Metal Recycling in the UK
A decade of developments

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Introduction

- UK has a mature nuclear industry
- Studsvik active in UK Waste Treatment since 2003
- Our experience highlights the change in adoption of metal recycling in 10 years
- Milestones
- Lessons Learned
- Conclusions
A decade ago…

- Limited focus on decommissioning planning, strategy or funding
- 10,000 m³ LLW disposed per year, “disposal culture”
- Inventory assessed as:
  - 400,000 tonnes LLW metallic waste
  - 400,000 tonnes VLLW metallic waste
- LLW disposal capacity filling up rapidly
Milestones Timeline

- NDA Formed 2004
- New LLW Policy 2006
- 2006
- 2007
- 2008
- 2009
- 2010
- 2011
- 2012
- 2013
NDA, Regulators & LLW Policy

- Consolidated national view of UK civil decommissioning
- National Liability Estimate for low activity wastes £9bn
- Environment Agency supportive
  - Demonstration projects
- New Government LLW policy:
  - LLW management plans
  - Waste minimisation
  - Early solutions
  - Proximity principle
  - Export of wastes for treatment with repatriation
Milestones Timeline

- NDA Formed
- New LLW Policy
- New LLWR Operator
- New LLW Strategy

- 2004
- 2006
- 2006
- 2007
- 2008
- 2009
- 2010
- 2011
- 2012
- 2013

Sellafield MEB demonstrator
Sellafield scrap demonstrator
LLWR and National Strategy

• Protecting disposal capacity as a national asset
• Implementation of the Waste Hierarchy
• New service introduction via supply chain
• Joint Planning of Waste Arisings
• Charging the true cost for disposal
  – 300% increase for some customers in this period
• Avoiding the need for a new repository
• Reducing the LLW cost burden
Milestones Timeline

- **NDA Formed** (2004)
- **New LLW Policy** (2006)
- **New LLWR Operator** (2007)
- **New LLW Strategy** (2008)

- **Licensing**
- **Production**

**Sellafield MEB demonstrator**

**Sellafield scrap demonstrator**

**Metals Recycling Facility development**
The Studsvik MRF

- UK’s first new Nuclear Licensed Site in over 20 years
- Permitted to receive waste from any UK radioactive waste producer
- Technology based on Swedish facilities, but without melting step
- ~50% is directly free released to UK market, 50% melted in Sweden
- Capacity ~2500 t/yr
- Private investment by Studsvik, without underpinning contracts
Metal Recycling Throughput

2011:
Increase in NDA funding for recycling

2012 onwards:
NDA Joint Planning & incentivisation of recycling targets
Milestones Timeline

NDA Formed 2004
New LLW Policy 2006
New LLWR Operator 2007
New LLW Strategy 2008

Licensing 2009
Production 2010

Sellafield MEB demonstrator
Sellafield scrap demonstrator
Metals Recycling Facility development
Berkeley Boiler Project
Lessons Learned
The Environmental Case

Carbon footprinting (Ferrous)

- Studsvik
- Raw metal

Strategic Best Available Technique

Transport
- ~ 15% of impact
- ~ 10% of cost

kg CO2 / 20t
The Financial Case

- LLWR benefits curve
- 2 years vault space saved already
- Underpins £1Bn business case
- Studsvik MRF has already saved UK taxpayer over £10M to date
- NDA estate recycled over 3000t in FY12/13
The Social Case

• Job creation and socio-economic benefits
• Consultation in permitting phases and open-door sessions for community
• Regulatory engagement & support
• Quality assurance of recycled metals
  – IAEA low hazard to human health from nuclear industry metal recycling compared to risks of orphan sources
• Presumption to Early Solutions
Conclusions
Conclusions

• Policy and Strategy supporting the Waste Hierarchy are essential
• Demonstration projects develop confidence in the techniques
• Disposal prices need to be at least equal to true costs of disposal
• Financial incentivisation of Governmental customers has provided the biggest impact on metal recycling

Looking Forward for the UK
• Improve understanding of European treatment capacity picture
• Fundholder planning on longer time horizons with commitments
• Consider harmonisation with RP-89 protocol for melting