Sustainable fleets of robots, a disruptive solution of vegetation maintenance
Vitirover is the first autonomous industrial mower-robot for industry and agriculture.

Its main features:
- Autonomous
- Solar energy
- GNSS
- IoT and IA
Vitirover’ markets

RAILWAYS  HIGH VOLTAGE TRANSFORMERS  ORCHARDS

AIRPORTS  HIGHWAYS  VINEYARDS  PHOTOVOLTAIC FARM
Vitirover's low-consumption technology, a high-level barrier to entry has now been crossed.

**Sustainable performances of the robot are outstanding**

- **100% autonomy**
  - Solar panel
  - Li-ion battery

- **In the GNSS limits of the plot**
  - GNSS receiver
  - GPS, GALILEO, GLONASS, SBAS, BEIDU

- **100% coverage**
  - Intelligent circulation in the plot (IoT - AI)
  - Ability to get out of all terrain traps

- **Operates as managed fleets**
  - Connected object
  - Remote control
  - Predictive maintenance

- **Very low consumption**
  - 1 W / Kg

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**Energy**

<table>
<thead>
<tr>
<th></th>
<th>Vitirover</th>
<th>Lawn mower</th>
<th>Tractor and rotary cutter</th>
<th>Other robot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy</td>
<td>Solar</td>
<td>Gasoline</td>
<td>Diesel fuel</td>
<td>Electric (*)</td>
</tr>
<tr>
<td>gCO2 eq / KWh depending on technology</td>
<td>32</td>
<td>683</td>
<td>778</td>
<td>66</td>
</tr>
<tr>
<td>Power weight ratio (w/kg)</td>
<td>1</td>
<td>62,8</td>
<td>70</td>
<td>16</td>
</tr>
<tr>
<td>KWh consumed per ha</td>
<td>4,5</td>
<td>9,42</td>
<td>15,7</td>
<td>28</td>
</tr>
<tr>
<td>gCO2 eq / KWh wasted</td>
<td>144</td>
<td>6 434</td>
<td>12 215</td>
<td>1 848</td>
</tr>
<tr>
<td>Cost (K€)</td>
<td>4</td>
<td>7</td>
<td>60</td>
<td>25</td>
</tr>
</tbody>
</table>

(*) rechargeable battery
We do not sell robots

WE SELL MAINTAINED HECTARES

The shepherd, in charge of a herd of robots, supervises the work remotely from a computer and intervenes if necessary.
With a single click, the shepherd takes control of a robot and can perform remote maintenance if necessary.
Competitive landscape 1: Glyphosate alternatives

**Vitirover’s approach is challenged by other glyphosate alternatives.**
**Today’s market hasn’t validated any of those initiatives.**

<table>
<thead>
<tr>
<th>Weeding technique</th>
<th>Market</th>
<th>Country</th>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revegetation (Vegetalisation)</td>
<td>Tested by SNCF</td>
<td>France</td>
<td>simple</td>
<td>Need to be maintained</td>
</tr>
<tr>
<td>Alternative herbicide</td>
<td>Bayer</td>
<td>Germany</td>
<td>Monsanto power</td>
<td>Unknown side effects</td>
</tr>
<tr>
<td>Geotextile laying</td>
<td>Diverse</td>
<td>Various</td>
<td>prevents vegetation</td>
<td>Limited effectiveness, cost</td>
</tr>
<tr>
<td>Thermal weeding</td>
<td>Diverse</td>
<td>Various</td>
<td>efficiency</td>
<td>Carbon footprint, cost</td>
</tr>
<tr>
<td>Electrical weeding</td>
<td>Diverse</td>
<td>UK</td>
<td>Precision</td>
<td>Carbon footprint, cost</td>
</tr>
</tbody>
</table>
Trend 1- Automatisation of existing processes.

Naïo, Vitibot, Sitia, propose to hitch traditional vineyards tools (plow) on an electric, potentially autonomous*, straddle tractor.

At the same time, the tractor manufacturers are working on potentially autonomous* tractors.

Trend 2 – Transformation of processes

EcoRobotix
Solar-powered selective weed control robot

FENDT (Xaver)
Fleets of electric robotic seed drills

VITIROVER
Fleets of solar-powered robot weeders

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
<th>Situation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy to understand</td>
<td>Expensive</td>
<td>Multiple offers</td>
</tr>
<tr>
<td>Autonomous work</td>
<td>*No authorization for autonomy (lethal risk)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
<th>Situation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low cost solutions</td>
<td>Difficult to understand</td>
<td>Few offers</td>
</tr>
<tr>
<td>Cleaner (CSR)</td>
<td>Long to develop</td>
<td></td>
</tr>
<tr>
<td>Strong barriers to entry</td>
<td>Small machines do not tamp</td>
<td></td>
</tr>
<tr>
<td>Low industrial cost price</td>
<td>No lethal risk</td>
<td></td>
</tr>
<tr>
<td>Authorized autonomy</td>
<td>Until 50 robots, one man</td>
<td></td>
</tr>
</tbody>
</table>
FUTURE BEYOND V1 IS ALL ABOUT DATA

TODAY
Connected object, intelligent circulation in the plot (GPS)

TOMORROW
Data collection and analysis
Vitirover’s foundation is built on values*, which guide our actions and contribute to the CSR transformation of our clients.

*Technology to do business by doing good

PROTECT THE ENVIRONMENT

→ No use of fossil energy
→ Creation of beautiful eco systems with greenery, insects and earthworms.
→ All agricultural or industrial plot maintained with VITIROVER becomes meadow and then carbon sinks that fix CO².

SOCially RESPONSIBLE

→ We make disappear strenuous jobs
→ Our external shepherds are always entrepreneurs, happy to create their company based on our business model.
Grassed vines are carbon sinks that fix CO²:

- Through the natural process of photosynthesis, grass uses carbon dioxide from the air (CO₂), solar energy and water to grow.
- The carbon accumulates in plant tissue and then in the soil as organic matter.
- This is why the grassy soil in vineyards for example, is said to store carbon. In our climates, on average 35 tons of carbon per hectare and per year (35 tC / ha / year).
- On the other hand, if they are plowed, the stored carbon is re-emitted.

It is important to maintain permanent grass cover

The storage capacity of a soil depends on the role assigned to it, the more the soil is "artificialized" (chemistry, plowing), the more its storage capacity is reduced.

All artificialized soil (railways, highways, electrical substations,...) are re-naturalized with Vitirover, becoming grassland and carbon sinks, they will fix carbon again!
French courts ban sale of controversial weedkiller glyphosate

Austria becomes first EU country to ban weedkiller glyphosate

15 April 2019
Vietnam bans glyphosate

MARCH 28, 2019
Glyphosate under fire from San Francisco to Sri Lanka
### Integrated into a dynamic and powerful ecosystem

<table>
<thead>
<tr>
<th>Our Clusters</th>
<th>Innovation</th>
<th>Industrialisation</th>
<th>Partners</th>
<th>Clients</th>
<th>Ongoing POC</th>
</tr>
</thead>
<tbody>
<tr>
<td>innovvin</td>
<td>eurecat</td>
<td>get it right®</td>
<td>EDF PULSE</td>
<td>SNCF</td>
<td>ALSTOM</td>
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<tr>
<td>SMART4D</td>
<td>SOLARIMPULSE FOUNDATION</td>
<td></td>
<td></td>
<td>Château Montmorotashi</td>
<td>ADP</td>
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<tr>
<td>CHAIRE AgroTIC</td>
<td>cnrs</td>
<td>LGM</td>
<td>bpi france</td>
<td>EDF</td>
<td>ENGIE Solutions</td>
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<tr>
<td>AQUITAINE Robotics</td>
<td>maxon motor driven by precision</td>
<td></td>
<td></td>
<td>EDF</td>
<td>ENGIE Solutions</td>
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<tr>
<td>The human-robot cluster</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>elia group</td>
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<tr>
<td>RobAgri</td>
<td>Bordeaux Sciences AGRO</td>
<td>Be link solutions</td>
<td>KPMG</td>
<td>ENEDIS</td>
<td>GE</td>
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<td>French Tech Bordeaux</td>
<td></td>
<td></td>
<td>European Commission</td>
<td></td>
<td>CFL</td>
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<tr>
<td>ECHORDD++</td>
<td>RoboCup France</td>
<td>Nouvelle Aquitaine</td>
<td>eco-innovation</td>
<td></td>
<td>EIFFAGE RAIL</td>
</tr>
</tbody>
</table>
Numerous awards received

- Laureat 2018 Among 450 candidates
- Laureat 2019 Collaboration Large Group / Startup
- Laureat 2018 Contest Nouvelle Aquitaine
- Lauréat Contest My Positive Impact
- FNSEA 2020
- Laureat 2019 (Austria & Germany) Among 250 candidates
- Lauréat Pierre Dellenbach Trophée
- Lauréat 2020
- Laureat SABOR 1 & 2 Projects
- Laureat 2020
GOING FORWARD TOGETHER

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