

NDA's R&D Programme

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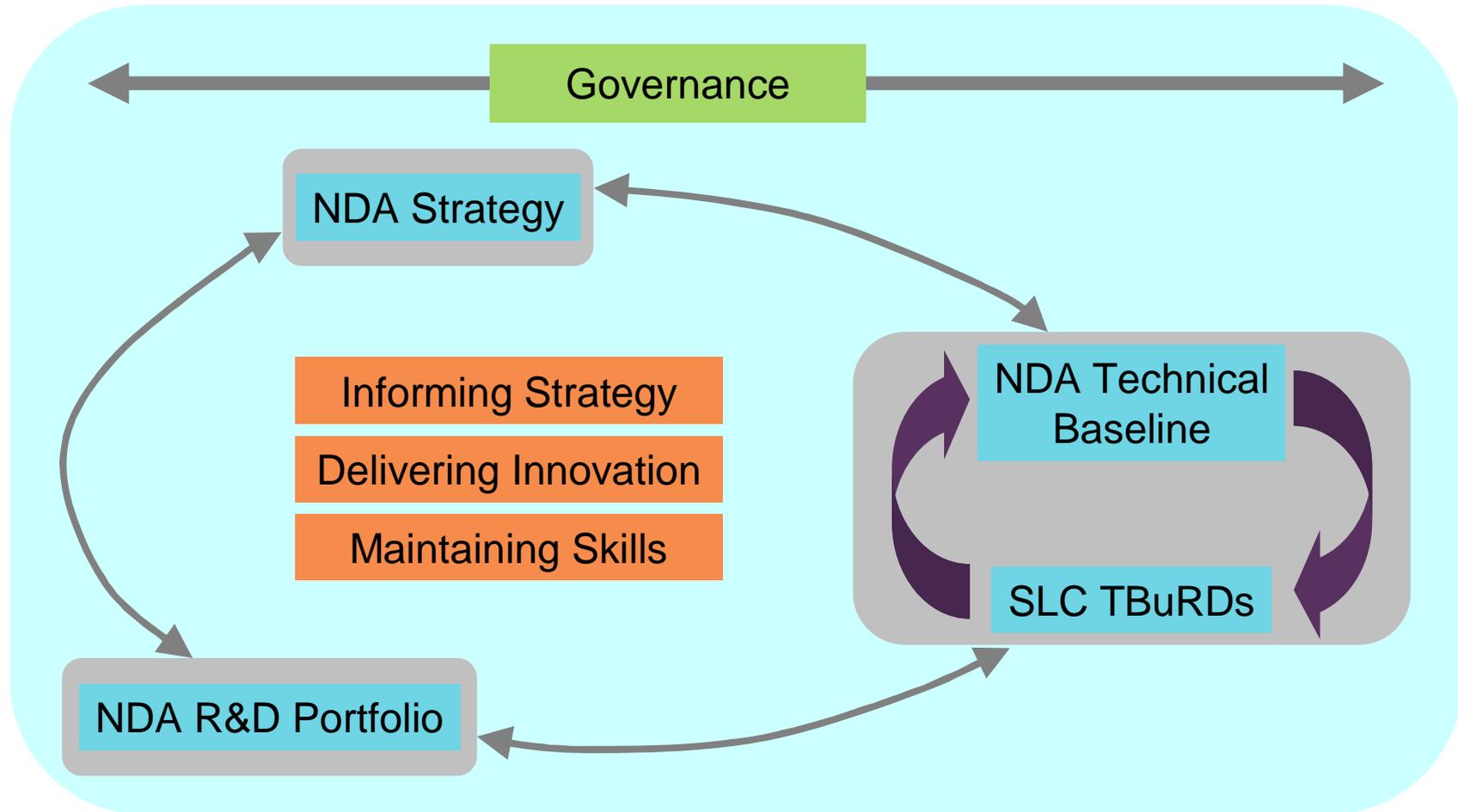
22 June 2012

R&D Strategy

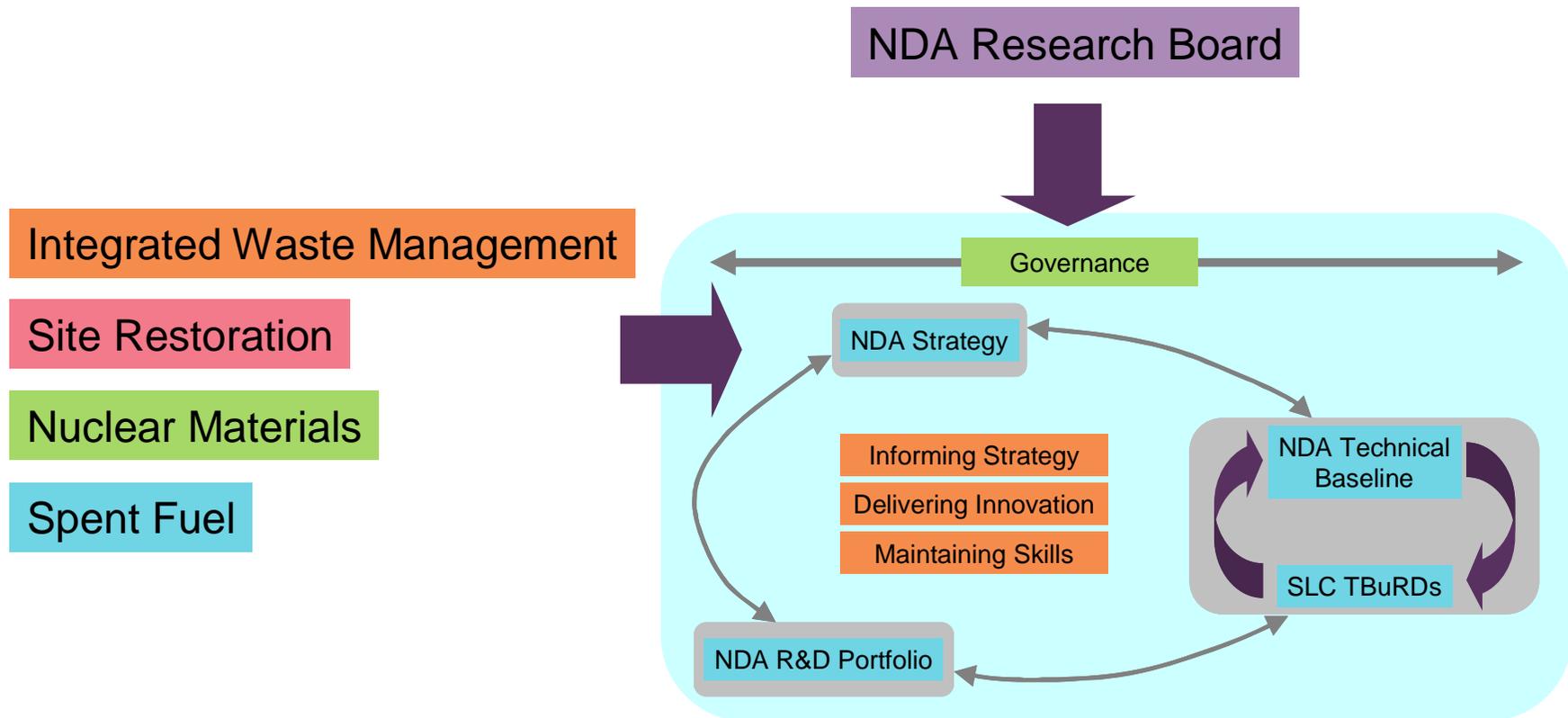
- **Objective:** To ensure that the delivery of the NDA's mission is technically underpinned by sufficient and appropriate R&D
- **R&D is undertaken by the SLCs and their supply chain**
- **Where necessary, NDA will maintain and sponsor a strategic R&D programme – Direct Research Portfolio (DRP)**
 - inform and develop strategy
 - encourage innovation
 - support key technical skills

Approach to R&D

Technical Underpinning



NDA Strategy



NDA Strategy

Key Interactions

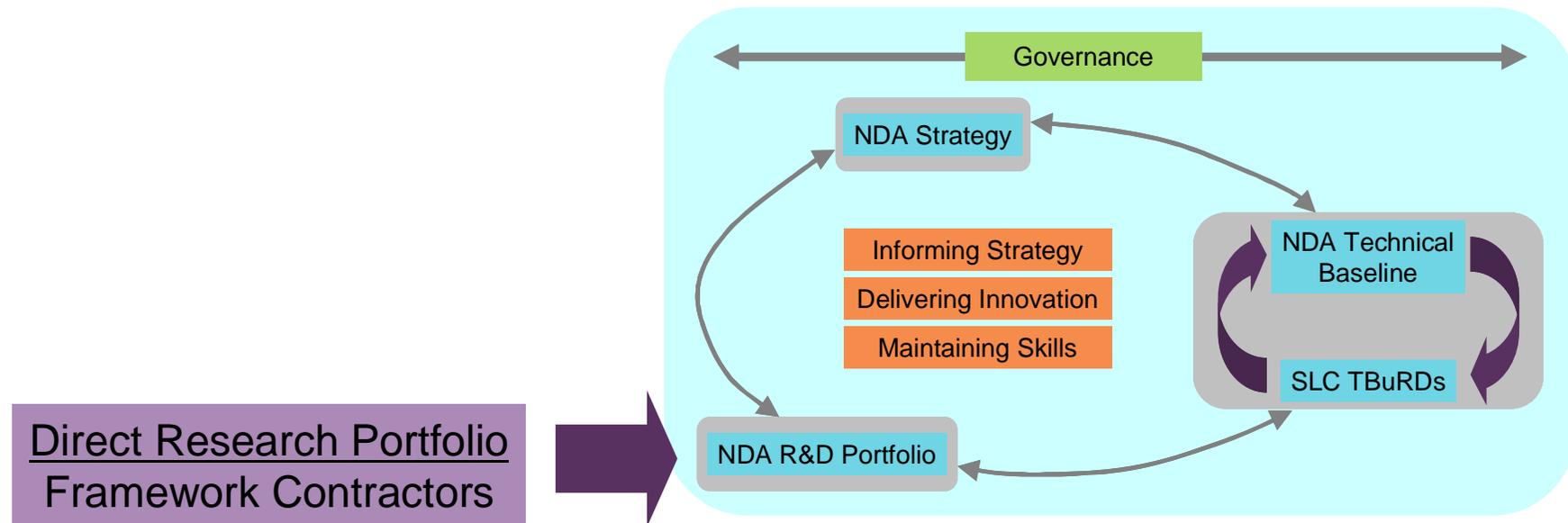
- **International Atomic Energy Authority (IAEA)**
 - International Radioactive Waste Technical Committee (WATEC)
 - Working group of senior international experts providing advice to the IAEA on radioactive waste management programme activities and directions, and supporting its implementation
 - Coordinated Research Projects (CRPs)
- **Nuclear Energy Agency**
 - Radioactive Waste Management Committee (RWMC)
 - Forum on Stakeholder Confidence (FSC)
 - Working Party on Management of Materials from Decommissioning and Dismantling (WPDD)
 - NEA Databank
 - Joint Projects
 - International Co-operative Programme on Decommissioning (CPD)
 - Thermochemical Database (TDB) Project

NDA Strategy

Key Interactions

- **EU FP7 Technology Platform: Implementing Geological Disposal**
 - The mission of the IGD-TP is to be a tool to support confidence-building in the safety and implementation of deep geological disposal solutions
 - NDA RWMD is a member and is on the Executive Group
- **Interactions through Memorandum of Understandings**
 - Detailed list available on NDA website – See International Relations
 - US Department of Energy – ‘Across the Pond’ newsletter
 - CEA (Commissariat à l'énergie atomique et aux énergies alternatives)
- **NDA Research Board**
 - Members from CEA and EU

NDA R&D Portfolio



NDA R&D Portfolio

Examples of Previous Projects

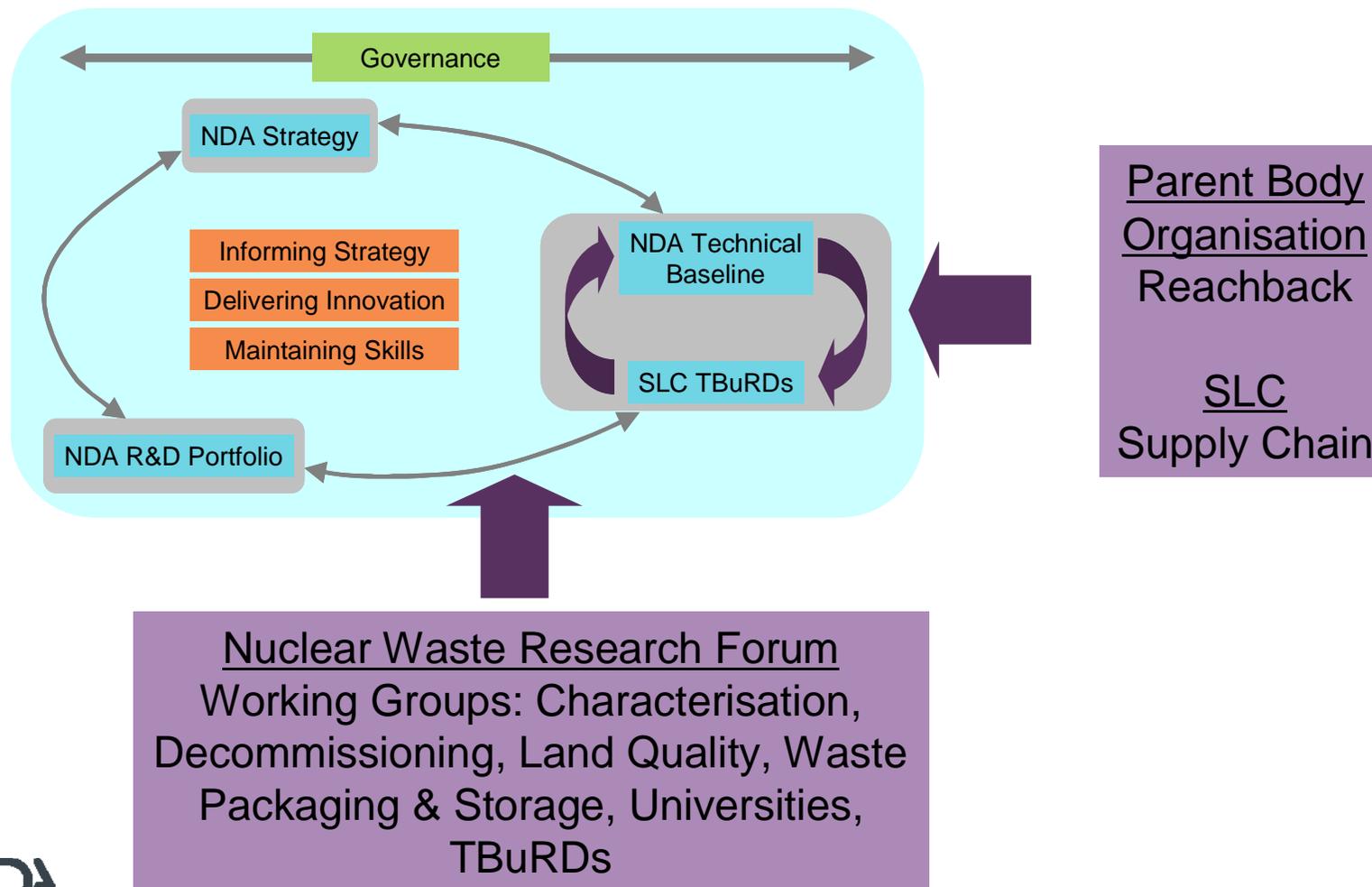
- **Behaviour Of PuO_x Under Radiolytic Conditions (ITU)**
 - Technically underpinning long-term storage of Pu
- **AGR Spent Fuel Options (SKB)**
 - Peer review of Sellafield Ltd options paper
- **EURATOM Projects (NNL)**
 - ACSEPT - Actinide reCycling by SEParation and Transmutation
 - ASGARD - Advanced fuelS for Generation IV reActors:
Reprocessing and Dissolution
 - ANDES - Accurate Nuclear Data for nuclear Energy Sustainability
- **NEA Projects (NNL)**
 - Economics of the back end of the spent fuel cycle

NDA R&D Portfolio

Re-competition of Direct Research Portfolio

- **Framework Contracts re-competed**
 - Lot 1: University Interactions
 - Lot 2: Integrated Waste Management
 - Lot 3: Site Restoration
 - Lot 4: Spent Fuel & Nuclear Materials
- **Major UK nuclear R&D organisations involved**
- **Increased involvement by SMEs**
- **Increased involvement of international organisations**
 - Examples: EnergySolutions, Siempelkamp Nukleartechnik, NRG, ONET Technologies, TÜV Rheinland, NuVision Engineering

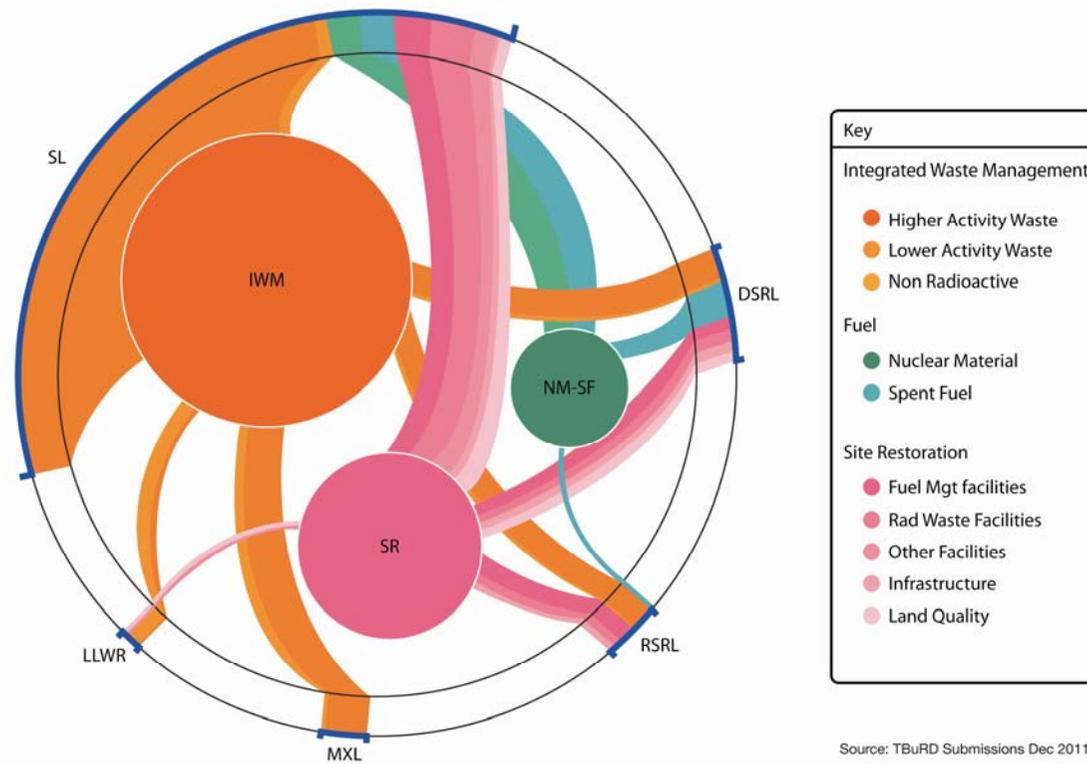
SLC TBUrDs



SLC TBoRDs

SLC Collaboration

NDA Estate-Wide Synergies



SLC TBUrDs

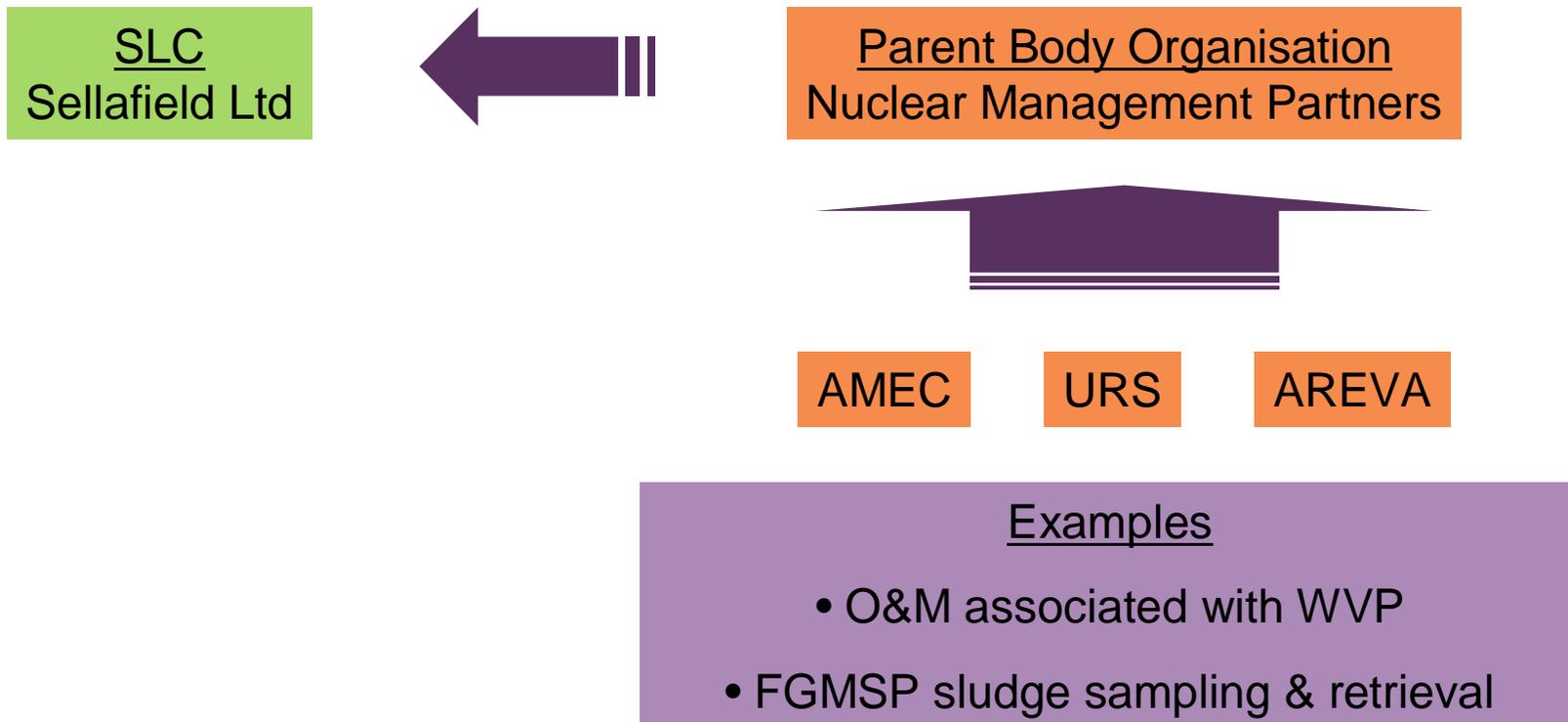
SLC Collaboration

- **NWRF - Characterisation**
 - **NEA Workshop on Radiological Characterisation for Decommissioning**
 - **Hosted at Studsvik in Nyköping, Sweden (17-19 April 2012)**
 - **‘Characterisation of land and groundwater’ Session Chaired by Sellafield Ltd**
 - **Papers presented:**
 - **The Sellafield contaminated land and groundwater management project: Characterisation of a complex nuclear facility**
 - **Characterisation of metal in support of decommissioning a reactor site**

SLC TBuRDs

Reachback

- Reachback from the Parent Body Organisation covers many different areas – including R&D



Future Interactions

- **UK firms could assist Fukushima clean up**
 - Framework on Civil Nuclear Cooperation signed during David Cameron's visit to Japan, providing the basis for UK companies to engage in multi-billion pound decommissioning opportunities in Japan
 - Royal Society of Chemistry symposium in Tokyo
 - Prof Neil Hyatt (University of Sheffield) - NDA and RAEng sponsored
- **Collaborative R&D**
 - Joint call between NDA, TSB, DECC and EPSRC (£14M)
 - Business opportunities for decommissioning being recognised

Summary

- **Highlighted the breadth of NDA's involvement in international R&D**
 - International Relations Strategy
 - Research and Development Strategy
- **Key mechanisms for interaction**
 - Memorandum of Understanding
 - Direct Research Portfolio
 - Reachback
- **Future Interactions**