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National Waste Programme

Strategic Overview and Forecasts

SAFESPUR Concrete Reuse and Recycling Event

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David Rossiter
Head of National Programme
LLW Repository Ltd

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What is LLW?

LLW Definition:

<4,000 Bq/g Alpha

<12,000 Bq/g Beta/Gamma

LA LLW Subcategory:

<200 Bq/g Total Activity

HV VLLW Subcategory:

<4 Bq/g Total Activity

LLW

ILW *>4,000 Bq/g Alpha*

>12,000 Bq/g Beta/Gamma

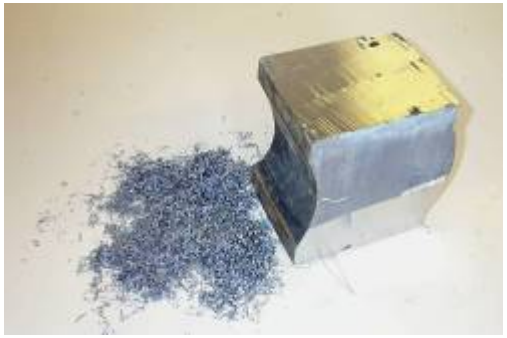
>4,000 Bq/g Alpha

>12,000 Bq/g Beta/Gamma

+ Heat generating

HLW

What is LLW?



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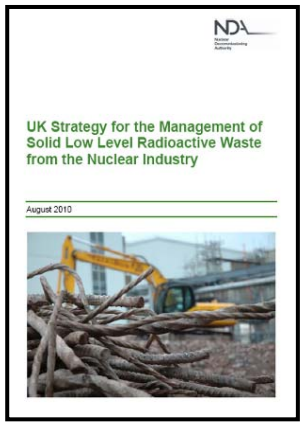
Government LLW Policy

- New Government Policy on LLW issued March 2007
- Emphasises Waste Management Hierarchy:
  - Avoid
  - Minimise
  - Re-use
  - Recycle
  - Dispose
- Provides more flexibility and consideration of alternative waste routes
- Required NDA to develop Strategy and Plan for LLW from the UK nuclear industry (DECC for non-nuclear industries)

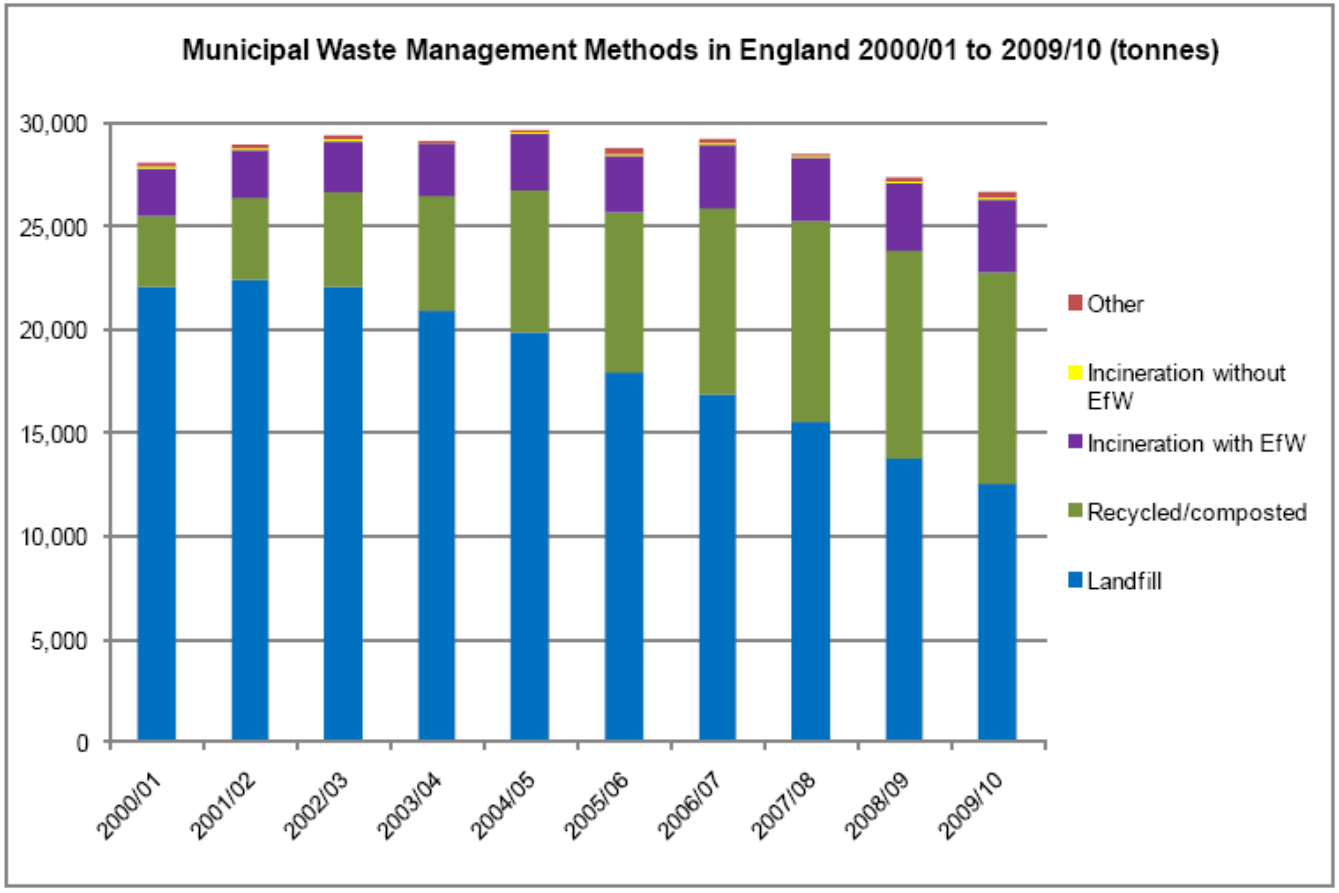
National LLW Strategy Context for Reuse

- The National LLW Strategy states the following:
  - *"The LLW policy recognises the opportunities for appropriate re-use of materials before they become waste.*
  - *For soil and rubble, there are UK and international examples of waste producers implementing alternatives to disposal, although they are limited.*
  - *…there may be challenges in finding opportunities that combine the availability of appropriate material with projects that can receive the material.*
  - *There may also be impacts on the site end state that would need to be considered.*
  - *Guidance is required on how these opportunities can be identified and implemented at a practical level."*



- *In order to do this NDA will:*
  - ***seek end users for soil, rubble and demolition products*** *generated within the NDA and non-NDA estate* ***using UK wide networks*** *such as the UK LLW Strategy Group*
  - *work with regulators and waste managers* ***to seek clarification of regulatory requirements*** *and* ***provide examples of UK and international good practice*** *in re-use of waste and provide guidance on implementation of these opportunities*

Trends in Conventional Waste



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Information Reviews

- An understanding of the problem is required to develop a robust strategy
- Key Baseline Components:
  1. Current management strategies
  2. Waste Inventory
  3. Costs and liabilities
  4. Available assets and infrastructure (existing and planned)
- LLW Baselines published - LLW Strategic Review in 2009 and 2011
- Opportunities identified, evaluated, and prioritised
- Forms basis of National Programme
- Available at www.llwrsite.com

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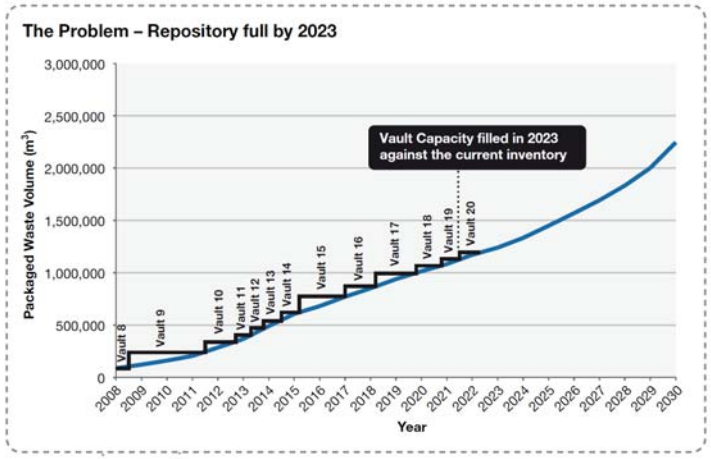
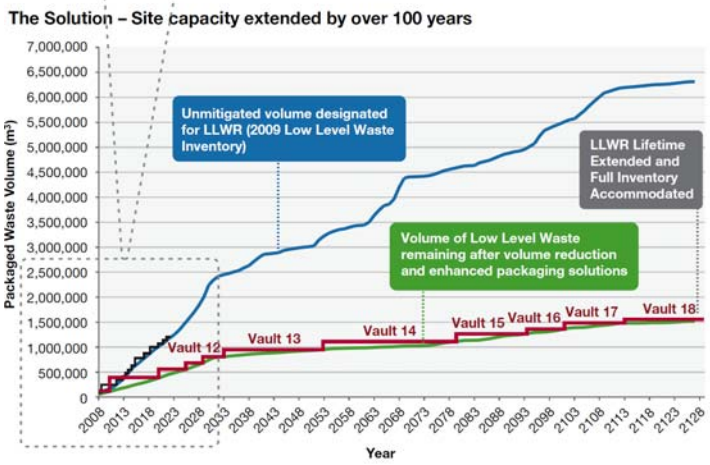
The Capacity Challenge

- UK National Inventory includes 4.4 million m^3 of raw LLW
- Packaging increases volume by factor of 1.5 to 6.4 million m^3 (if disposed to LLWR)
- Maximum vault capacity of LLWR is 1.7 million m^3
- Repository can last until 2130 – but only if we manage the space wisely:
  - Recycling & volume reduction
  - Alternative solutions for LA LLW & VLLW





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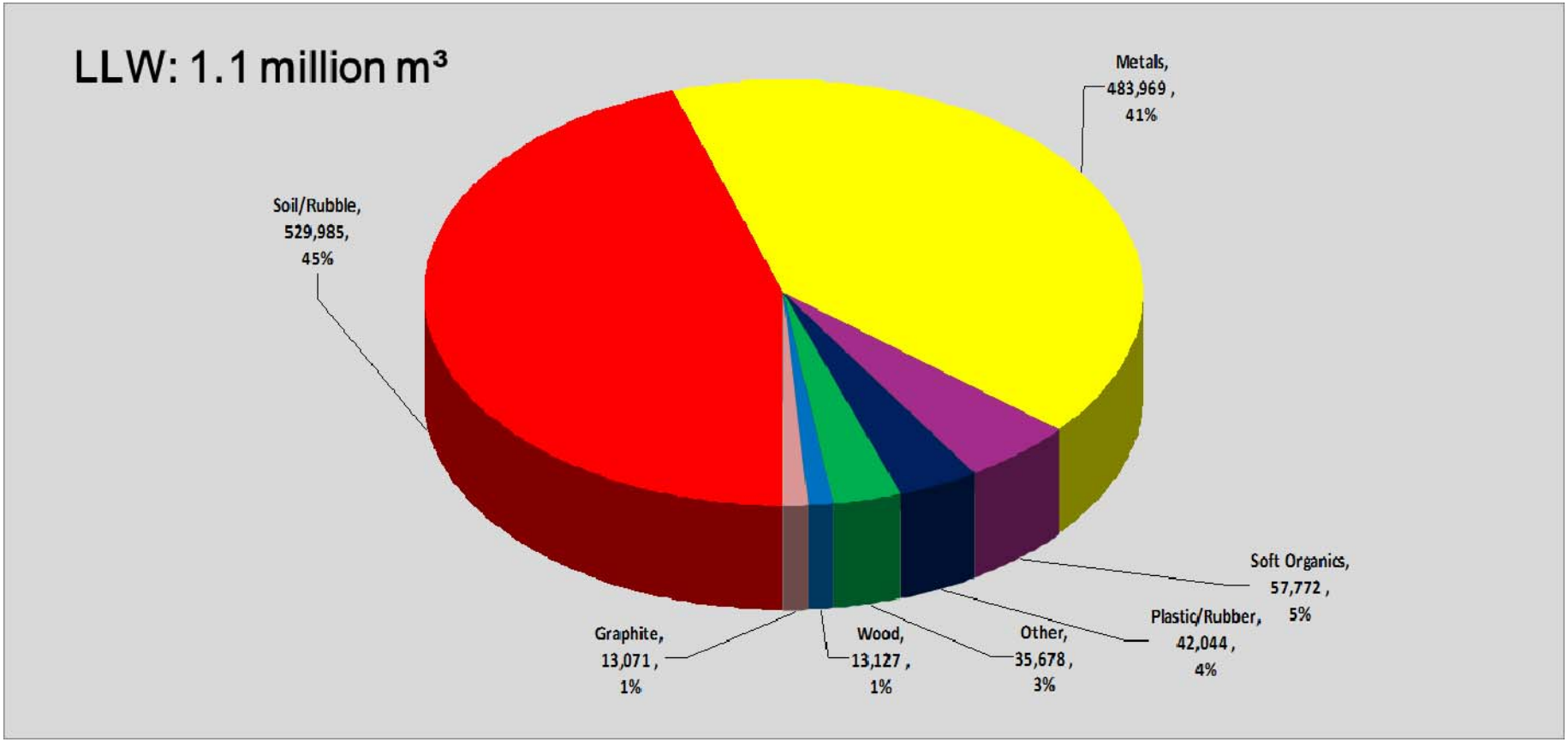
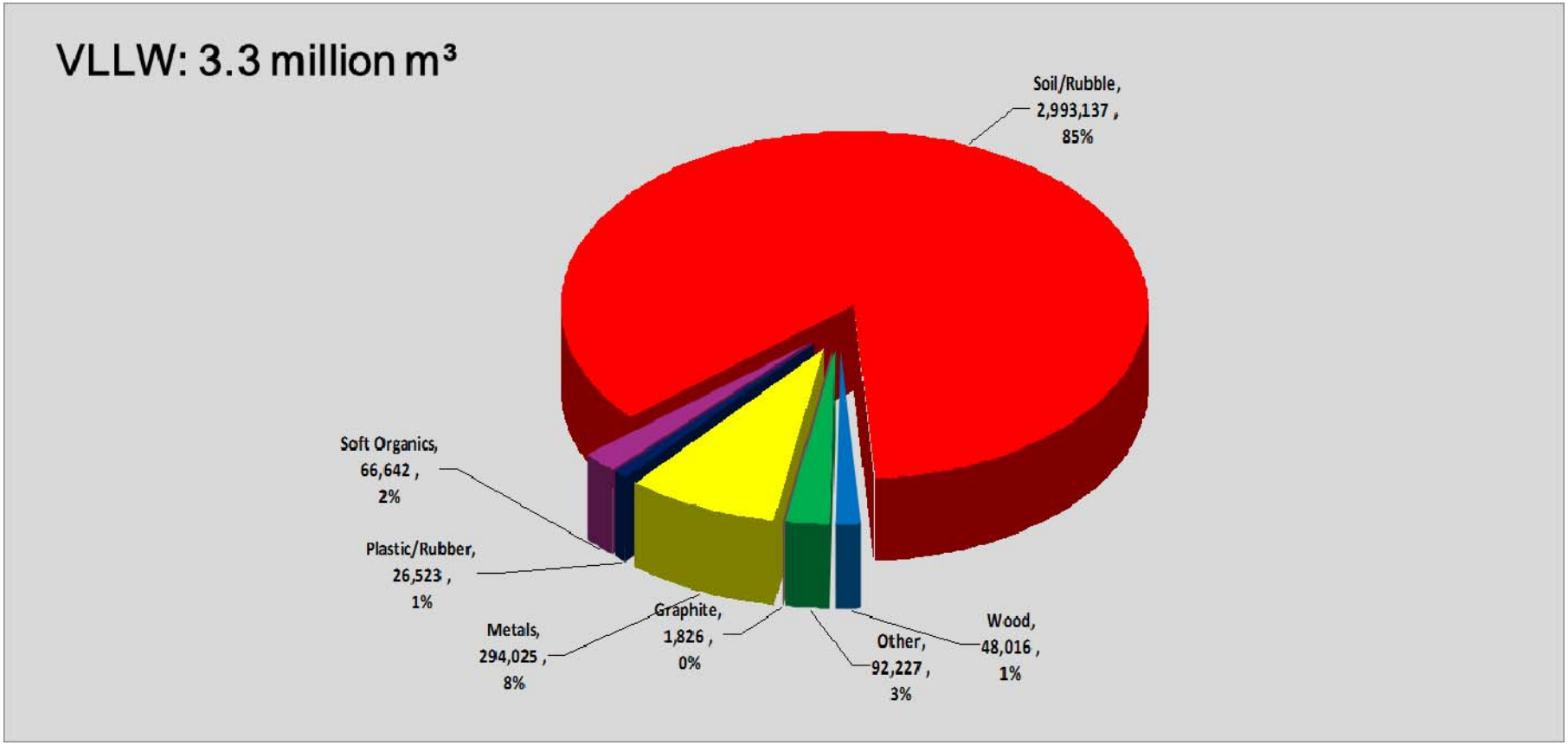
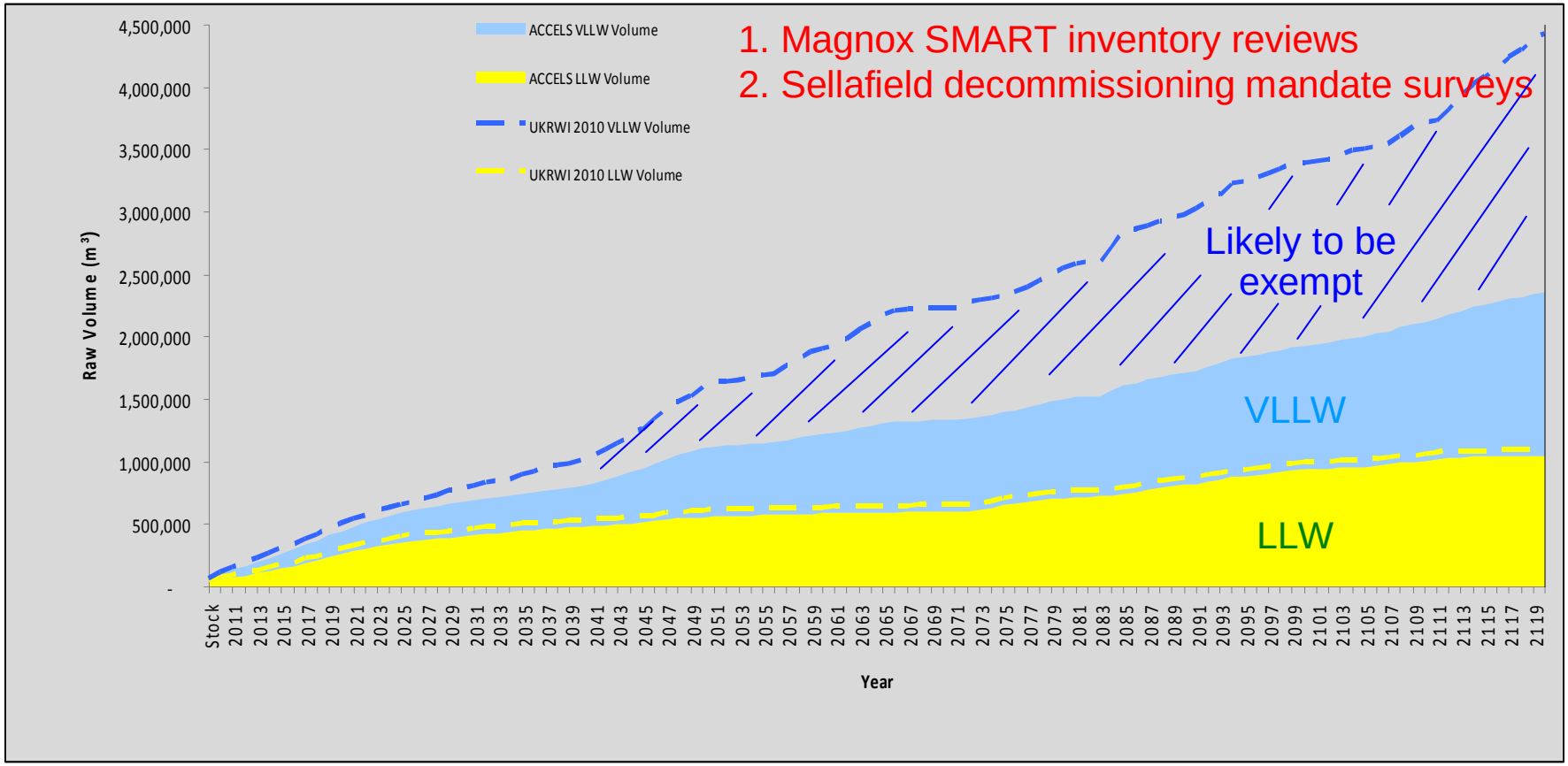
Material composition of LLW



Material composition of VLLW



Improving the inventory



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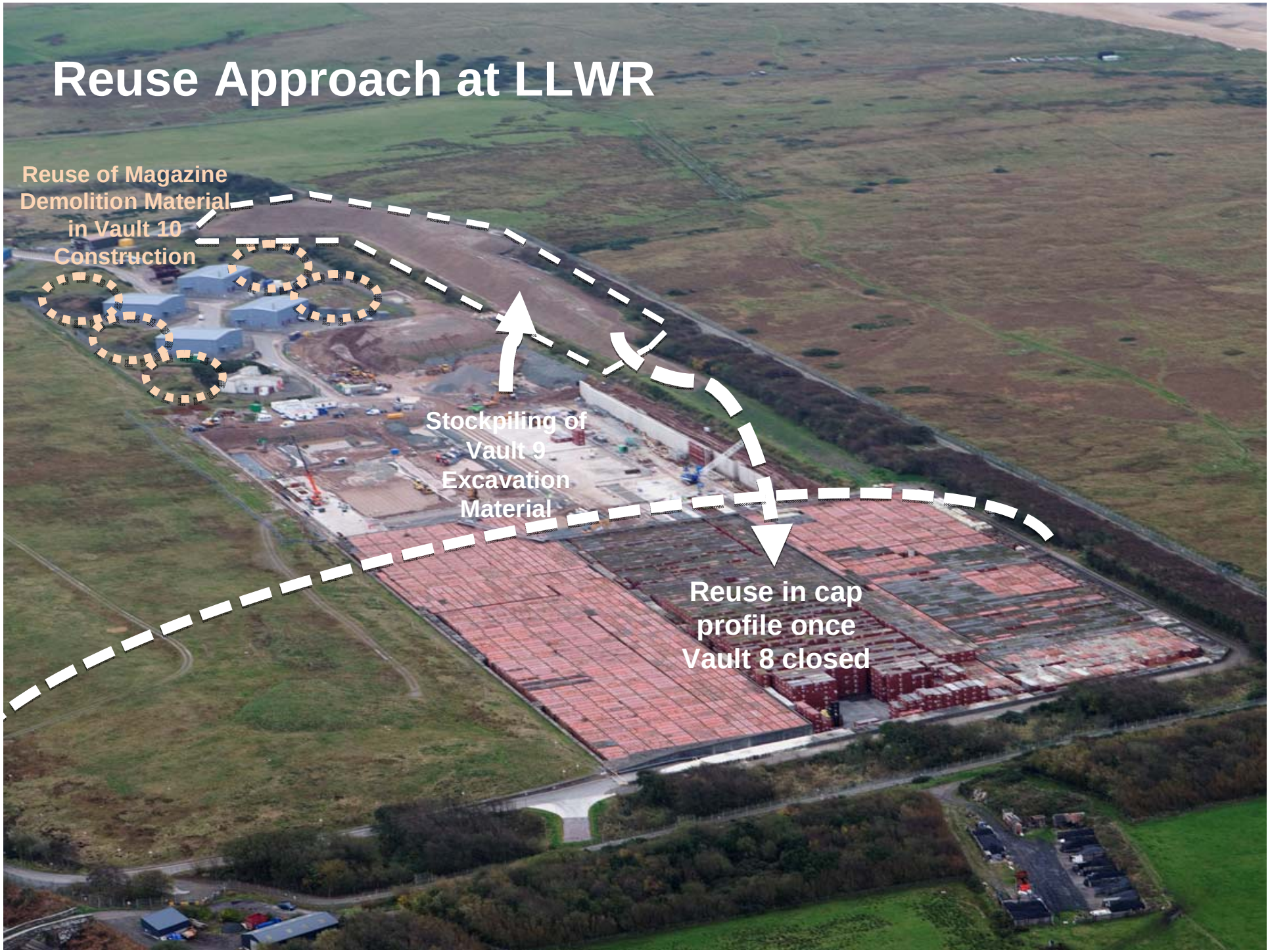
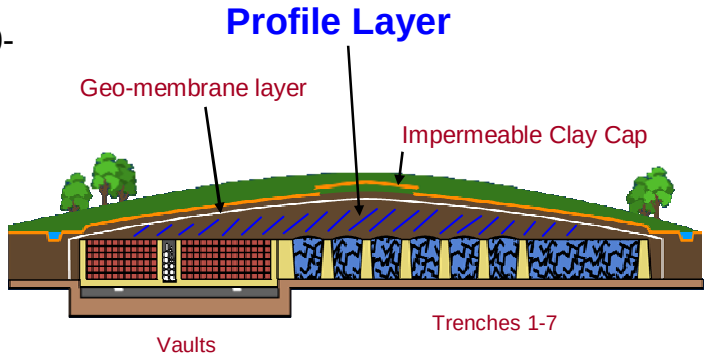
Reuse Approach at LLWR



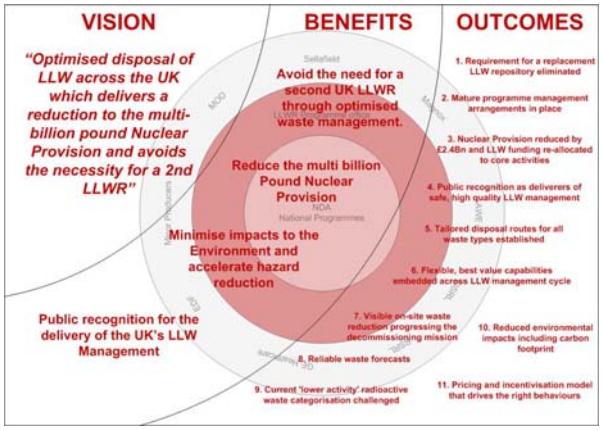
Reuse of VLLW in LLWR Cap Profile

- Feasibility study undertaken in March 2011
  - Showed cap profile could potentially accommodate 200,000-700,000m^3 of VLLW
  - Potential for significant cost saving
  - Avoids need to import clean profiling material - transport
- Initial Business Case due in March 2012
- Further technical evaluations in 2012:
  - Timing of arisings and suitability of material
  - Evaluation of the impact on the Environmental Safety Case
  - Technical feasibility including compatibility with design requirements for the engineered cap
  - Viability from an operations point of view
  - Stakeholder considerations
- EA decision on ESC due in 2013
- Cap construction due to commence 2014/15
- Opportunity to commence stockpiling earlier will be evaluated

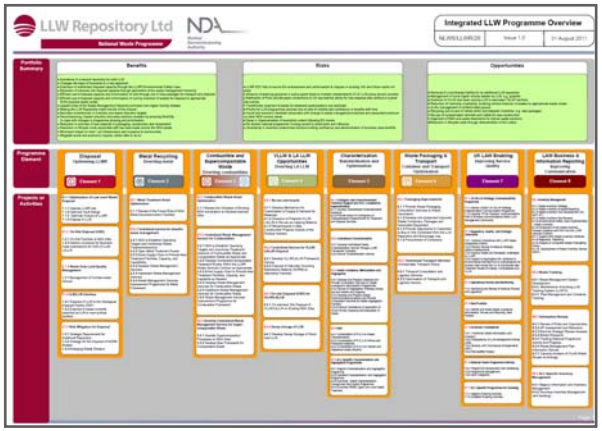


Delivering the Strategy through a LLW National Programme

- What is it?
  - How we are going to implement the LLW strategy
  - A big schedule of everything going on across the estate
  - Work activities fall under 8 programme elements
  - Tracking of key waste metrics

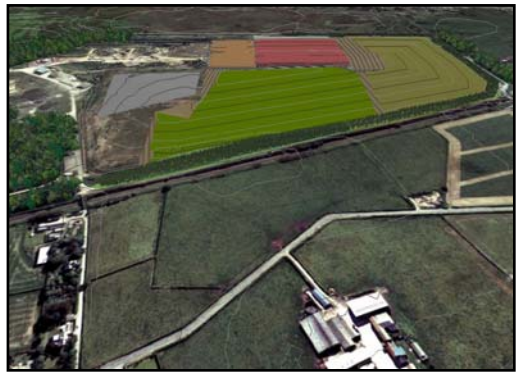


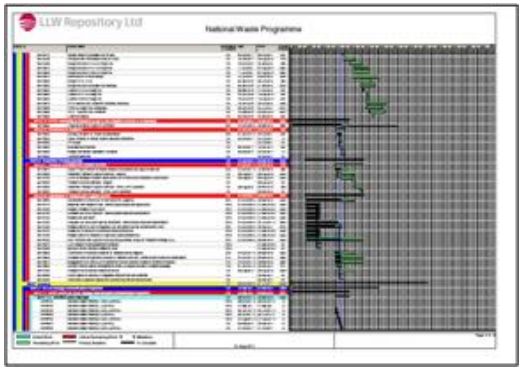
- Why?
  - Allows Govt, NDA and stakeholders to monitor progress
  - Allows better co-ordination between sites
  - Shows stakeholders there is a 'grand-plan'
  - We will know when we have succeeded



Conclusions

- Large volumes of low activity concrete and soil will be generated over next century
- Reuse & Recycling Key Area of LLW Strategy
- Further evaluation of LLWR capping opportunity – 2012 onwards
- Progress will be tracked through the LLW National Programme





Questions