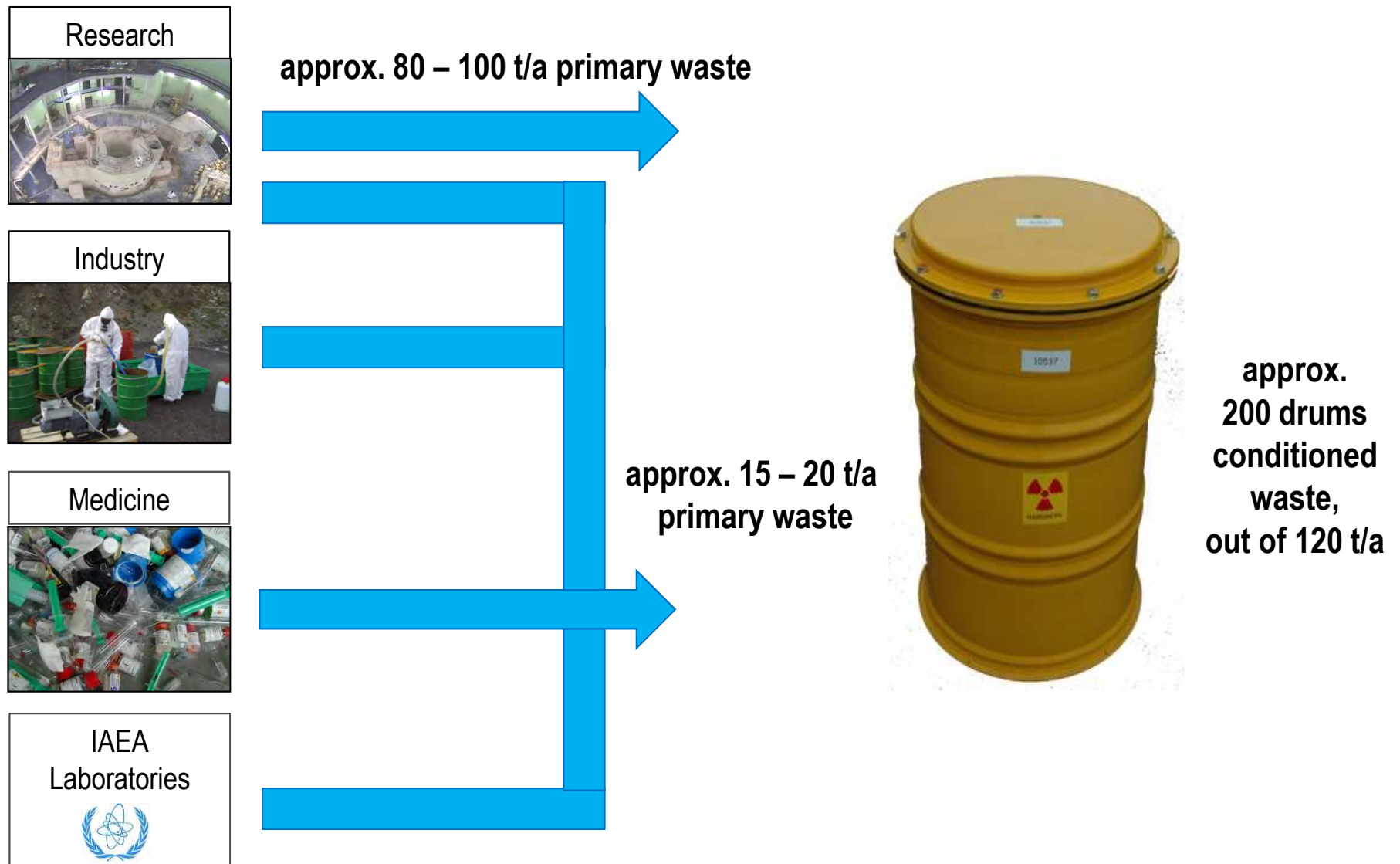


- Austria's radioactive waste management policy follows the “**polluter pays**” principle
- Producers of radioactive waste have to bear the costs of treatment, interim storage and, in addition, contribute to a special, separated fund, which is exclusively dedicated to the future final disposal (“**final disposal fee**”)
- To **keep the prices** for treatment, conditioning and interim storage at an acceptable level the Austrian State pays for the **technical infrastructure** and equipment of NES
- Austria follows the principle of “**minimization**” of radioactive waste

# Legal situation in Austria

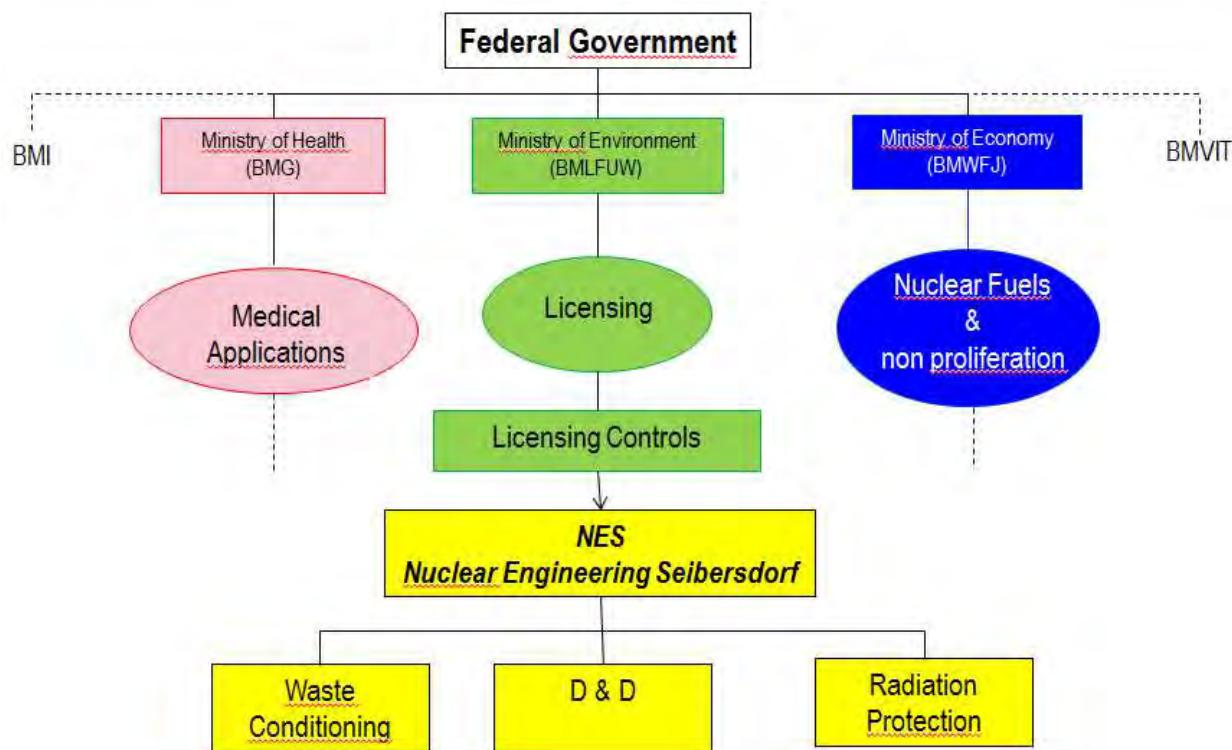


# Producers of radwaste and quantities in Austria



# Contract with NES, Government<sup>1)</sup> and Community

## A clear organizational structure in Austria



- **Longterm contract** until 2045 for conditioning and storage
- Government takes over **financial liabilities** for infrastructure and equipments
- **NES** as the national licenceholder is the **centralized** waste management organisation in Austria
- **NES supports** government by implementation of EC-Directive 2011/70 EURATOM
- NES supports government by realizing a final repository concept

<sup>1)</sup> BMLFUW



# NES: Central Waste Management Organisation for LILW in Austria

- **Goals:**
  - **Volume** reduction
  - Transformation of waste into stable form  
(**long term stability**)
  - **Safe storage** in new 200 l drums or in special containers in new transfer storage halls
- **Main techniques:**
  - Combustible waste is incinerated, metals are melted
  - Non-combustible waste is (if possible) supercompacted
  - Liquid waste is treated, resulting sludge is conditioned and stored
  - All waste is dried in a drum drying station
  - Sealed sources are segregated and separately stored



Site of NES

## Financial Aspects of NES

- **100 % financed** by long-term contracts with the Republic of Austria
- **100 %** of the work programme **is defined** by law in general and by contracts in detail
- All annual budgetary demands are **valorized annually** until 2045
- NES is a **non-profit organization**, working for public interest (10 % Tax-vote)
- „Polluter Pays Principle“ for all producers: Producers of radioactive waste have to pay for waste transferred to NES for treatment and interim storage including a charge for future costs of final disposal „**Vorsorgeentgelt**“, currently € 12.500,00 per 200 l - drum)

**BMLFUW**

Contract for conditioning  
& facilities

**BMVIT**

Contract for decommissioning  
of historical burden

# New Waste Management Concept for modernization

**Waste conditioning facilities and interim storage** has to be state of the art (contract by law and with BMLFUW):

- High investments in new buildings and technical equipment (ca. € 70 mio.)
- Assuring the long-term stability of the waste until final disposal
- Additional safety and security installations



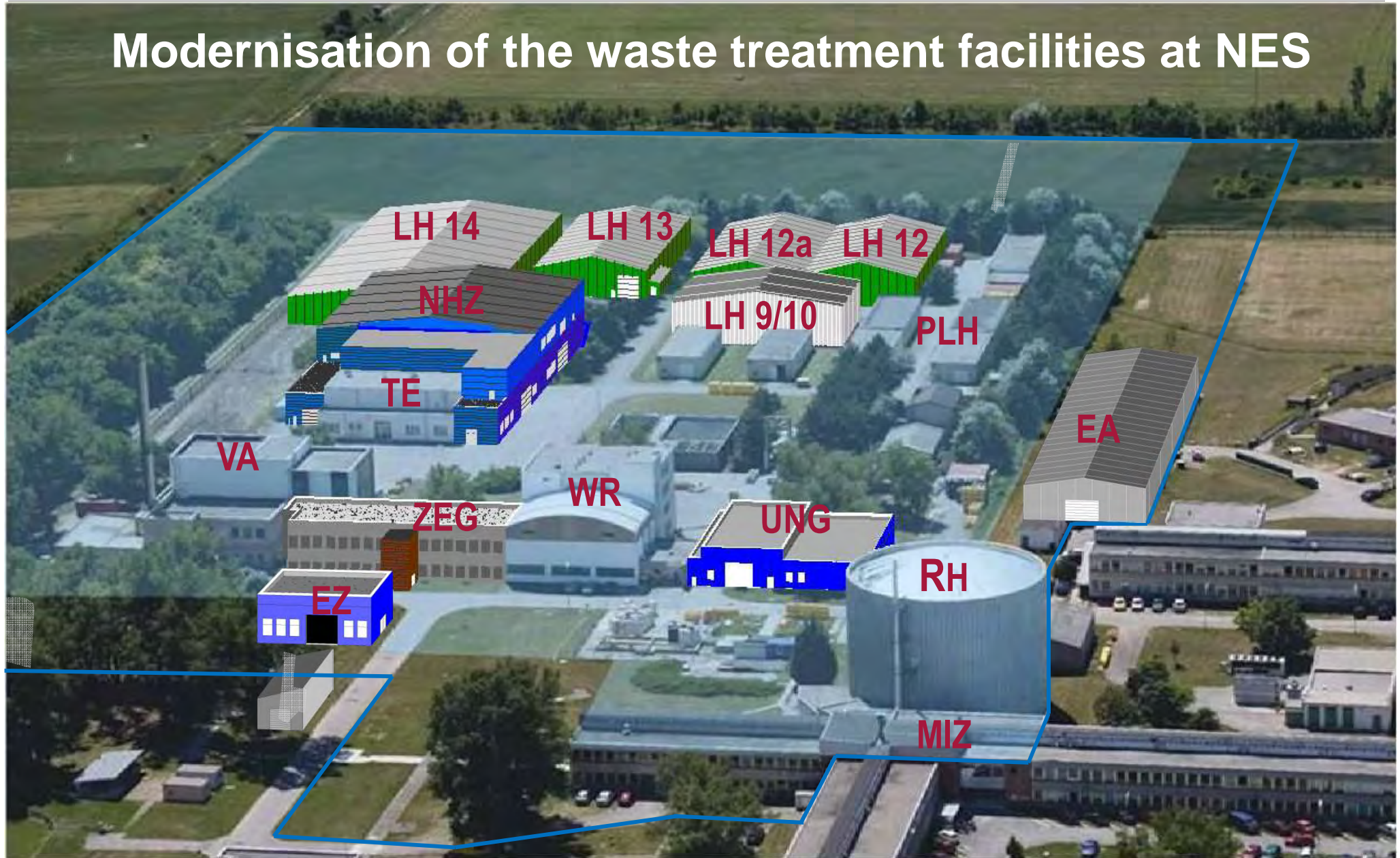
Waste treatment facilities

## ***Main projects:***

- Construction of a New Handling Center (NHC) for radioactive waste treatment
- Construction of new interim storage halls (Transfer storage)
- Repacking/Reconditioning of old waste drums → volume reduction, long-term stability



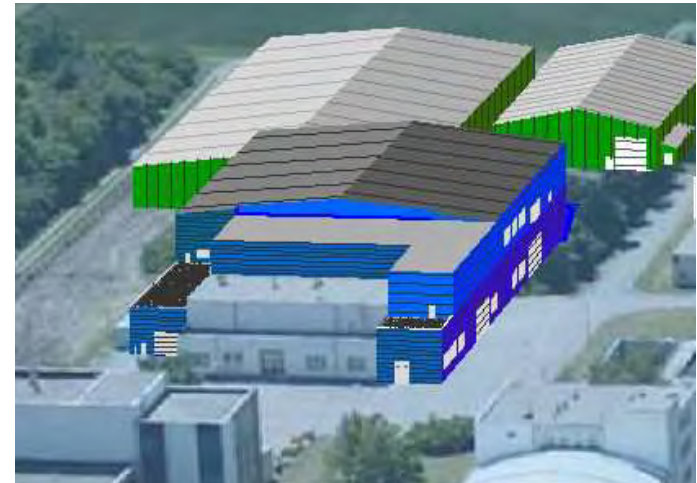
# Modernisation of the waste treatment facilities at NES





## A new Handling Center (NHC)

- Optimizing of workflow, logistics and working safety
- Optimization of radiation protection
- Centralization and renewal of most conditioning facilities in one central building:
  - 2 stainless steel caissons (manipulation boxes)
  - Center for manipulation of sealed sources
  - Vertical high force compactor (1500 t)
  - Drum drying system (32 drums)
  - Hot cell with underground storage
  - Cementation and mixing equipment
  - Decontamination chamber



3D-model of NHC

# Implementation of EC-Directive 2011/70 (I)

- **Art. 4: General Principles**

Basic points of National Waste Management Policy do exist, waste minimization is part of the Policy and international disposal solution is an option



**ERDO**  
working group

- **Art. 6: Competent Authority**

Austrian Regulatory Authority has legal power, human and financial resources

## BUNDESGESETZBLATT FÜR DIE REPUBLIK ÖSTERREICH

Jahrgang 2013	Ausgegeben am 20. Juni 2013	Teil I
106. Bundesgesetz:	Änderung des Strahlenschutzgesetzes (NR: GP XXIV RV 2161 und Zu 2161 AB 2318 S. 203, BR: AB 8998 S. 821.)	

106. Bundesgesetz, mit dem das Strahlenschutzgesetz geändert wird

Der Nationalrat hat beschlossen:

Das Bundesgesetz über Maßnahmen zum Schutz des Lebens oder der Gesundheit von Menschen einschließlich ihrer Nachkommenschaft vor Schäden durch ionisierende Strahlen (Strahlenschutzgesetz – StrSchG), BGBl. Nr. 227/1969, zuletzt geändert durch das Bundesgesetz BGBl. I Nr. 35/2012, wird wie folgt geändert:

1. Die Überschrift von § 17 lautet:

- **Art. 7: Licence Holders**

NES ist national licenceholder for waste management, regularly safety checks of all facilities are based on Radiation Protection Ordinance. An integrated management system (IMS) is under development



## Implementation of EC-Directive 2011/70 (II)

- **Art. 8: Expertise and skills**

Education and training is laid down in Austrian Radiation Protection Act and provided in QM-processes of NES. An Austrian-wide acting „Radiation Protection Academy“ is in place



- **Art. 9: Financial resources**

A disposal fee for final storage is part of law. Financial resources for management of RAW are assured by longterm contracts with NES



- **Art. 10: Transparency**

Transparency is part of our „Environmental Assessment Act“. New Information Policy – change NES from „closed job“ to „open house“. A participation process with general public will be started, case by case.



# NES – Integrated Management System

## Quality Management, part of IMS

**1<sup>st</sup> Step  
2005**



- Core Process
- Support Process
- Work Instructions

**2<sup>nd</sup> Step  
2008**



- Parts of Work Safety
- Parts of Environmental Safety

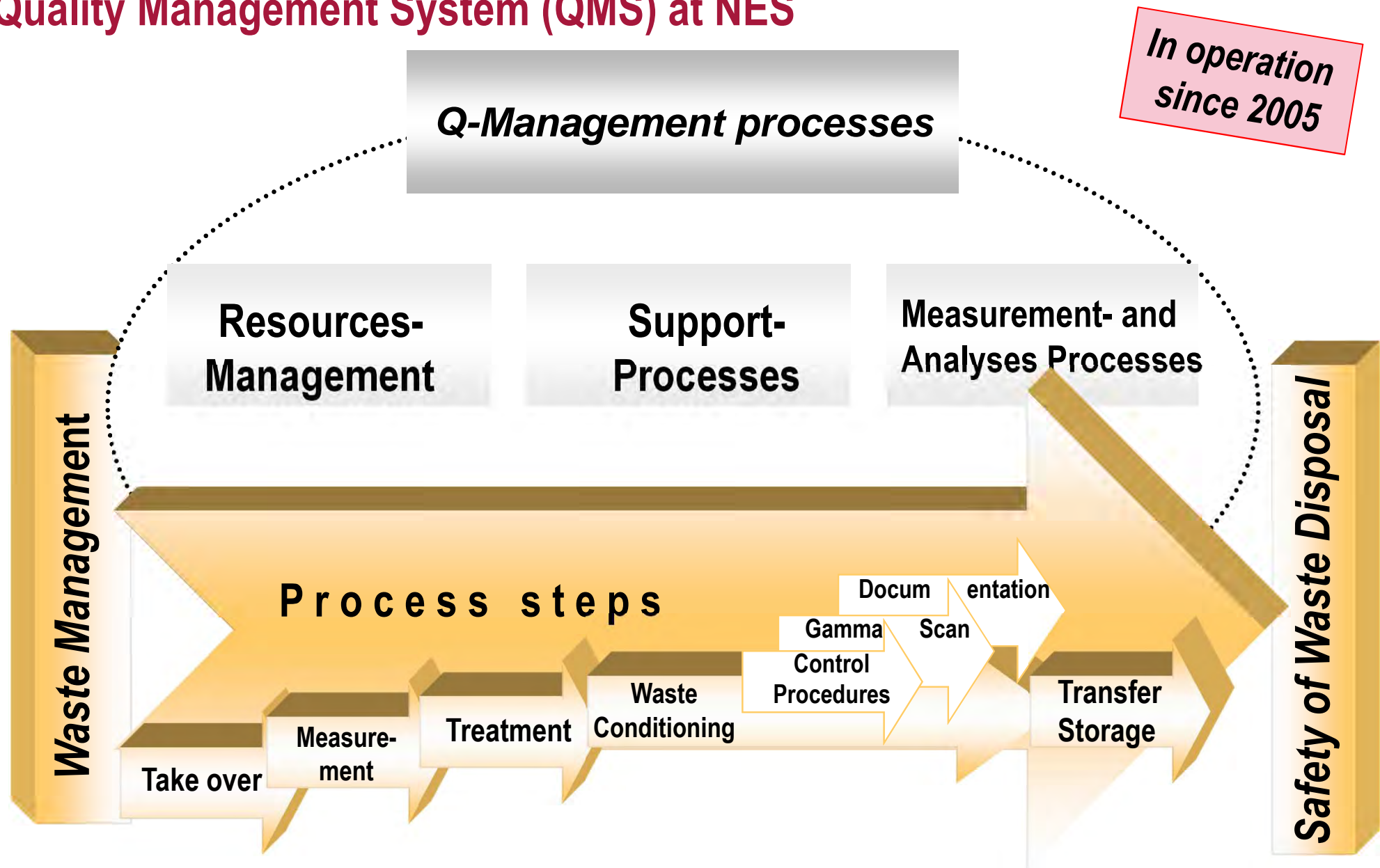
**3<sup>rd</sup> Step  
2014**



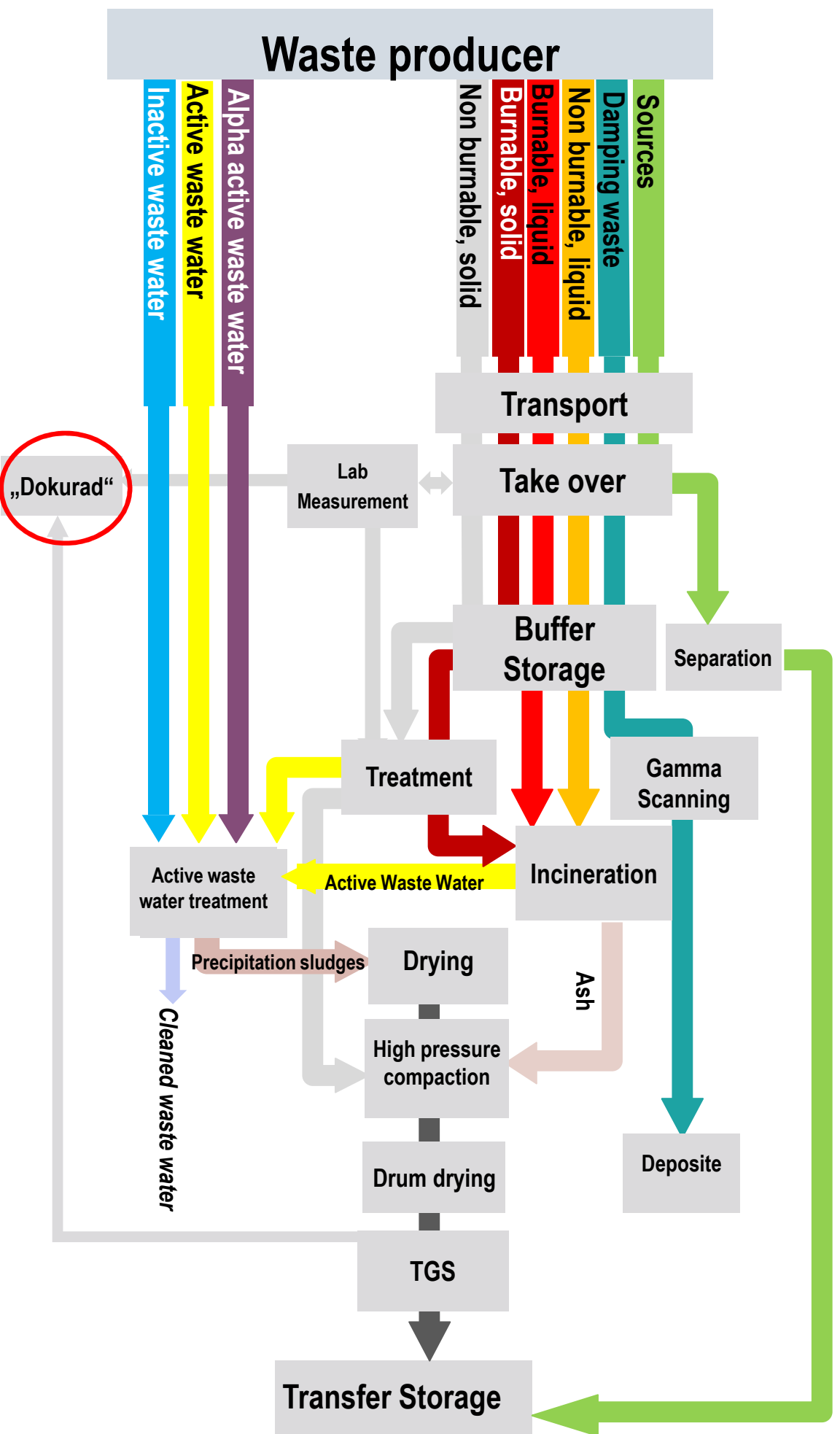
- Full integration of ISO 14001 and
- OHSAS 18001



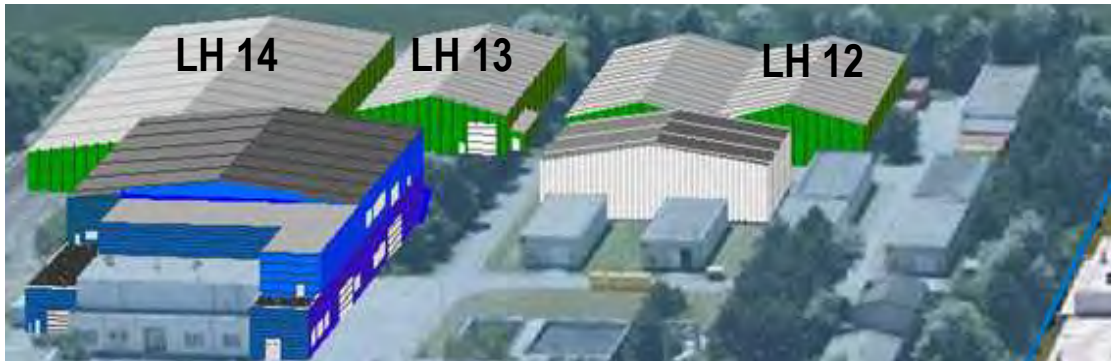
# Quality Management System (QMS) at NES



# Waste Stream Management as part of IMS



# New Interim Storage at NES



- Contract with BMLFUW, Municipality and NES for LILW until 2045 needs long-term stability of drums
- **Individual inspection** of the drums must be possible

- Stability of drum-staples in line with new **earthquake** standards (EUROCODE 8)
- Storage halls designed for the consequences of an **airplane crash**<sup>1)</sup> A340-600 (full fuel tank)
- Controlled **climatic conditions** in all storage halls ( $> 10^{\circ}\text{C}$ ,  $< 60\%$  Humidity)



New Storage Hall

<sup>1)</sup> Ground radiation for 7 days and 1 year within limits of intervention ordinance

## Austria's participation in ERDO<sup>1)</sup>



- Beside the intention to find a „shared solution“, Austria **needs to explore a national solution (Dual-Track-Approach)**
- Austria is expecting support through ERDO to find a „**Regional Solution**“ corresponding to EC Directive 2011/70, Art. 4 and to Austrian Radiation Protection Law
- ERDO is developing operational terms and knowledge for a GDF<sup>2)</sup> that could be **helpful for Austria** to establish the National Programme. Main part of waste accepted for near surface repository.
- The existing contract with NES maintains a relevant national expertise and future support to the government
- Until now, no commitment was made for the establishment of an ERDO-agreement

<sup>1)</sup> 9 countries are taking part at the moment

<sup>2)</sup> Geological Disposal Facility



