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# Introduction on the Value Assessment Process & Case Studies

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# Content

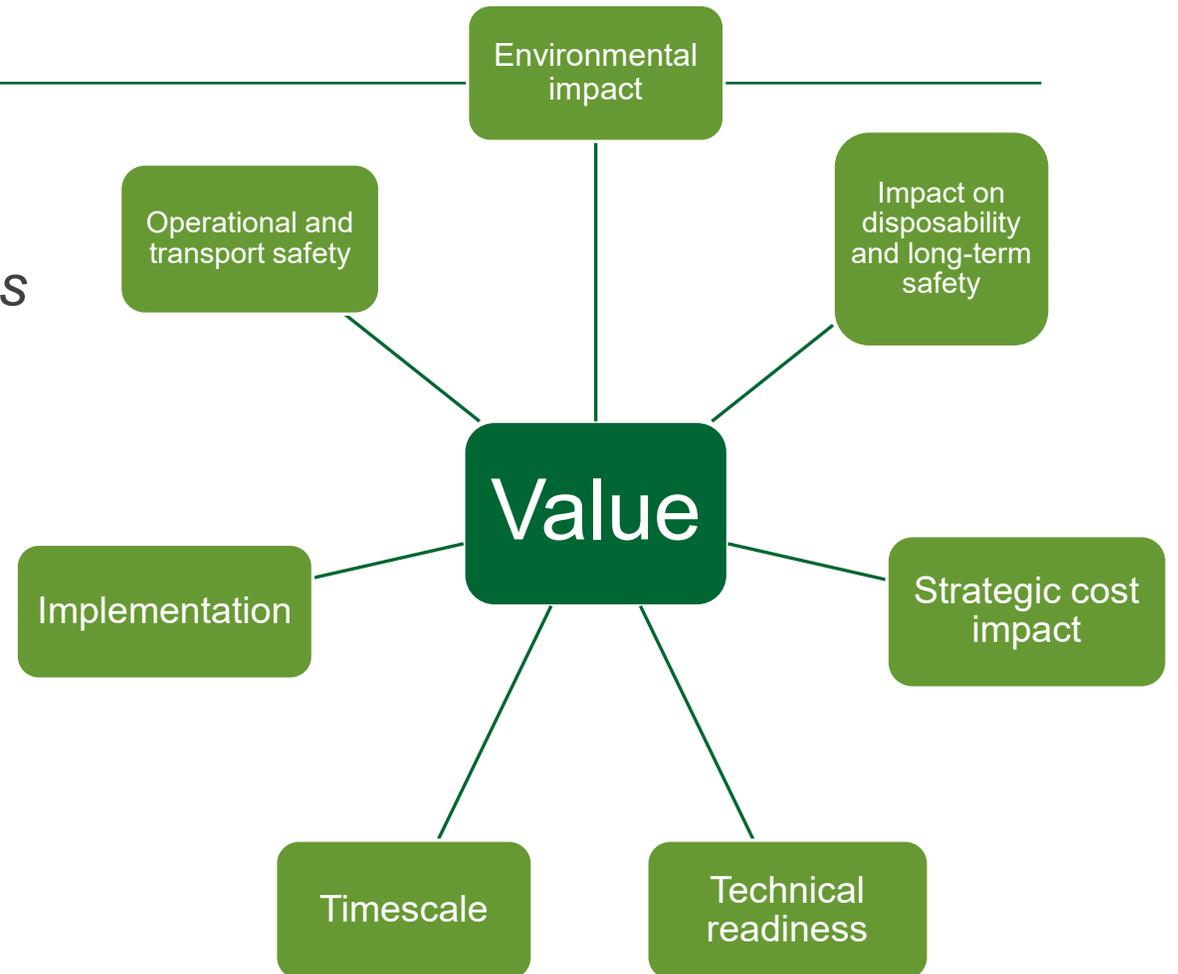
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1. Value assessment methodology
2. Scenario definition
3. PREDIS examples and wider applicability

# What is Value?

*“the realisable benefit in **safety, monetary and environmental** outcomes that will arise from implementing this technology at a specified time”*

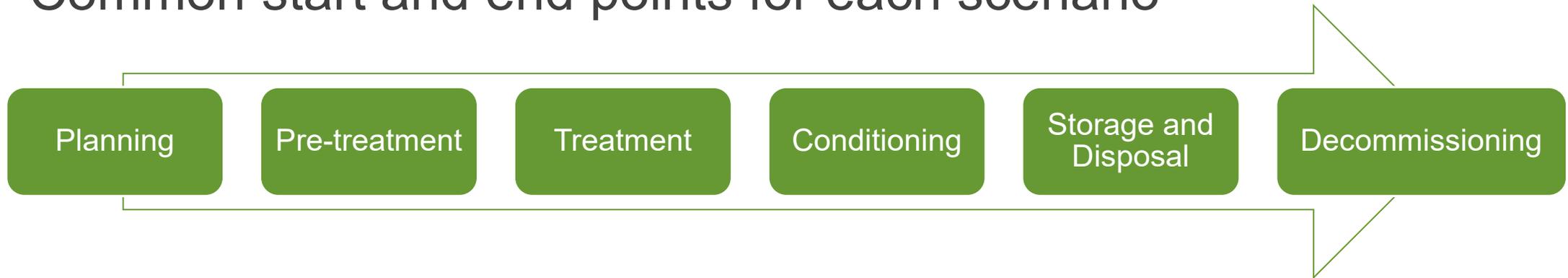
- Stakeholder priorities depend on their perspectives
- Supports engagement and collaborative decision making



## Scope of Assessment

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- Value is considered across the full waste management lifecycle
- Common start and end points for each scenario



# Value Assessment Structure

Attribute	Data Category	Assessment considerations					
		Planning	Pre-treatment	Treatment operations	Conditioning	Storage and Disposal	Decommissioning
Operational and Transport Safety	Facility construction and decommissioning						
	Waste pre-treatment requirements (conventional and radiological safety implications)						
	Waste post-treatment requirements (conventional and radiological safety implications)						
	Waste operational safety issues (e.g., ease of providing shielding during operation)						
	Transport safety issues						
Environmental Impact	Material requirements						
	Energy requirements						
	Secondary waste and gaseous/liquid discharges generated						
	Nuisance						
Impact on disposability / long-term safety	Ability to meet waste acceptance criteria						
	Disposability of secondary waste						
Implementation	Indicative lifetime feed						
	Ease of achieving required throughput for process (full-scale facility) (m <sup>3</sup> /year)						
	Potential to treat a wide range of waste groups (flexibility) including problematic and orphan wastes						
	Impact on waste management strategy						
Timescale	Design, construction and active commissioning timescale						
	Lifetime operating timescale						
	Decommissioning timescale						
Technical Readiness	Maturity of technology						
Strategic Cost Impact	Costs of construction, operation and decommissioning						
	Impact on disposal costs (total packaged waste volume, disposal route, and required storage and disposal capacity)						

## Evaluation process in PREDIS

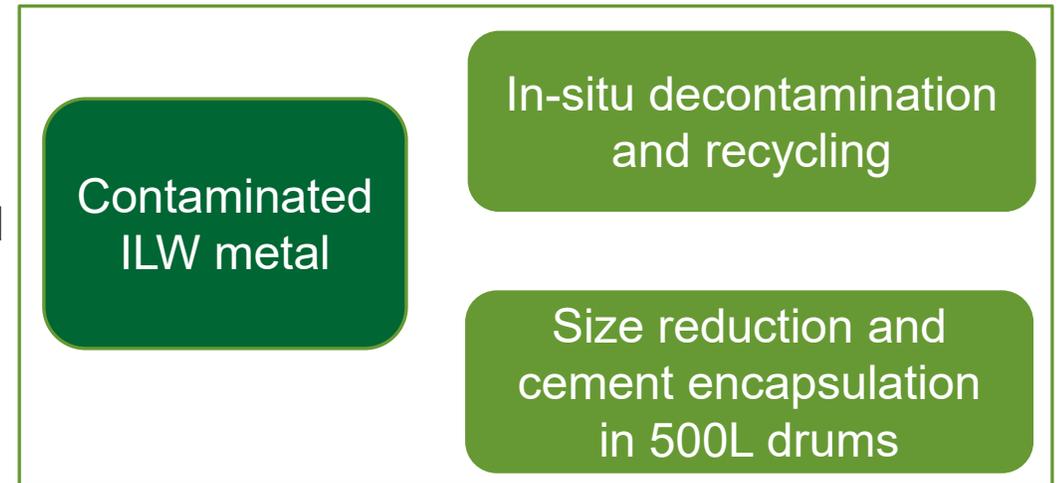
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- **Structured multi-criteria assessment** to inform strategic decision making
- Value Assessment workshops held in early 2024
- Participation by wide range of Partners and End Users

## Scenario definition

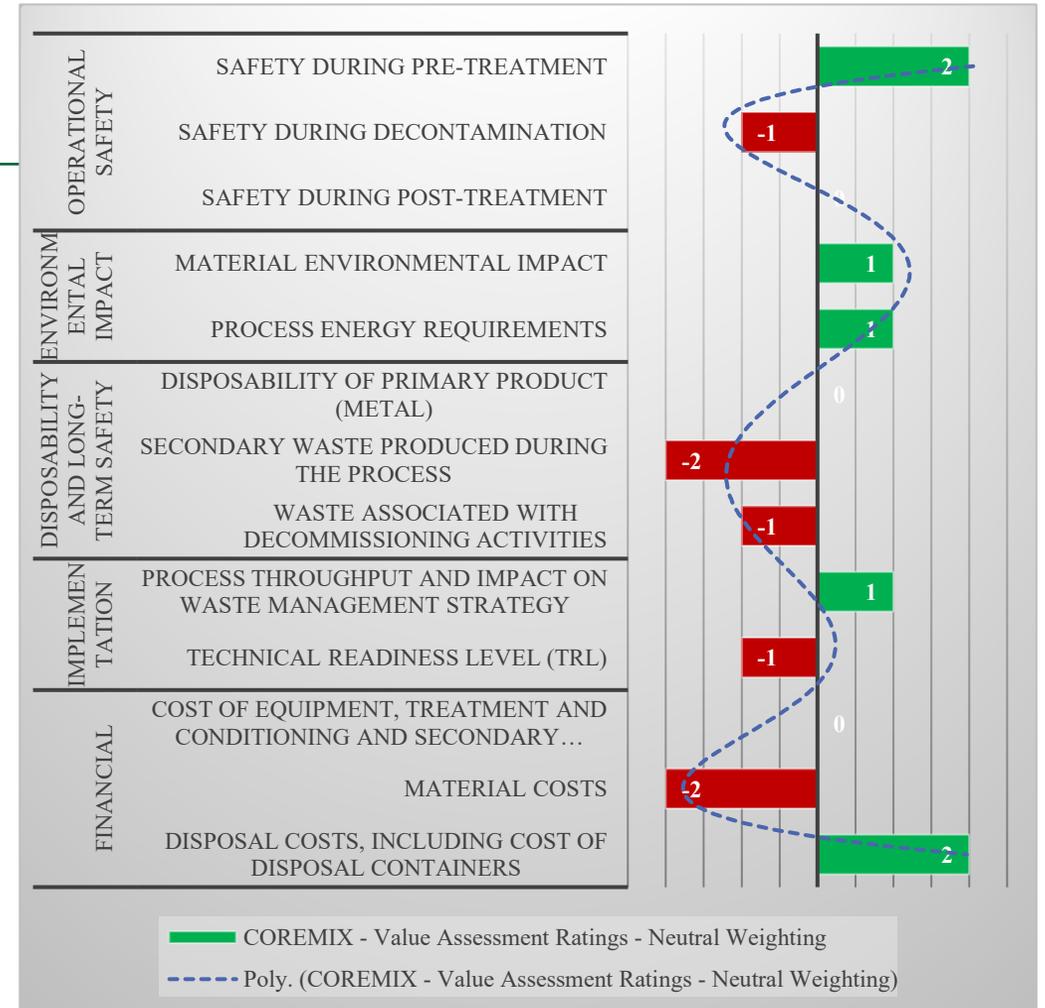
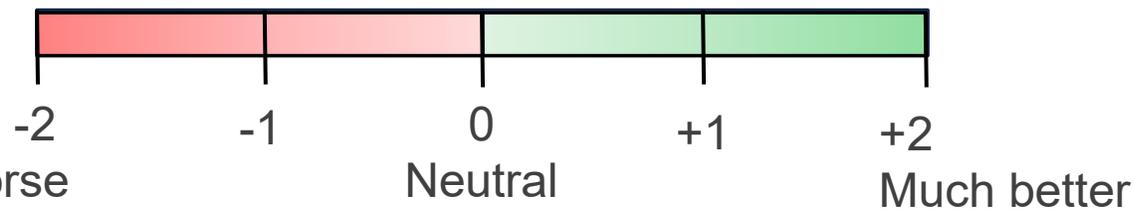
Example scenario from WP4

- Two types of scenarios:
  - **Variant scenarios:** Combination of waste types and treatment approaches / formulations developed in PREDIS
  - **Baseline scenario:** Current waste management practices for a given waste type
- Selection criteria:
  - Realism and relevance to PREDIS R&D
  - Data availability
  - Alignment with Life Cycle Analysis and Life Cycle Costing (LCA/LCC) PREDIS case studies



## 3. Example of an evaluation

- Comparative approach
- Focus on differentiators between the baseline and variant scenarios
- Flexible - qualitative or semi-quantitative, depending on data availability and uncertainties



## Value Assessment in PREDIS

WP	Deliverable or Milestone	Title	Lead	Due
4	MS25 D4.2	Value Assessment Workshop <i>Included in Synthesis Report on Management of Metallic Waste Streams</i>	GSL GSL	M42 M45
5	D5.5	Included in Report on Direct conditioning of liquid organic waste route	GSL	M46
6	MS47 D6.3	Value Assessment Workshop <i>Included in Economic, environmental &amp; disposability impacts of novel treatments report</i>	SCK-CEN GSL	M42 M42
7	MS54 D7.9	Value Assessment Workshop <i>Included in Economic, environmental, and safety impact report</i>	BAM GSL	M45 M45

**And providing underpinning data for PREDIS Case Studies**

