

**Service ID** S00351



**Location** At user's premises, Denmark

## **Life Cycle Assessment (LCA) for Agriculture Robots**

### **Provider service**

Danish Technological Institute

### **Link to content**

<https://agrifoodtef.eu/services/life-cycle-assessment-lca-agriculture-robots>

### **Type of Sector**

Arable farming, Food processing, Greenhouse, Horticulture, Livestock farming, Tree Crops, Viticulture

### **Accepted type of products**

Data, Design / Documentation, Other

### **Type of service**

LCA assessment

### **Description**

Life Cycle Assessment (LCA) for Agriculture Robots is a comprehensive evaluation method that assesses environmental impacts at every stage of a robot's lifecycle—starting from raw material extraction, manufacturing, utilization, and ending with disposal or recycling. This service provides valuable insights into energy consumption, waste generation, and other environmental factors, helping customers identify key areas for improvement. By promoting sustainability and eco-efficiency, LCA supports decision-making for reducing ecological footprints and ensuring compliance with sustainability standards such as Frugal AI requirements. The service is tailored to meet diverse customer needs, enabling them to understand and optimize the environmental performance of their robotic technologies.

## **How can the service help you**

Before the service, customers may lack an understanding of the environmental impact of their agriculture robots. After the service, they will have detailed insights into the robot's lifecycle—highlighting critical stages where improvements can be made to reduce energy consumption, waste, and emissions. This helps customers make informed decisions to enhance sustainability, meet environmental regulations, and improve eco-efficiency.

## **How the service will be delivered**

The service can be customised to focus on specific lifecycle stages, such as manufacturing or disposal. Additionally, customers can request comparisons between different robotic designs or configurations. However, customization may require additional data from the customer, such as detailed supply chain information. Customers should note that incomplete or inaccurate data may affect the quality of the assessment.

## **Service customisation**

The service involves systematic data collection and analysis of the robot's lifecycle. Customers will need to provide detailed information on materials, manufacturing processes, energy usage, and disposal methods. The service execution typically takes 4-6 weeks, depending on the complexity of the robot and data availability. The service can be delivered both remotely and on-site, depending on customer preferences. The customer will receive a comprehensive LCA report, including recommendations for reducing environmental impacts and improving eco-efficiency.