National Waste Programme

Quarterly Report

Quarter 3 FY20/21

This report provides a "snapshot in time" of the progress being made within the National Waste Programme (NWP) community to achieve the strategic objectives of the programme. The report provides updates from NDA-estate waste producers, including a look-back, focus areas for the next quarter and a status update table on projects; events and significant deadlines for the coming quarter; information on engagement with the NWP's series of training modules; and updates / changes to the threats / opportunities register.

For more information, please contact nwp@llwrsite.com

1. Overview – National Programme

1.1. Quarterly Update

- The output of the 2020 Environment Permit Review was finalised, and a summary made available to the NWP Monthly Managers community. The outcomes were later discussed with the regulators at the NWP Regulatory Meeting.
- The LLWR Expert View area went live in the LLWR Waste Management Services group on the NDA Hub. This area will contain the summary output from Expert Views delivered in LLWR for wider learning and use by others.
- The NWP facilitated a workshop for the Problematic Waste Integrated Project Team providing stakeholder validation of the output of preferred options identification for treatment of radiologically contaminated mercury.
- The NWP hosted the first Customer-Supplier Event, which brought waste producers and suppliers on the Metallic Treatment Framework together to enable sharing of information about the capabilities within the supply chain. It was well received by stakeholders and the second of these, focussing on the combustible framework, is planned for February 2021.
- The NWP participated in an RWM workshop on developing a Good Practice Guide on the application of BAT / BPM for HAW.
- The initial deliverable from the LLWR Disposal Models Phase 3 project – summarising customer ideals for a future disposal service model – was received from the contractor and internally reviewed.
- The kick-off meeting was held with the contractor on the Supply Chain Waste Acceptance Criteria Mapping project and information gathering work has commenced.

1.2. Peer Reviews & Assists

- The Rolls-Royce Submarine Ltd Peer Assist was completed with the publication of the summary report on the NDA Hub.

1.3. Key Meetings

- The Programme Office, Waste Management Services, Waste Inventory and Compliance, Environmental Safety Case and the Site Infrastructure Teams supported workshops held by Magnox Ltd on Integrated Waste Strategy for Continuous Reactor Decommissioning (CRD) and on the outputs of the initial LLW analysis for CRD.
- The first post-COVID Delivery Overview Group meeting was held virtually with good attendance from across the LLW management community.
- The first virtual LLW Practitioners Forum was held in November. The forum was split over three shorter sessions and was well attended by a range of NDA and non-NDA Waste Producers.

1.4. Focus areas for next Quarter

- Completion and submission to NDA of the final deliverables of the LLWR Disposal Models Phase 3 project, the Waste Management Culture project, and the NWP / IWMP Integration project.

2. Waste Management Services

2.1. Quarterly Update

- A meeting has been held between the LLW Customer Team and Magnox Ltd to review the scope for the Service Information for the Harwell Offsite Discharge Pipework (ODP). There are approximately 1600 sections of cast iron ODP which require treatment through the LLWR metallic framework.
- All three Gemini containers under the Type B Packaging Capability Programme have now been delivered to Harwell and all ancillary equipment to undertake maintenance and testing is back at the LLWR site. LLW Repository Ltd now has all containers, furniture and spares delivered to the UK following the 2-year refurbishment campaign. Over the next few months Site Acceptance Testing activities will be progressed at Harwell and Sellafield ahead of active operations.
- Advice was provided to DSRL on the acceptability of various solid radioactive wastes for treatment via the incineration route. A scope for a first trial use of this service is being co-developed.
- A meeting was held with representatives from Sellafield Ltd who are planning the LLW metals strategy over the next 25+ years. An overview was provided of LLWR's current and future capability through the frameworks and the information used for procurement strategies.
- EU Transition – Dialogue is being maintained with road hauliers (in relation to the revised Border Operating Model) and treatment service providers (in relation to metallic waste consignments to Sweden and Germany pending new Trans-Frontier Shipments authorisation). Contingency arrangements to maintain metallic waste services are in place and have been tested in the run-up to transition.
- A new Waste Loading Plan Process customer consultation has started following the publication of a new Waste Loading Plan template and process. The changes aim to provide customers with more flexibility in how they complete this stage of the consignment process.
- Following the announcement from one of LLWR's key suppliers on the Transport Framework that they are leaving the UK market, a large amount of work has been completed to ensure continuity of service for Magnox Harwell's Liquid Effluent Treatment Plant remediation programme. A new contract was swiftly mobilised to ensure continuity of service, and the new haulier has been embedded within the overall project team, ensuring a smooth transition and garnering praise from the customer.

2.2. Focus areas for next Quarter

- Delivery of the second Customer Forum.
- Continued enhancement of the process for the delivery of opportunity projects.

3. Overview – Sellafield Ltd

3.1. Quarterly Update

Operationally, the Q3 focus has been on resolution of a data truncation error in the fingerprint database, working through the backlog of wastes that arose as a result of the identified issue, and continuing to operate safely under COVID-19 conditions. All fingerprints have now been satisfactorily reviewed, enabling a significant step up in the volumes of waste transferred for recycling, incineration and off-site and on-site landfill disposal.

Good progress has been made on a range of transformation activities, including;

- A Head of Waste is now in post and several workshops held to support the introduction of the new Waste programme. A Technology Improvement Plan has been approved, and several updated processes are being trialled.
- A detailed metals capability study has been initiated.
- Initial meeting held with LLWR, NDA and SL reps to progress a LLWR-led case study assessing potential storage of WAGR boxes at the Repository. The case study will focus on the full range of WAGR boxes and will consider a range of aspects, including storage conditions and locations, planning, permitting, and licencing. It is intended to be completed in April 2021.
- Positive engagement with LLWR to discuss the Alpha sort and segregation active demonstrator project; which is focussed on the breakdown of legacy PCM crates and trialling a range of decontamination and monitoring approaches to maximise the volume of material that can be segregated for management as LLW. Follow-up engagement planned to further discuss proposed assay approaches, material volumes and approach to divert the segregated waste.
- Further stakeholder workshop held to support completion of a BAT study assessing the approach to replace the existing on-site landfill capability (CLESA). Supporting engagements undertaken with EA and NDA to outline the range of workstreams that are being progressed to maximise the re-use of excavated soil and minimise disposal. The completed BAT assessment has been circulated for initial peer review.
- Characterisation analysis successfully reduced the mass of non-radioactive asbestos bricks waste required to be managed as hazardous waste from 320te to 20te and has enabled a significant quantity of HEPA filters to be diverted away from LLWR disposal. Good progress has been made in reducing on-site holdings of legacy chemicals.
- In addition, information has been submitted to the NWP-led LLWR future disposal service, and mis-consignments workstreams, and to the development of a culture programme.

3.2. Focus areas for next Quarter

- Formalise learning from the fingerprint review workstream, document findings and jointly review learning with LLWR.
- Further progress the programme of work to take forward the findings of the waste management Board of Inquiry.
- Support taking forward the LLWR WAGR box storage case study and re-invigorate the WAGR box disposal workstream.
- Further progress the Active Demonstrator workstreams and the arrangements to complete the required AGR graphite sampling
- Formalise the output from CLESA replacement capability BAT assessment and initiate the follow-up work.
- Progress the metals capability study and a follow-up workstream on process and organic waste.

4. Overview – Magnox Ltd

4.1. Quarterly Update

At the beginning of Q3 Magnox sites were starting to ship waste following national COVID lockdown measures being gradually lifted. By the end of Q3, all sites were shipping waste and a total of 57 shipments were made between August and December across the metallic, combustible and VLLW routes. A forecast of shipments for Q4 was issued at the end of December.

Work has continued on the planning for continuous reactor decommissioning (CRD) at Trawsfynydd site. In particular a high level characterisation strategy has been produced and collaborative efforts between Magnox and LLWR on potential waste management routes have almost completed the initial waste sentencing activities.

The following is an overview of some of the other areas of work that progress has been made in Q3:

- A series of meetings with LLWR regarding scope and delivery arrangements for WCASS III.
- Continued IWMP engagement at steering board and programme group level including participation in the stakeholder event in November. Magnox is actively involved in supporting the waste culture project with a number of staff taking part in interviews.
- Progress continues to be made in preparing to commence retrievals of TRS drums at Winfrith, including crane repairs, container preparations, and railhead inspections.
- Development of programme blueprint for the Magnox Waste Management Improvement Programme.

4.2. Focus areas for next Quarter

- Completion of Trawsfynydd characterisation approach document to support the CRD programme.
- Completion of initial waste sentencing for CRD low activity wastes at Trawsfynydd.
- Development of a routemap to accompany the programme blueprint for the Magnox Waste Management Improvement Programme. Planning of tranche 2 activities.
- Complete reports on waste management benchmarking and waste management culture.
- Participate in NWP discussion on characterisation scope for the next financial year.
- Development of JWMP19.

5. Overview – Dounreay Site Restoration Ltd

5.1. Quarterly Update

- Operations:
  - LLW Plants were available for operations during Q3, however decommissioning activities were limited to Clean waste consignment only as the Fingerprint validation and underpinning exercise continues.
  - Non-critical LLW projects such as diversion of Non-Containerised wastes and Oils and Solvents have been on hold due to Site and National COVID-19 guidance.
  - Supercompaction of a limited cohort of drums progressed to free the HHISO-Loading Facility for a new HHISO to receive arisings from facilities with approved Fingerprints early in Q4.
  - No encapsulation operations this period.
  - De-stack / Re-stack of around 160 HHISOs at the LLW Disposal Facility was completed.
- Compliance:
  - A small number of high priority Fingerprints have been approved for use by plants / projects. Customer Service Level Agreements agreed and approved to permit controlled LLW generation of compliance related LLW and OoSoR wastes for facilities awaiting updated Fingerprints.
  - Fingerprint Data Reviews and Gap Analysis ongoing throughout Q3.

5.2. Focus areas for next Quarter

- Resume consignment of compliant LLW for waste processing / disposal, to include a campaign of Encapsulation Plant / D3100 vault disposal operations.
- Preparation of Non-Containerised Waste for off-site diversion via LLWR Framework.
- Complete stored LLW HHISO container voidage assessments and prepare BPM Statements.
- Consignment of Oils and Solvents for off-site disposal through LLWR Waste Services Contract.
- Continue review and revision of Dounreay Fingerprints.

6. Overview – LLW Repository Site

6.1. Quarterly Update

- All 4 MAFI Bogies have been consigned to Cyclife for Metals Treatment. There has been significant learning and this will be formalised and shared.
- Current Metals WEN has been extended to March 2021.
- A couple of metals consignments had to be cancelled due to a COVID outbreak in Cyclife. This resulted in two of our containers not being returned for 2 months (they were delivered just before Christmas).
- Supporting BAU and Projects with Project Waste Management Plans.
- Submission of Problematic Waste Inventory completed.
- Waste Workshop held with our Technical Support Team – this was beneficial with regard to forward planning. Schedule has been sent out to relevant stakeholders.
- Accelerated 4x VLLW consignments to Suez.
- UKRWI Improvement Plan (Dec 2020 review) complete.
- Reactive metals issues with two of our Vault Disposal containers. Discussions have been held with the Acceptance Team and Nuclear Safety Case Team to achieve the best outcome.
- Bag Assay continues following restart in Sep 2020, the ability to assay wood bags should be up and running soon.

6.2. Focus areas for next Quarter

- Consignment of 1x DGF VLLW container that was due to be shipped in March 2020 (1 was consigned in August 2020).
- Large items from demolition to be assessed and prepared for consignment this year.
- WEN to be prepared for Haz VLLW bags.
- Preparation and loading of batteries, cadmium and ion exchange units into drums for consignment.
- Continue consignments for metals.
- Continue providing support to the BAU projects as they arise.
- Provide support to the Drum Re-characterisation Project.

7. Forward Calendar

January 2021						
M	T	W	T	F	S	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

07/01/2021 – NWP Monthly Report Waste Producer Submission Deadline (December)
18/01/2021 – LLW NWP Monthly Managers Telecon (T)
27/01/2021 – NWP Monthly Report Waste Producer Submission Deadline.
28/01/2021 – LLW NWP Mis-Consignment of Waste Definition Workshop

February 2021						
M	T	W	T	F	S	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

09/02/2021 – On-Site Waste Handling Facilities Peer Learning Event (session 1) (T)
15/02/2021 – LLW NWP Monthly Managers Telecon (T)
16/02/2021 - On-Site Waste Handling Facilities Peer Learning Event (session 2) (T)
17/02/2021 - On-Site Waste Handling Facilities Peer Learning Event (session 3) (T)
23/02/2021 – Combustible Customer Supplier Forum (T)
24/02/2021 – NWP Monthly Report Waste Producer Submission Deadline [Feb 21] (T)
25/02/2021 – IWMP Cost Norms Phase 1 Stakeholder Workshop (T)

March 2021						
M	T	W	T	F	S	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

15/03/2021 – LLW NWP Monthly Managers Telecon (T)

KEY

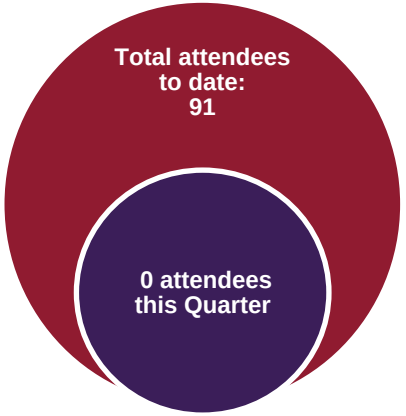
Meeting | Project workshop | Peer Review / Peer Assist | Deadline | Customer Forum

BM=Birmingham MA=Manchester WA=Warrington C=Cumbria T=Teleconference

8. Use of Training Modules

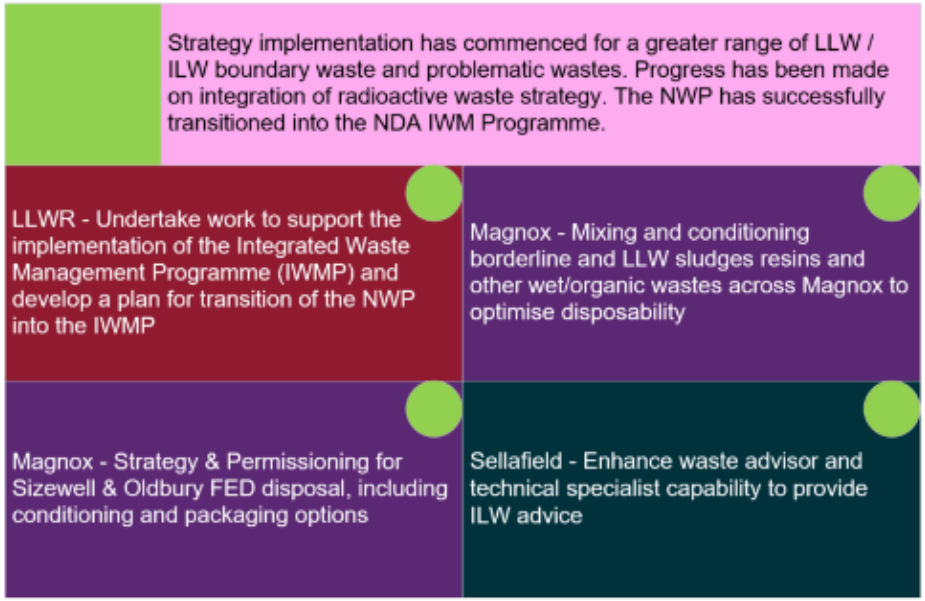
e-Learning

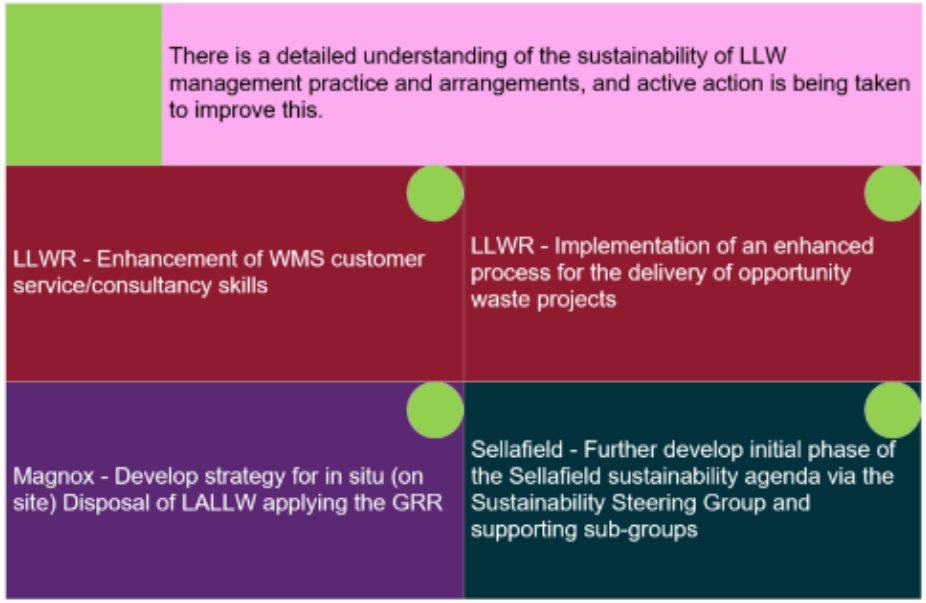
Classroom

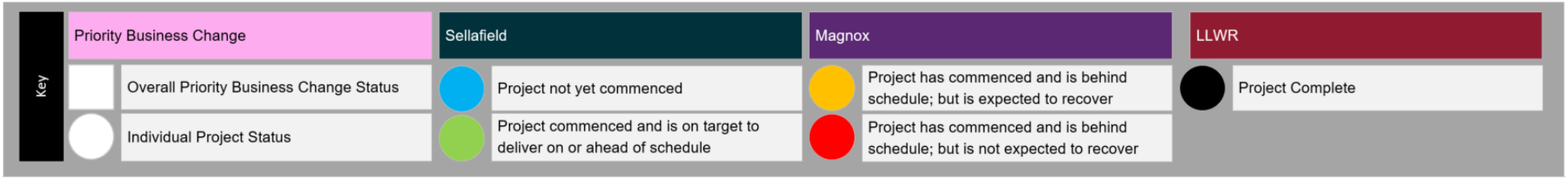


User feedback to date:

9. Performance against priority business changes







Waste-informed culture is prevalent across the industry and full LLW management value chain.	
LLWR - Deliver a project to explore the current state of waste management culture in the nuclear industry and identify opportunities for improvement	Magnox - Waste Management Culture Phase 1 (NWP/IWMP led project)
Magnox - Dungeness A boilers removal and treatment - characterise and optimise the process for removal and treatment	Sellafield - Produce overall plan and structure for the development of the SL waste culture

Consignors have easy access to information or specialist advice to enable understanding of acceptance criteria for treatment and disposal services.	
LLWR - Implementation of Customer-Supplier Fora	Magnox - WAC Clarity output development.(NWP led opportunity project)
Magnox – Participation in the EPR review (LLW and HAW) [NWP led project]	Magnox - Waste management database project

Key							
Priority Business Change		Sellafield		Magnox		LLWR	
	Overall Priority Business Change Status		Project not yet commenced		Project has commenced and is behind schedule; but is expected to recover		Project Complete
	Individual Project Status		Project commenced and is on target to deliver on or ahead of schedule		Project has commenced and is behind schedule; but is not expected to recover		

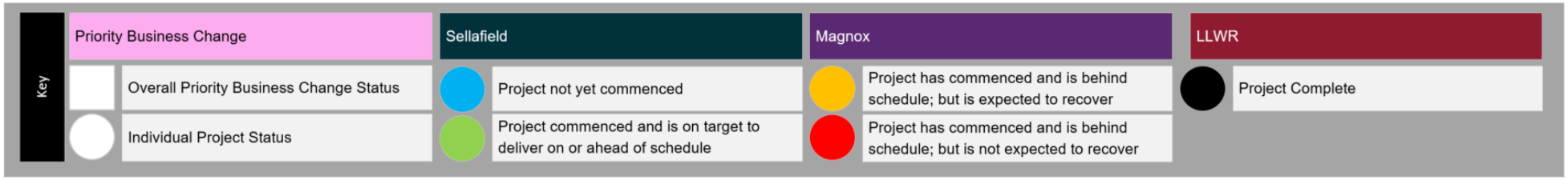
Waste management practice enables agile, efficient and effective waste flow management to support operations, decommissioning and site restoration. Waste management is fully risk-informed, enabling effective management of waste at the LLW / ILW boundary.

LLWR - Development of a Waste Characterisation Standard to support the NDA Good Practice Guide	Magnox - Waste Data Quality Improvements (NWP led project)	Magnox - Harwell Radiochemical facility. Work collaboratively with LLWR to develop an optimised model for characterisation of decommissioning wastes	Magnox - Waste consignment practices and mis-consignment controls
Magnox - Develop a need for site specific strategies to move away from past C&M (Care & Maintenance) arrangements into a more continuous decommissioning scope	Magnox - Waste management for scaled up decommissioning [NWP led project]	Sellafield - Building on the successful implementation of the PCM to LLW segregation capability, implement a programme of work to improve the segregation at source of alpha stream material that can be safely managed as LLW	Sellafield - Undertake combined assessment of potential on-site locations, off-site locations and supply chain options to establish whether to construct a replacement landfill capability post the filling of CLESA
Sellafield - Further develop decommissioning approaches, utilising LFE from ORANO and innovation from Innovate UK partners, to minimise, where practicable, the volume of ILW generated	Sellafield - Complete waste mis-consignment BoI Actions and the initial set up of a new Waste organisation and updated waste process	Sellafield - Work with LLWR to ensure that Decommissioning CHILW container (DCC), to be designed to support the management of contact handleable ILW arising from decommissioning, is also suitable for potential LLWR disposal	Sellafield - Develop and implement integrated approach for complete rad and non-rad characterisation of excavated wastes

Key

Priority Business Change	Sellafield	Magnox	LLWR
Overall Priority Business Change Status	Project not yet commenced	Project has commenced and is behind schedule; but is expected to recover	Project Complete
Individual Project Status	Project commenced and is on target to deliver on or ahead of schedule	Project has commenced and is behind schedule; but is not expected to recover	

	Reliable and appropriate local and national inventories are available that support and underpin decision making.
LLWR - Waste forecasting e-learning module development and launch	Sellafield - Undertake work to improve long term inventory management, including engagement with the NDA RWI process review programme that will be progressed post the 2019 update cycle



10. Strategic Threats and Opportunities

Strategic Threats					
	<2%	2-25%	26-50%	51-80%	>80%
	Very Unlikely	Unlikely	Possible	Likely	Very Likely
Severe	High (11)	High (15)	High (17)	Very High (19)	Very High (20)
Major	Medium (7)	Medium (9) 3 5	1 High (14)	High (16)	High (18)
Moderate	Low (4)	4 Low (5)	2 Medium (8)	High (12)	High (13)
Marginal	Very Low (1)	7 6 Very Low (2)	Low (3)	Medium (6)	Medium (10)

	Strategic Threat
1.	Significant waste mis-consignment event causes partial or full closure of diversion or disposal route(s).
2.	Insufficient radiological, non-radiological or volumetric capacity in the supply chain. Or excessive demand for capacity.
3.	Insufficient non-radiological, radiological or volumetric capacity at LLWR.
4.	Changes in legislation, governmental policy or regulatory perspective prevents or significantly impacts execution of LLW Strategy.
5.	Large, volumes of waste from rad contaminated land remediation generated and managed off-site as lower activity waste.
6.	Non-industry stakeholder concerns over radioactive waste management constrain access to existing routes and / or development of new routes and facilities.
7.	Global event (such as a future pandemic or war) impacts functioning of all parts of the LLW community, waste management and route availability.

Strategic Opportunities					
	<2%	2-25%	26-50%	51-80%	>80%
	Very Unlikely	Unlikely	Possible	Likely	Very Likely
Marginal	Very Low (1)	Very Low (2) 3 4	Low (3) 5	Medium (6)	Medium (10)
Significant	Low (4)	Low (5)	Medium (8) 1 2 6	High (12)	High (13)
Major	Medium (7)	Medium (9)	High (14)	High (16)	High (18)
Substantial	High (11)	High (15)	High (17)	Very High (19)	Very High (20)

	Strategic Opportunity
1	Positive step change in the sustainability of the supply chain.
2	Relevant ILW diverted from HAW disposal.
3	Buffer storage capabilities can be mobilised for contingency situations (only).
4	Improved use of transport infrastructure to support management of LLW.
5	Fit-for-purpose flexible and agile packaging fleets available for LLW management.
6	Management solutions available and in use for complex, challenging and problematic LLW (PW).