

SATURN ROBOTICS UNIVERSE PLATFORM: **ecoagro**

Autonomous and electric

The **ecoagro** is a modular autonomous vehicle platform designed to meet diverse needs in agriculture, lawn care, and defense. Its modular design allows customization to suit your organization's needs. With a broad range of payload options and standardized implement and attachment interfaces, EcoAgro can efficiently perform a variety of tasks.

Equipped with class-leading solar, hybrid, and multifuel energy capabilities, along with a lightweight design optimized for electrification, **ecoagro** provides reliable energy in the field where energy infrastructure may be unavailable, unreliable, or costly. These combined energy systems promote energy independence, ensuring consistent operation under challenging conditions.

About 51%	Up to 90%	10%	up to 100%
reduced fuel expenses	less work	increased crop yields	reduced emissions

Time is money. Money is time.

Automated with LiDAR and GPS, the **ecoagro** can work the field for you, day and night, saving up to 90% of your valuable time. Its highly efficient electric drivetrain and lightweight design contribute to a 51% reduction in fuel expenses. Minimal maintenance is required due to fewer moving parts and regenerative braking. An optional solar roof can further lower operating costs.

These fuel savings are calculated using an average diesel price of €1.60 per liter and an electricity rate of €0.19 per kWh in the EU for 2024.

Operations can be conducted with precision under ideal weather conditions, minimizing the need for fertilizers, seeds, and pesticides. Safety is ensured through LiDAR vision systems, enabling operations in low-visibility environments without human operators.

Increased crop yields.

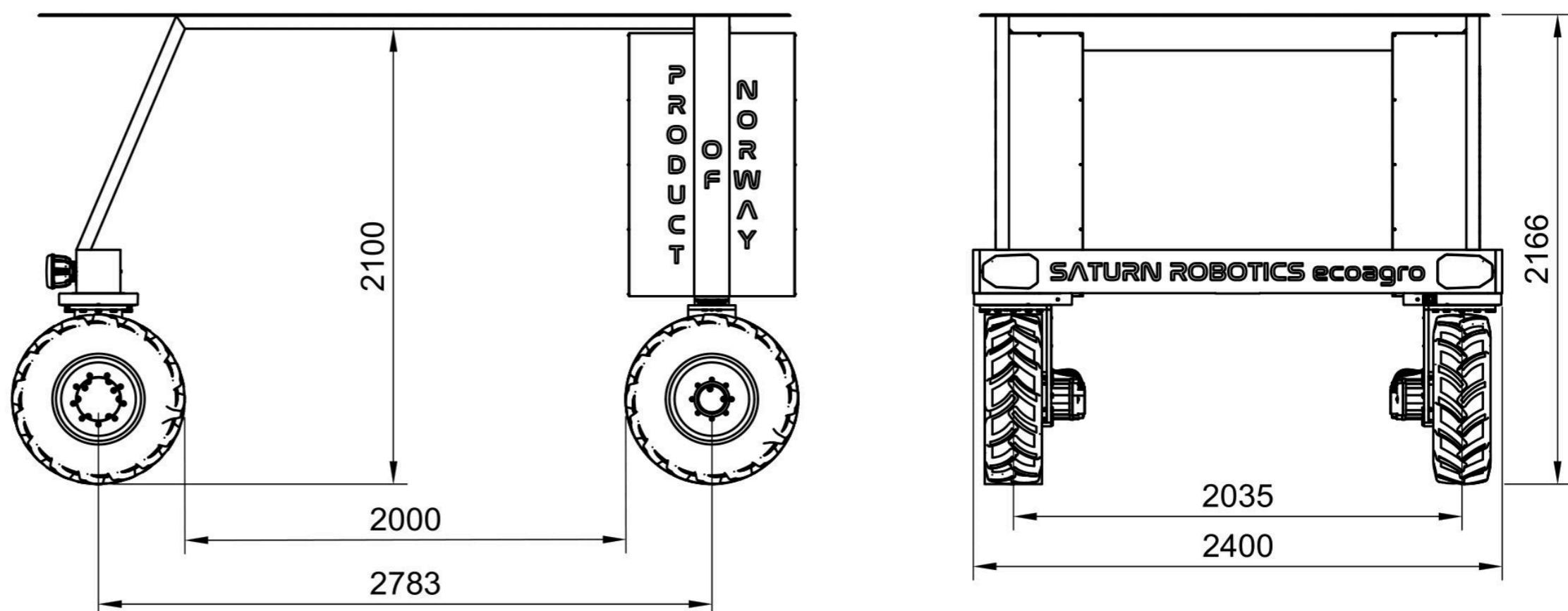
The **ecoagro**'s significantly lower weight compared to conventional tractors reduces ground pressure and soil damage. This reduced compaction preserves soil pore structure, enhances water infiltration, promotes long-term soil health, and consistently leads to higher crop yields.

Its unmatched maneuverability, with a zero-degree turning radius, allows for more efficient field utilization. The **ecoagro** can operate on slopes up to 70%, making previously inaccessible land suitable for agriculture.

Zero emission and reliable energy

Designed from the ground up for electrification, the **ecoagro** features a lightweight design, solar, hybrid, and multifuel energy capabilities that deliver true zero-emission energy production without compromising reliability. These integrated energy systems enhance energy independence, making **ecoagro** essential for both agriculture and defense, providing sustainable and dependable energy wherever needed.

ecoagro specifications



Drivetrain and performance	Description	Standard	Optional
Traction motor type	AC PMSM (Permanent Magnet Synchronous Motor)	v	
Brakes	4 x fully enclosed disc brakes	v	
Continuous (peak) traction power rating	4 x 8kW (4 x 16kW)	v	
Max. Torque at each wheel	4906 + 4906 + 1547 + 1547Nm (front + front + rear + rear)	v	
Continuous (peak) traction power rating	4 x 200kW		v
Max. Torque at each wheel	3000Nm		v
Max. speed	40 km/h (on-road) / 12 km/h (off-road)	v	
Steering	4 x 360-degree independent steering corners	v	
Turning capability	zero turn or sideways	v	
Max. Incline	Able to drive up and along a 35° incline with max payload ¹	v	
Energy systems			
Battery electric capacity	60kWh	v	
Battery electric charging time	64 kW (0–100% in ~1 hour) / 32 kW while running (0–100% in ~2 hours)	v	
Hybrid electric drivetrain	120hp/89kW diesel/multifuel generator + 15 kWh battery		v
Hybrid electric drivetrain (Peak discharge)	445hp/330kW diesel generator + 100 kWh battery (2000kWh, ideal for directed-energy (laser) systems)		v
Solar roof energy production	5.32 to 9.5kW per day (southern to northern europe)		v
Control and autonomy			
Standard autonomy pack	Remote control / Fully autonomous off-road	v	
Advanced autonomy pack	Fully autonomous on-road with LUMINAR LiDAR suite		v
Standard safety sensors	2 x 180° LiDAR units + 2 x 90° long-range forward and rear LiDAR	v	
Standard navigation sensors	RTK GNSS precision with Geofencing	v	
Implement and payload interfaces			
3-point hitch	CAT 2 hydraulic 2000kg lifting capacity ¹	v	
Secondary front facing 3-point hitch	CAT 2 hydraulic 2000kg lifting capacity ¹		v
Trailer hitch front facing	3500kg ¹		v
PTO	600 rpm, 16kW continuous, 32kW peak, 600Nm torque	v	
E-PTO	12V/24V	v	
High power E-PTO	400V 160A / 400V 80A while running	v	
Measurement and weight			
Empty weight	1171kg	v	
Max. Payload	2000kg (SF: >4.2)	v	
External dimensions (L x W x H)	4349 x 2400 x 2166mm (May vary depending on customization)	v	v
Standard tyres (front/rear)	BKT AGRIMAX RT 333, 260/70R16 (Retail ~200 €)	v	
Optimal tyres	BKT AGRIMAX RT 765, 260/70R16 (Retail ~350 €) or Nokian Hakkapeliitta TRI, 260/75R16 (Retail ~350 €)		v
Nominal track width	2035 mm (1800–2035mm option)	v	v
Maximum implement lenght	2000 mm (from trailing arm ball to rear wheel; can be extended)	v	v
Maximum implement height w/solar roof	2100 mm (no limit without solar roof; can be increased)	v	v

¹Only one payload may be attached at a time, and the payload's center of gravity must not be higher than the vehicle's center of gravity in order to climb a 35° incline.

ecoagro built on the SATURN UNIVERSE PLATFORM specifications and capabilites

SATURN UNIVERSE PLATFORM	
MARKET	
COMPETING CIVILIAN MARKET SEGMENTS	Autonomous Mobile Robot → Autonomous Delivery Vehicle → Autonomous agricultural vehicle → Semi Truck.
NEXT-GEN MILITARY REPLACEMENT FOR	M113, M2 Bradley and CV90
COMPONENTRY	Made from off-the-shelf components from the US and EU.
CIVILIAN OPTIONS	Hybrid, Delivery Vaults, Semi-trailer coupling, Trailer hitch, 3-point CAT.2, PTO, and EPTO.
DEFENCE OPTIONS	M2 Browning turret, directed-energy (laser) weapon for ground and air defence, MIL-SPEC.
SIZE AND WEIGHT	
EXTERNAL DIMENSIONS (L x W x H)	Any dimensions
GROSS VEHICLE WEIGHT (base + battery + payload)	>80000lbs (max GVW of a semi)
GROUND CLEARANCE	Any ground clearance or approach/departure angle. (<45° approach and departure angles)
SUSPENSION	Independent swingarm with hub motor / 360° corner module / Horstman Ambitec Tracks /Solid axle (takes up space that could be used to house additional batteries)
SPEED AND PERFORMANCE	
MAX. MOTOR OUTPUT	Total number of wheels x 200kW
TRACTION	8x8 / 6x6 / 4x4 / Tracked
BATTERY AND POWER SYSTEM	
CAPACITY	Any capacity up to ~2000kWh (A semi truck with hub motors allows for more space for batteries)
HYBRID OUTPUT	120hp/445hp (35-45% thermal efficency)
HYBRID FUELS OPTIONS	Diesel or Multifuel
MAX. PEAK OUTPUT OF BATTERY	Capacity x 20C (100kWh batterypack can power a 1000kW directed-energy (laser) weapon)
ENVIRONMENTAL	
IP RATING	<IP68

Our mission with the **eroagro** is to strengthen societal sustainability and resilience. In agriculture, this means increasing crop yields, making previously inaccessible land suitable for agriculture, and electrifying operations to reduce emissions and costs for farmers. Hybridization and solar integration enable independent energy production, ensuring that farms remain functional even during crises or wartime when the power grid or fuel supply may be disrupted.

In defense, uninterrupted access to reliable energy is crucial when infrastructure is compromised, enhancing operational resilience and supporting long-term sustainability.

To achieve these goals, **ecoagro** was developed as a modular vehicle platform tailored to meet our customers' needs, engineered and built in Akershus, Norway. Its lightweight design, hybrid electric energy architecture, advanced automation, and high efficiency combine to offer a pioneering solution for our future.

SATURN ROBOTICS

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Henrik sørrensens vei 42
1065 Oslo, Norway
www.saturnrobotics.no
+47 40 56 30 07
bilalbarihussain@saturnrobotics.no