

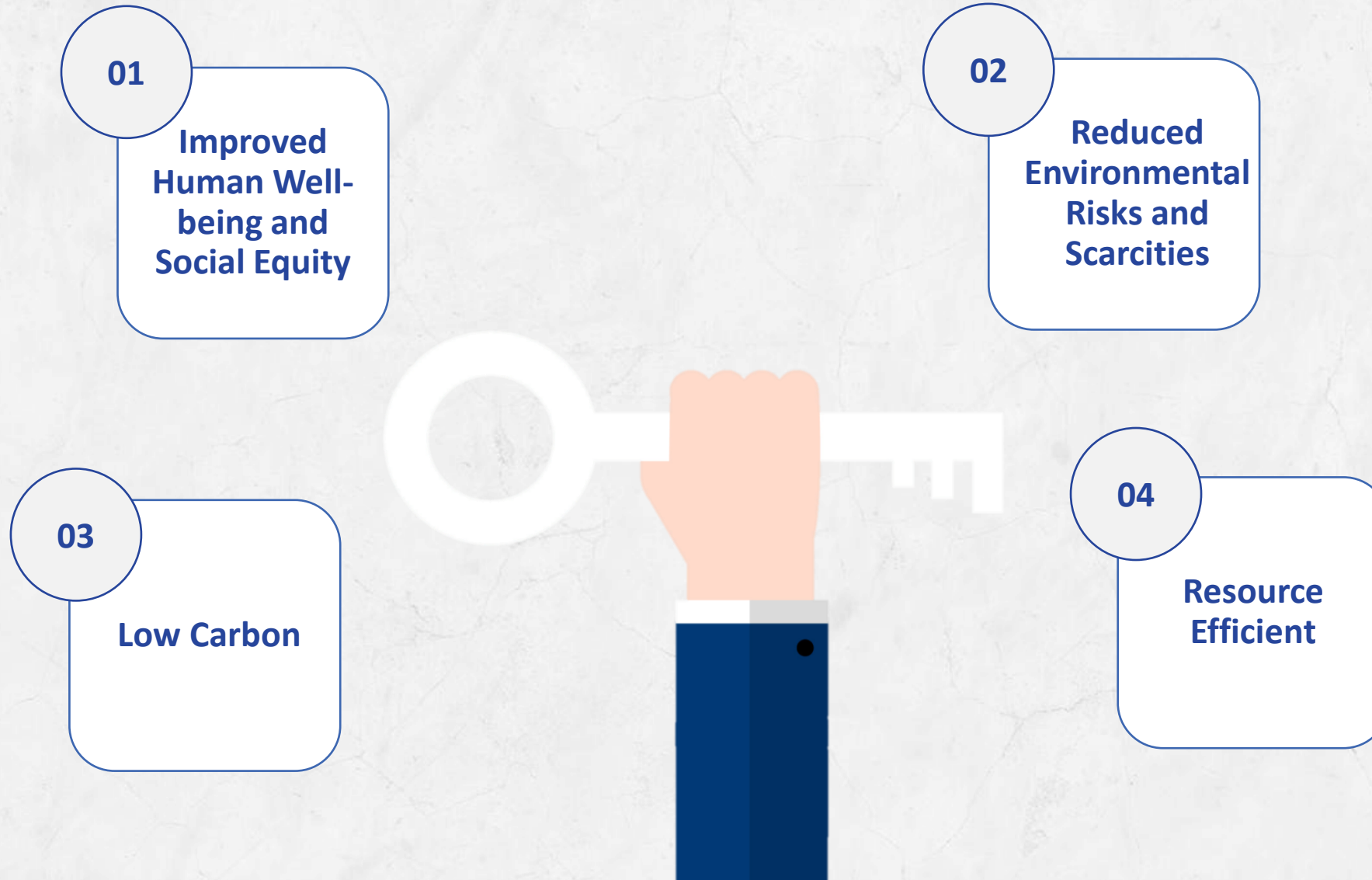
AI Tools and Sustainable Development in the Green Economy



The Green Economy Overview



The Green Economy Overview



Green Technology and sustainability global market





Green Economy Sectors







1. AI Tools for Energy Efficiency

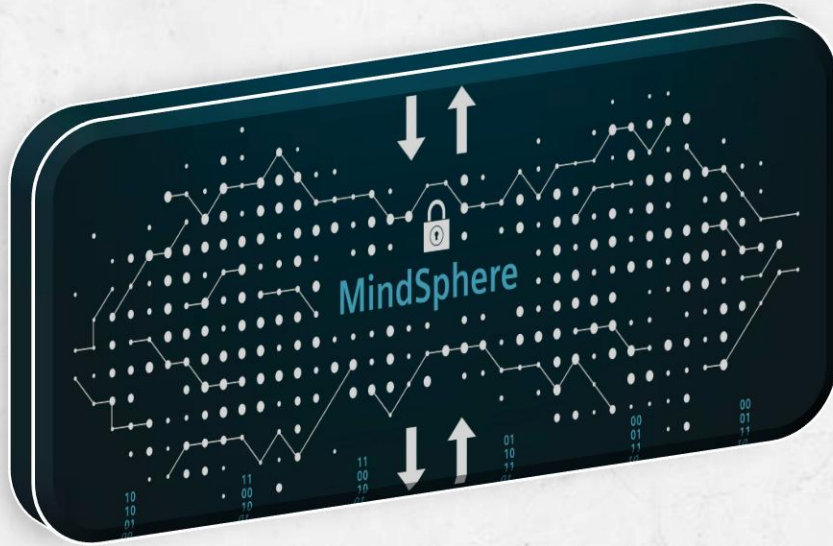
**Optimizing
power
consumption**

**Predicting
energy
demand**

**Managing
smart grids**

**Reducing
emissions**





Siemens MindSphere Predictive maintenance in wind and solar energy

An industrial-IoT platform allows machines, plants and assets to be connected, **data to be collected and analyzed**, and then used to drive business/operational decision-making.





Google DeepMind's AI for Data Center Cooling

Reduced energy use by 40%

Specific application of AI developed by DeepMind to optimize the cooling systems in large-scale data centers , It uses deep learning models feeding on sensor data to predict and control cooling actions.



2. AI in Sustainable Agriculture

Precision
farming

Predicting
weather and
crop yields

Detecting
pests and
diseases early

Optimizing
water and
fertilizer use





Microsoft FarmBeats Precision farming via IoT + AI analytics

end-to-end IoT + cloud + data-platform initiative by Microsoft designed for agriculture. It aims to **enable data-driven farming by integrating sensors, drones, cameras, connectivity** (including in rural/no-internet zones) and machine learning.

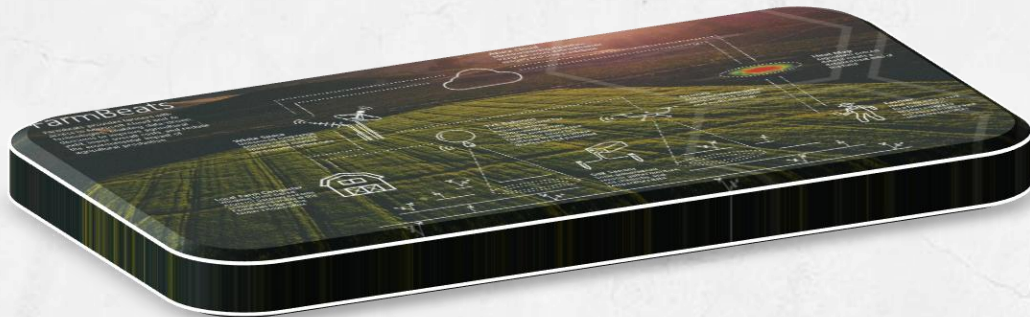




Planet Labs + AI

Satellite monitoring for soil and crop health

Commercial Earth-observation company that operates a large constellation of small satellites which capture frequent imagery of essentially the whole Earth. They combine this imagery with machine learning/AI to derive insights (changes over time, object detection, crop monitoring, deforestation detection) at global scale



3. AI for Circular Economy and Waste Management

Analyzing
resource flows

Optimizing
waste
collection
routes

Reducing waste
and promoting
resource reuse.

Detecting,
sorting, and
recycling
materials





AMP Robotics

AI-driven recycling robots

Uses computer vision and robotic arms powered by **deep learning to identify, pick, and sort recyclable materials** from mixed waste streams





Lixo

AI tracking for packaging lifecycle

Combines AI and **IoT camera sensors** installed on waste collection trucks and sorting lines to analyze waste composition in real time.





4. AI in Climate Forecasting & Carbon Management

**Tracking carbon
emissions**

**Analyzing vast
climate data**

**Predicting extreme
weather patterns**

**Enabling smarter
climate action and
emission reduction
strategies.**





Sylvera

Increases transparency and trust in voluntary carbon markets.

employs AI to assess the **quality and integrity of carbon offsets by analyzing** satellite data, project reports, and verification records.





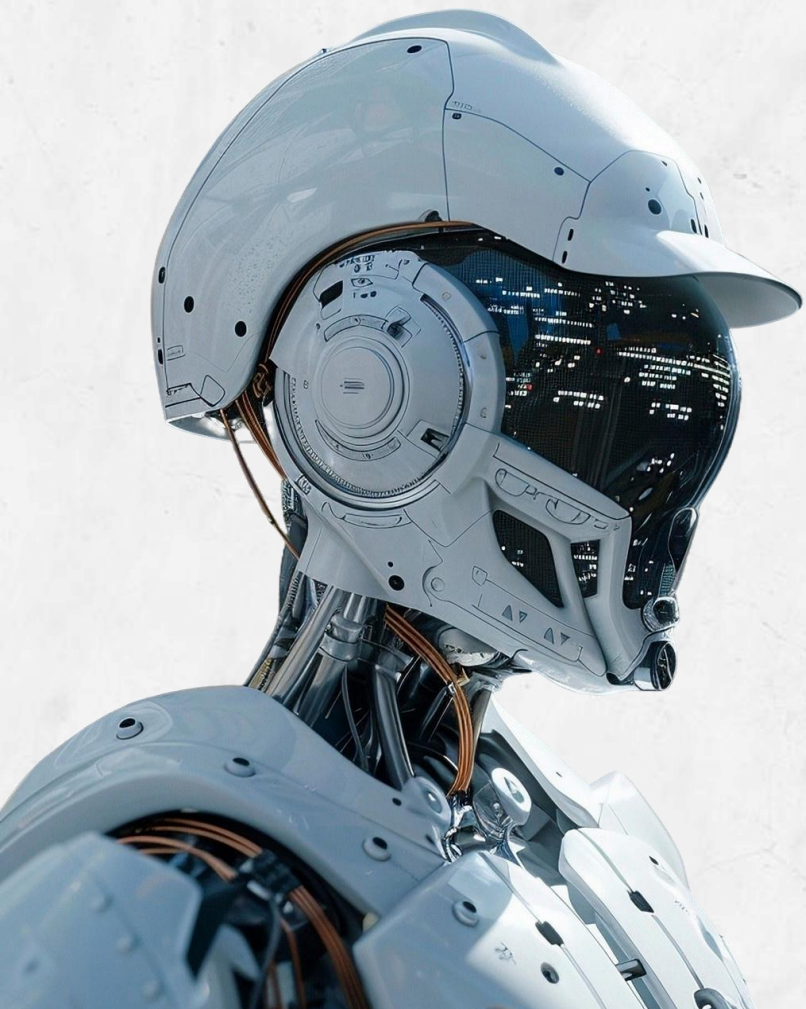
Climate TRACE

Helps cities set data-driven decarbonization targets.

Uses AI to estimate Carbon emissions from transport and buildings, supporting local climate action plans.



5. AI & Industry



Automates production for higher efficiency and precision.

Predicts equipment failures to reduce downtime.

Optimizes supply chains and logistics.

Enhances product quality through smart inspection.

Supports data-driven, sustainable operations



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Smart Process Optimization

AI algorithms analyze production data in real-time to minimize energy and raw material waste.





Predictive Maintenance

Uses IoT sensors and AI to predict equipment failures before they happen, reducing downtime and resource consumption.





Sustainable Supply Chains

AI optimizes logistics, inventory, and delivery routes to lower carbon emissions across the entire supply chain.



Powers
autonomous and
connected vehicles.

Optimizes traffic
flow and route
planning.

Enhances logistics
and fleet
management.

Improves safety
through real-time
monitoring.

Reduces emissions
with smarter
mobility systems.

6. AI in Transportation





Intelligent Traffic Management

AI analyzes real-time traffic flow to optimize signal timings, reducing congestion and idling emissions.



Smart & Electric Vehicles (EVs)

AI optimizes battery usage in EVs and manages autonomous vehicle routing for maximum efficiency.



7. AI in Smart Cities

Manages traffic and public transport efficiently.

Optimizes energy and water consumption.

Enhances public safety through intelligent surveillance.

Improves waste management and city planning.

Enables data-driven urban sustainability.





Intelligent Infrastructure

Smart lighting, waste collection, and water systems that adapt to usage patterns, conserving resources.



Environmental Monitoring

A network of sensors **uses AI to monitor air/water quality, noise pollution, and urban heat islands**, enabling proactive interventions.

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THANK YOU

