

NDA

Nuclear
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LLW Repository Ltd

**NDA National LLW Strategy Group
February 2009**

National LLW Management Plan

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NDA National LLW Strategy Group - February 2009



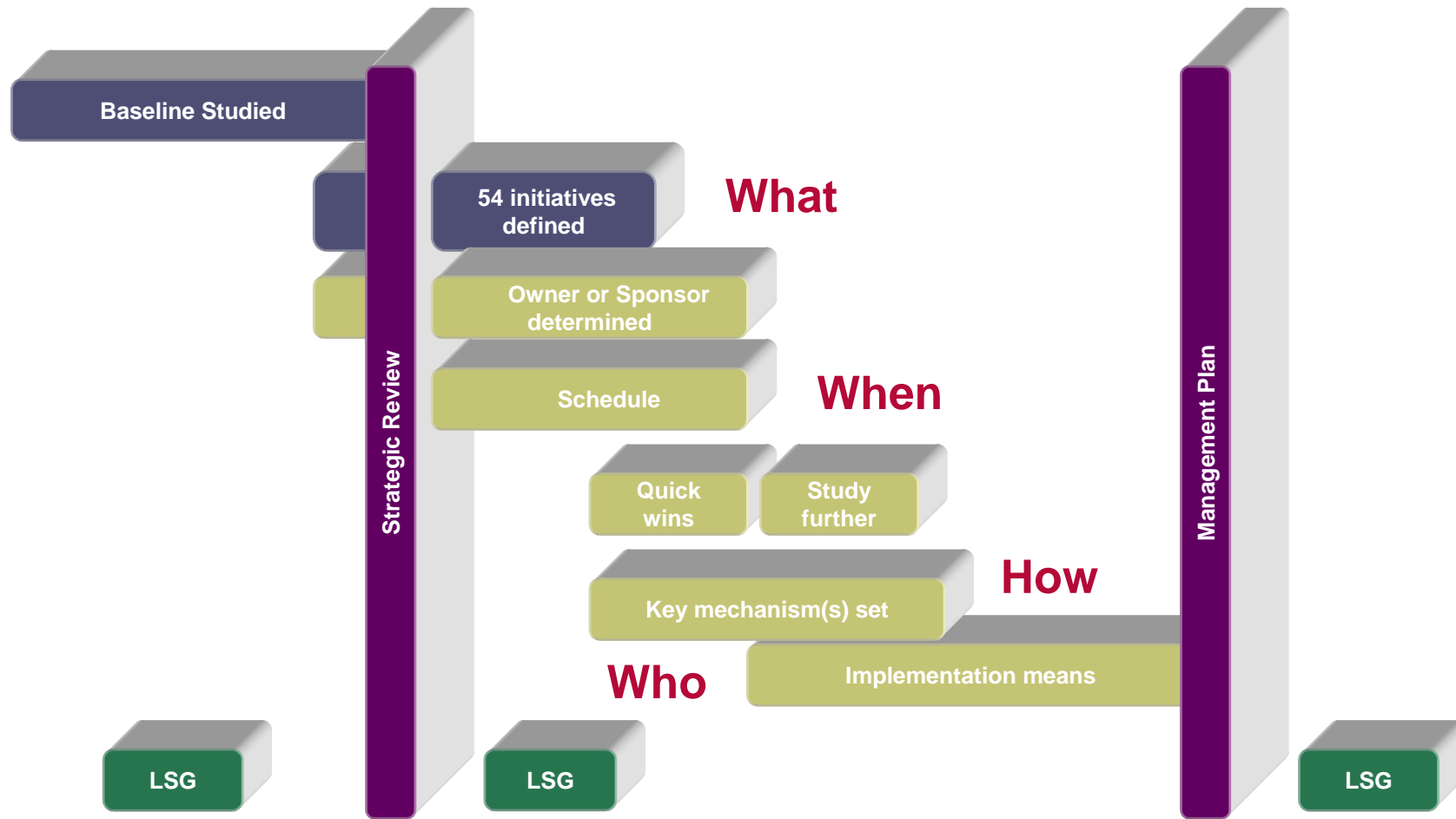
Introduction

- The Plan documents the key concepts to establish an integrated LLW programme
 - Implementation of the waste hierarchy
 - Long-term sustainability
 - Use of good practice and innovative technology
- Addresses synergies on a national, regional, and multi-site scale
 - Identifies future investment issues for new or modified waste management facilities, assets, and infrastructure
 - Risk mitigation strategies
 - Integration of research and development activities
- Updated on an annual basis for informing the SLC lifetime planning process and other non-NDA waste programmes

National LLW Management Plan

- 54 potential strategic initiatives identified during the Strategic Review which provide significant synergies or opportunities to reduce liabilities below the NDA baseline.
- Collective implementation of these initiatives could produce a step-change improvement in LLW management practices across the UK and contribute significant savings of over £1 billion to the LLW baseline.
- Accomplishment of many of these initiatives also has the potential to extend the life of LLWR and have significant environmental and sustainability benefits.

National LLW Management Plan Development



Process to Plan Development

- Brainstormed potential methods for accomplishing scope of 54 initiatives
 - Examined existing programmes and remit
- Identified an indicative owner or sponsor
 - Confirmed existing LTP scope and provision to perform, if possible
- Established the key mechanism(s) for delivery of the defined scope
 - Method of implementation
 - Key Deliverables
 - Potential Cost/Benefit and Priority
- Developed detailed schedule

Management Plan Categories

- Waste Avoidance/Minimisation (WAM)
- Waste Characterisation (WC)
- Waste Segregation/Categorisation (SC)
- Waste Treatment (WT)
- Recycle/Reuse and Exempt Waste (RR)
- Waste Disposal (WD)
- Waste Packaging (WP)
- Waste Transportation (TRAN)
- Waste Tracking/Inventory Management (TIM)
- Other (OTHER)



Datasheets

- **Sponsor**- Indicative lead or owner of the initiative, responsible for the successful implementation of the outlined scope.
- **Method of Implementation** - Sponsor will utilise the assigned site organisation or method of implementation (the **'Who'**) to complete all of the identified schedule activities.
- **Scope** - Explanation of (**'How'**) the initiative will be realised.
- **Key Deliverable** - The principle deliverable expected from the specified work.
- **Classification** - Based on evaluation in the Strategic Review, opportunities have been prioritised into potential 'quick-wins' or initiatives requiring significant 'study further'.
- **Provision in Plan** – Within current SLC Life Time Plan or capacity to deliver.
- **Schedule** - Details (**'When'**) the individual tasks are required to fulfil the scope. Status and metrics will be discussed at National LLW Strategy Group meetings.
- **Indicative next Steps** - Describes if the initiative is realised within this scope of work or requires a subsequent Task Plan and implementation.

Datasheet (Example)

WAM3

Indicative Sponsor	Initiative Title	
NDA	Incentivise waste minimisation	
Priority	Method of Implementation	
Very High	National LLW Strategy Team	

Description

Introduce financial incentives and targets for waste minimisation to drive improvements in behaviour, preferably cascaded to projects at the point of generation. Currently waste minimisation investments are typically sanctioned against the cost of available alternatives such as LLWR disposal. On some sites the cost of waste management is covered as a site overhead and not accountable to individual projects generating the waste. Increased incentives would allow each site flexibility to find the most efficient way of making improvements. Internationally, the implementation of incentive and fee earning schemes has significantly reduced waste volumes and improved waste management culture.

Scope

A standardised incentivisation scheme will be developed for inclusion in incentive contracts for SLC. The schemes will focus on targeted waste avoidance and minimisation goals that incorporate principles for performance-based incentives. PBI metrics that are Specific, Measurable, Achievable, Realistic, and Timely will be developed and provided for site consultation prior to contract incorporation to ensure proper understanding and commitment for implementation. It is proposed that additional phased incentivisation tasks are developed within this scope of work to collaborate and maximise good practice. These include, but are not limited to, regulatory, CFAs and pricing incentives.

Key Deliverable	Classification	Provision in Plan
Performance-Based Incentives for Waste Management Hierarchy Implementation	Quick-win	Yes

Schedule

	Start	Finish
• Preliminary evaluation of incentivisation scheme via workshop	29/06/09	21/08/09
• Develop PBI metrics	22/08/09	31/03/10
• Co-ordinate additional phased incentivisation tasks	01/03/10	24/09/10

Indicative Next Steps

This is the primary element towards incentivising waste minimisation. On completion of this deliverable, subsequent phased Task Plans will be required to complete this initiative.

Waste Avoidance/Minimisation (WAM)

Initiative	Cost Benefit	Implementation Method
Standardise waste avoidance and minimisation programmes	>£200m	National LLW Strategy Team
Improve consistency of application of Nuclear Industry Code of Practice (NICoP)	>£50m	Expert Working Group
Incentivise waste minimisation	>£200m	National LLW Strategy Team
Identify and share waste avoidance and minimisation good practices	>£50m	National LLW Strategy Team

Waste Characterisation (WC)

Initiative	Cost Benefit	Implementation Method
Standardise characterisation programmes	>£200m	NDA Site Lead
Consolidate R&D on Characterisation	>£50m	NDA Site Lead
Identify and share characterisation good practices	>£50m	National LLW Strategy Team
Centralise provision of characterisation equipment and/or SQEP Resources	£50m - £200m	LLWR Consignor Support
Re-estimate wastestream characterisation	<£50m	NDA Site Lead

Waste Segregation/Categorisation (SC)

Initiative	Cost Benefit	Implementation Method
Develop guidance on segregation good practices	>£50m	LLWR Consignor Support
Incentivise segregation of wastes	>£200m	LLWR Consignor Support
Standardise design of waste segregation facilities	>£200m	NDA Site Lead

Waste Treatment (WT)

Initiative	Cost Benefit	Implementation Method
Incentivise treatment of wastes	>£200m	National LLW Strategy Team
Develop metal treatment routes	>£200m	LLWR Consignor Support
Develop incineration routes	>£200m	LLWR Consignor Support
Enlist supply chain to provide new waste treatment facilities, capacities, and capabilities	>£200m	LLWR Consignor Support

Waste Treatment (WT) - continued

Initiative	Cost Benefit	Implementation Method
Improve efficiency and utilisation of existing incinerators at nuclear sites	£50m - £200m	National LLW Strategy Team
Improve efficiency of existing NDA metal decontamination facilities	£50m - £200m	National LLW Strategy Team
Consolidate R&D on orphan and hazardous wastestreams	>£200m	NDA Site Lead

Recycle/Reuse and Exempt Waste (RR)

Initiative	Cost Benefit	Implementation Method
Identify and share re-use and recycling good practices	<£50m	National LLW Strategy Team
Develop mechanism for co-ordination of supply and demand for materials	£50m - £200m	NDA Subcontractor
Re-use/recycle waste in new construction projects in nuclear industry	>£200m	Strategy Group Subcommittee
Re-use/recycle in new construction projects outside nuclear industry	£50m - £200m	National LLW Strategy Team

Waste Disposal (WD)

Initiative	Cost Benefit	Implementation Method
Develop alternative routes for exempt waste disposal	£50m - £200m	National LLW Strategy Team
Develop alternative routes for VLLW disposal	>£200m	LLWR Consignor Support
Develop on-site/near-site disposal of VLLW on existing NDA sites	>£200m	LLWR Consignor Support
Develop on-site/near-site disposal of LLW on existing NDA sites	>£200m	National LLW Strategy Team
Disposal of some LLW to Deep Geologic Repository (e.g. long-lived isotopes)	>£200m	National LLW Strategy Team

Waste Disposal (WD) - continued

Initiative	Cost Benefit	Implementation Method
Disposal of short-lived ILW in near-surface facilities	>£200m	National LLW Strategy Team
Consider alternative vault designs	£50m - £200m	LLWR Site Project Delivery
Optimise closure of LLWR	<£50m	LLWR ESC Project Team
Disposal of NORM to alternative facilities	<£50m	DEFRA
Develop decay storage of short-lived LLW	£50m - £200m	National LLW Strategy Team
In-situ management of contaminated land	>£200m	NDA

Waste Packaging (WP)

Initiative	Cost Benefit	Implementation Method
Develop methods and tools for improving waste packaging efficiency	£50m - £200m	LLWR Consignor Support
Use of reusable containers for transport of LLW	£50m - £200m	LLWR Consignor Support
Introduce inner-disposal liners for non-compactable wastes	£50m - £200m	LLWR Consignor Support
Introduce puck overpacks for compactable wastes	£50m - £200m	LLWR Consignor Support
Introduce small modular containers for segregated wastes	£50m - £200m	LLWR Consignor Support
Introduce reinforced bags for VLLW	£50m - £200m	LLWR Consignor Support

Waste Transportation (TRAN)

Initiative	Cost Benefit	Implementation Method
Use of transport hubs	<£50m	LLWR Consignor Support
Increase use of rail transport	<£50m	LLWR Consignor Support
Integration of LLW and spent fuel shipments	<£50m	LLWR Consignor Support
Transport of large components whole	<£50m	LLWR Consignor Support

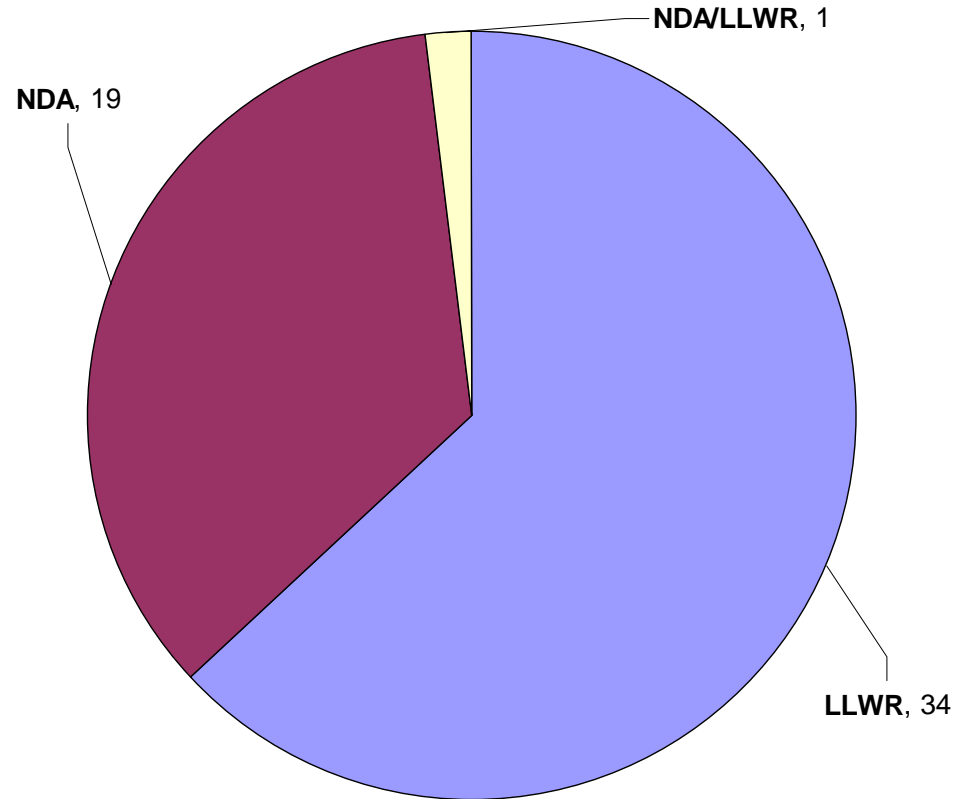
Waste Tracking/Inventory Management (TIM)

Initiative	Cost Benefit	Implementation Method
Simplify waste consignment processes	<£50m	LLWR Consignor Support
Improve waste quality assurance processes	<£50m	LLWR Consignor Support
Consolidation and archiving of LLW records	<£50m	NDA
Improve waste forecasting	<£50m	LLWR Consignor Support

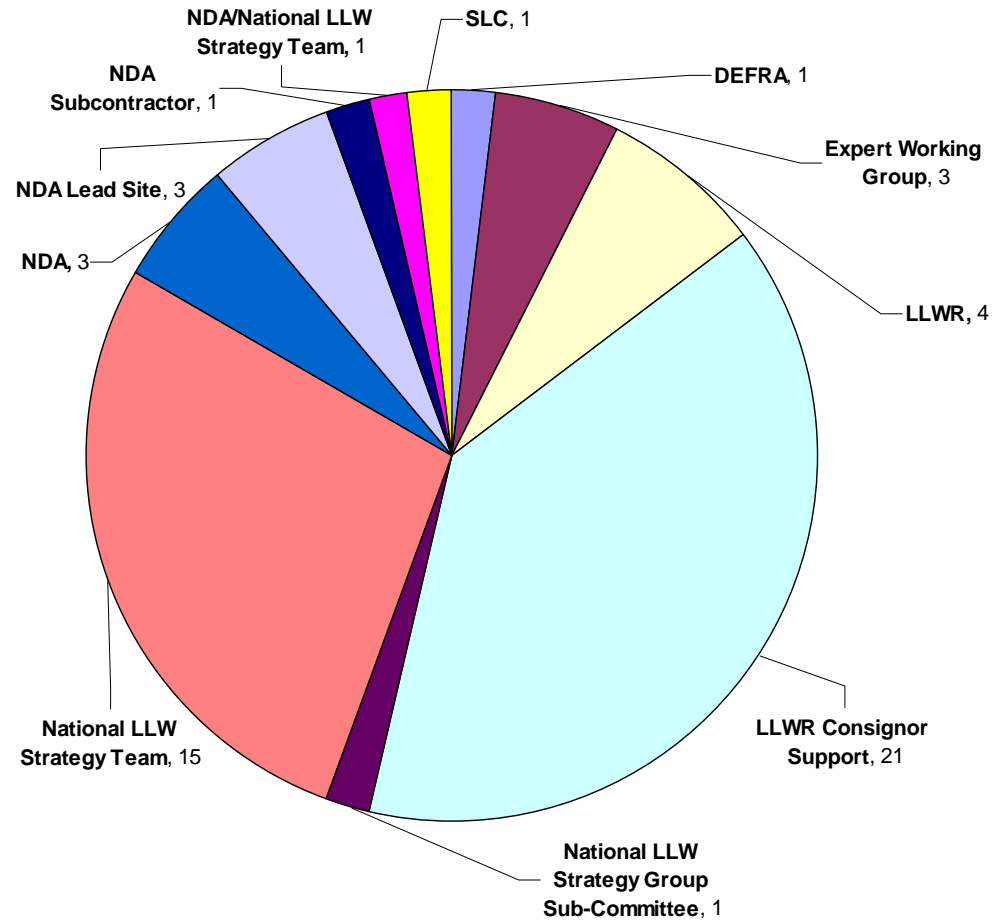
Other (OTHER)

Initiative	Cost Benefit	Implementation Method
Development of UK LLW Strategy	>£200m	NDA/National LLW Strategy Team
Preparation of National strategic option assessments	<£50m	National LLW Strategy Team
Enhance communications within LLW management community	<£50m	National LLW Strategy Team
Establish principles for Decontamination and Decommissioning	<£50m	Expert Working Group
Develop strategy to optimise use of current/future NDA assets	<£50m	NDA
Introduce risk-based classification of radioactive substances and waste	>£200m	LLWR ESC Project Team

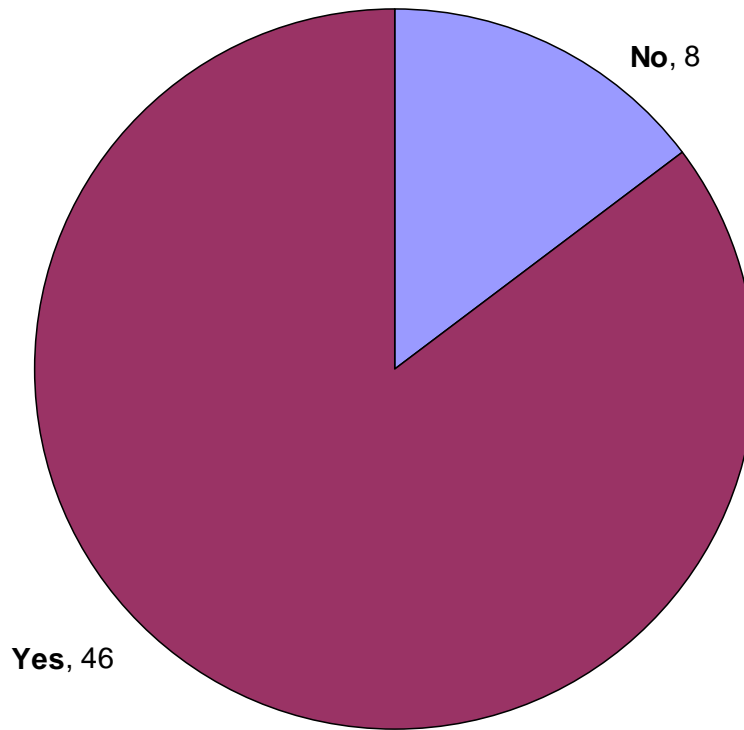
Breakdown of Initiatives – Indicative Sponsors



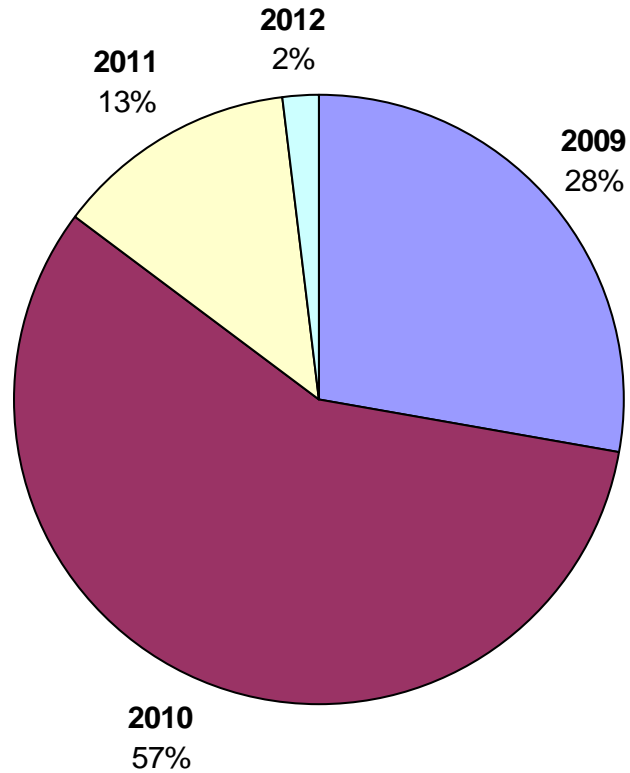
Breakdown of Initiatives - Methods



Breakdown of Initiatives – Provision in Plans



Breakdown of Initiatives – Year of Completion



Summary

- In order to maximise the use of this Plan, the initiatives must be collectively implemented across the NDA estate
- The collective implementation of the initiatives could produce a step-change improvement in LLW management practices and contribute significant long-term savings of over £1 billion
 - Reduce the LLW baseline costs
 - Extend the life of LLWR
 - Achieve significant environmental and sustainability benefits
- The status of this plan will be kept under regular review to reflect changing funding, regulatory and strategic environments
- Revise and issue the Management Plan on an annual basis