

# ADS ECO – High-Value Materials

## Maximizing Resource Recovery and Economic Value

High-Value Materials represents one of the most important value creation components within the ADS ECO Eco-Industrial Complex. Through advanced sorting, recycling, and resource recovery technologies, valuable materials are extracted from waste streams and transformed into premium secondary raw materials for industrial markets.

**ADS ECO**  
ECO-INDUSTRIAL COMPLEX

### HIGH-VALUE MATERIALS

Transforming Resources into High-Value Solutions

**OVERVIEW**  
High-Value Materials are at the core of ADS ECO's mission to build a circular, resource-efficient and sustainable industrial future.  
We recover, refine and upgrade materials from various waste streams and by-products, transforming them into high-quality secondary raw materials and specialty products for advanced industrial applications.  
**RESOURCE EFFICIENCY**  
Maximize recovery of valuable materials  
**INDUSTRIAL QUALITY**  
Delivering materials that meet high industry standards  
**ECONOMIC VALUE**  
Creating value through quality and innovation  
**LOW ENVIRONMENTAL IMPACT**  
Reduce emissions and conserve natural resources

**MAXIMUM RESOURCE RECOVERY** **PREMIUM QUALITY** **ADVANCED TECHNOLOGIES** **SUSTAINABLE VALUE CREATION**

**ADVANCED TECHNOLOGIES**  
**AI & MACHINE LEARNING**  
Advanced material identification and quality optimization  
**ROBOTIC & AUTOMATION**  
Precision sorting and handling of complex materials  
**ADVANCED SEPARATION**  
Technologies for superior purity and yield  
**CHEMICAL & PHYSICAL PROCESSING**  
Refining and upgrading for high-value applications  
**REAL-TIME ANALYTICS**  
Continuous monitoring and process optimization  
**QUALITY ASSURANCE**  
Strict laboratory testing and industry certifications

**KEY HIGH-VALUE MATERIAL STREAMS**

PRECIOUS & RARE METALS	INDUSTRIAL METALS	BATTERY MATERIALS	SPECIALTY MINERALS	CARBON MATERIALS	ADVANCED POLYMERS
<ul style="list-style-type: none"><li>Gold (Au)</li><li>Silver (Ag)</li><li>Platinum Group Metals (PGMs)</li><li>Rare Earth Elements (REEs)</li></ul>	<ul style="list-style-type: none"><li>Copper (Cu)</li><li>Aluminum (Al)</li><li>Nickel (Ni)</li><li>Zinc (Zn)</li></ul>	<ul style="list-style-type: none"><li>Lithium (Li)</li><li>Cobalt (Co)</li><li>Nickel (Ni)</li><li>Manganese (Mn)</li></ul>	<ul style="list-style-type: none"><li>Silica (SiO<sub>2</sub>)</li><li>Calcium Carbonate (CaCO<sub>3</sub>)</li><li>Graphite</li><li>Titanium (TiO<sub>2</sub>)</li></ul>	<ul style="list-style-type: none"><li>Recovered Carbon Black</li><li>Activated Carbon</li><li>Graphite</li><li>Carbon Fibers</li></ul>	<ul style="list-style-type: none"><li>Engineering Plastics</li><li>High-Performance Polymers</li><li>Recycled Polymers</li><li>Polymer Compounds</li></ul>

**INDUSTRIAL APPLICATIONS**  
ELECTRONICS & SEMICONDUCTORS  
ENERGY STORAGE & BATTERIES  
AEROSPACE & AUTOMOTIVE  
CONSTRUCTION & INFRASTRUCTURE  
CHEMICALS & ADVANCED MATERIALS  
CLEAN ENERGY TECHNOLOGIES

**HIGH-VALUE MATERIALS RECOVERY PROCESS**  
1. COLLECTION & RECEIPT: Secure and traceable material intake  
2. AI IDENTIFICATION & ANALYSIS: Real-time material identification and composition analysis  
3. ADVANCED SORTING & SEPARATION: Precision separation using robotics and advanced technologies  
4. REFINING & PROCESSING: Purification and upgrading to high-value quality  
5. QUALITY CONTROL & CERTIFICATION: Rigorous testing and industry certification  
6. MARKET DELIVERY & INDUSTRIAL USE: Delivering premium materials to global industries

**STRATEGIC BENEFITS**  
High economic value and profitability  
Supports circular economy and ESG goals  
Reduces dependency on virgin resources  
Strengthens supply chain resilience  
Creates green jobs and innovation

**KEY PERFORMANCE INDICATORS (KPIs)**  
RESOURCE RECOVERY RATE: 90%+  
MATERIAL PURITY LEVEL: 95%+  
HIGH-VALUE MATERIALS OUTPUT: Hundreds of thousands of tons annually  
CARBON FOOTPRINT REDUCTION: Significant CO<sub>2</sub> avoidance  
VALUE CREATION: Multiple high-value streams

**TURNING TODAY'S RESOURCES INTO TOMORROW'S SOLUTIONS.**

**INNOVATE** Recover more  
**UPGRADE** Create value  
**INTEGRATE** Power industries  
**SUSTAIN** Protect our planet  
**GROW** Build the future

**HIGH VALUE TODAY. SUSTAINABLE FUTURE FOR GENERATIONS.**

## Vision

- Transform waste into high-value industrial resources.
- Create sustainable revenue streams through material recovery.

## Strategic Objectives

- Maximize material recovery rates
- Increase resource efficiency
- Reduce dependence on virgin raw materials
- Support circular manufacturing
- Generate long-term economic value

## Key High-Value Material Streams

- Ferrous Metals (Steel, Iron)
- Non-Ferrous Metals (Aluminum, Copper, Brass)
- Engineering Plastics
- PET & HDPE Polymers
- Glass Cullet
- Electronic Waste Components
- Textiles and Industrial Fibers
- Wood and Biomass Resources

## Recovery Process

- Waste Collection & Reception
- AI Identification & Classification
- Advanced Material Separation
- Purification & Processing
- Quality Assurance
- Industrial Market Distribution

## Advanced Technologies

- Artificial Intelligence
- Machine Vision Systems
- Robotic Sorting
- Optical Sensors
- Digital Twin Technology
- IoT Monitoring Systems

## Industrial Applications

- Manufacturing
- Construction Materials
- Packaging Industry
- Automotive Components
- Consumer Products
- Renewable Energy Equipment

## Strategic Benefits

- Higher Revenue Generation
- Reduced Landfill Disposal
- Lower Carbon Footprint
- Increased Resource Security
- Industrial Competitiveness

- ESG Performance Improvement

### **Key Performance Indicators (KPIs)**

- Material Recovery Rate: 90%+
- Material Purity: 95%+
- Multiple Revenue Streams
- High Market Value Products
- Significant CO2 Reduction
- Strong Circular Economy Impact

### **ADS ECO High-Value Materials Vision**

Recover More. Waste Less. Create Sustainable Value.