SCOLOX®

A local circular economy solution

For sustainable recycling of used motor oils and hydrocarbon residues



A technology labelled "Efficient Solution"

In December 2020, Ecoslops was awarded the "Efficient Solution for the Planet" label by the Solar Impulse Foundation for its P2R technology. This label has been successfully renewed in January 2024.

Responding to the environmental challenges without compromising economic growth, Bertrand Piccard and the Solar Impulse Foundation have identified more than 1,000 cost-effective, clean solutions and offer a guide for economic and political decision makers on the solutions that can be implemented on a large scale.



SCOROX®

WE SUPPORT



"Since 2019, Ecoslops has made a commitment to the United Nations Global Compact initiative for corporate (social) responsibility and its 10 principles related to Human Rights, Labor, the Environment and Anti-Corruption."

A Proprietary Ecoslops innovation

Winner of the Growth Companies Summit 2021 "Greentech & Energies" **Gold Trophy** (category 5, up to €20M in turnover)



Winner of the 2018 Forbes Futur40 Prize



Voted "Champion of Growth" in 2019, 2020 & 2021 by French newspaper, Les Échos

LesEchos

Prizes and Awards

The P2R:

Winner of the 2016 "BPI World Innovation Challenge" in the "Investments for the Future" category

> Winner of the Ademe "SME Initiative" call for projects





2018 Ocean **INNOVATION TROPHY**

www.ecoslops.com

Recycling, Low carbon production, Helping to protect the planet: The Scarabox circular economy

While international regulations require the collection and processing of hydrocarbon residues, implementing these installations is generally difficult. The equipment and resources needed represent a substantial cost and make it difficult to generate a profit.

The Scarabox, a low-carbon, turnkey recovery solution, recycles this waste and revalorizes it into high-quality fuels.

It is a guarantee that these hazardous waste will no longer be discharged into nature due to the lack of any suitable solution, but will effectively be recycled in all transparency for the benefit of everyone and the environment.

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To facilitate access to its expertise and accelerate the energy transition in areas that are remote or that have smaller volumes for collection, Ecoslops has designed a containerized unit that is economically beneficial, with several objectives:

MICRO-REFINING

OF RESIDUES & TRANSFORMATION INTO

ETROLEUM PRODUCTS

ENERGY

CONSUMPTION

Our proprietary technology is the result of more than **10 years of research** & development. With its own R&D office and two production units in Europe (Portugal in 2015, France in 2021), Ecoslops has already recycled more than 170,000 tons of waste.

To be cost-effective with small volumes

To operate the unit with local staff

RESIDUE COLLECTION

- To be installed on a small site as close to the waste feedstock as possible
- To undergo a fast authorization process
- To process used motor oils as well as maritime slops and sludges
- To offer a turnkey solution, from feasibilities studies to technical assistance over 5 years and more

The Scarabox is a hydrocarbon waste recycling unit designed for low-carbon production of fuels and soft bitumen from various waste feedstocks.

It benefits from Ecoslops' expertise in the distillation of hydrocarbon residues.



It can be used to recycle 3 types of dehydrated hydrocarbon residues:

- Used lube oil (from trucks, cars, construction and agricultural machinery, generators, etc.);
- MARPOL petroleum waste (Annex 1) linked to commercial shipping operations or generated from the purification of heavy fuel and gasoil in machine rooms: slops & sludges;
- Industrial petroleum waste (gasoil and fuel).

Into three types of products:

Primarily industrial fuel oil (FO), but also two secondary cuts: gasoil (GO) and soft bitumen (XFO).

PROCESSING CAPACITY 7,000 tons per year

OPERATING MODE

Automated with simplified control system

STAFF NEEDED

2 people 24/7

AUTHORIZATIONS

Limited. Directly linked to daily processing capacity, equipment calorific output and storage volume

SCALAXBOX®

The Scarabox unit comprises three 40-foot containers. These modules contain the distillation column and main processing equipment (accessories, filters, pumps, etc.).

The three modules are assembled on site using a lifting equipment and mechanically connected to ensure overall integrity. Interconnections dedicated to the process, instrumentation and electrical supply are installed for proper control of the whole unit.

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An additional container houses the supply stations and control room, as well as the main automation equipment.

STORAGE

The storage capacity deployed will depend on the supply and production logistics.

UTILITIES

The thermal energy requirements are estimated at 300kW (nominal power) and can be achieved via several heating options: electrical heater, boiler working in self-consumption, use of a heat transfer fluid (steam, heat recovery) or a combination of these options. The requirements in terms of auxiliary electricity will be 150-170kW (nominal power).

The Scarabox also needs compressed air, cooling water, steam and nitrogen.

Depending on the local utilities, an additional "Utilities" module can be supplied by Ecoslops in a 20-foot container.

TRANSPORTATION & LAND OCCUPATION

The unit is designed for:

- Minimum land occupation
- Standardized transportation as close to the deposits as possible (containerized unit)

The total surface area needed, including safety distances, depends on the storage facilities deployed, applicable regulations and local constraints (co-activity, land restrictions, external roads, surrounding activities, etc.).

- **SCARABOX MODULE 1:** 1 x 40-foot horizontal container (transfer)
- **2 3** SCARABOX MODULE 2 & 3: 2 x 40-foot vertical containers (distillation)
- **SHELTER:** 1 x 40-foot horizontal container (contol station)

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- 5 6 UTILITIES MODULES: volume occupied by 2 x 20-foot containers (chiller, air, nitrogen, etc.)
- 7 WATER TREATMENT: water collection and treatment (washing area, storm bassin, separato bassin,...)

STORAGE FACILITIES

- **Gasoil:** 2 storage tanks (example)
- **9** FUEL OIL: 3 storage tanks (example)
- **BITUMEN:** 1 heated storage tank
- GASOLINE: 1 x 20 foot ISO tank container (if applicable)
- 12 **RESIDUES:** 2 storage tanks (example)
- **13 LOADING STATION:** station for tanker truck with weighbridge

SAFET

- **14** ATEX ZONE: area at risk of an explosive atmosphere (Scarabox and storage facilities)
- **15** SELS: significant lethal effects and domino effects threshold (no sensitive installation in the zone)
- **SEL:** lethal effects threshold (no continuous presence in the zone)
- **SEI:** irreversible effects threshold (impact study to be conducted off site)

The **Scarabox** unit is designed to operate 24/7. It is semi-automated and needs local labor with a mechanics/electricity profile.

Ecoslops will provide suitable operations and maintenance training.

The team in charge of operations will comprise:

- A control room operator, responsible for regulating the unit and monitoring operations 24/7
- A site operator, responsible for day-to-day manual operations 24/7

Laboratory analysis will be needed to monitor the quality of raw materials and finished products.

Ongoing support, from design to supervision

The Scarabox is a turnkey solution with Ecoslops providing a support service for at least 5 years.

The technical support service comprises the following activities:

- Initial training of operators
- Unit start-up assistance
- Remote operations assistance once the unit is operational
- Remote maintenance monitoring (via a digital maintenance manual)
- Periodic on-site visit



Environmental, social and regional impact



Positive impacts on air quality:

- Limitation of transportation of local waste for processing
- Reduction in imports of energy products
- Reduction of CO₂ emissions related to the extraction of raw materials (crude oil)
- Elimination of pollutants discharged into the atmosphere produced from the incineration of this hazardous waste



Positive impacts on water and biodiversity:

- Reduction in the extraction of raw materials (crude oil)
- Uncontrolled waste disposal avoided by the new economic value of hydrocarbon residues



- Job creation
- Local value creation



CO2 emissions avoided due to the shortened circuit and no extraction of any new raw materials



Avoiding the pollution of water, land and air caused by petroleum residues and used motor oils, and their incineration



Investment & local added value



Energetical independence favoring local production

The Group



Our mission is to contribute to energy transition and environmental conservation through innovations that help to conserve stocks of raw materials and prevent pollution.

Strongly rooted in the circular economy, our technologies and expertise enable low-carbon manufacturing of new energy products.

A player in the circular economy, Ecoslops offers solutions for the production of different fuels and light bitumen from petroleum residues and used lube oil. Our innovative technology is based on a unique micro-refining industrial process that transforms this waste into 2nd generation commercial products that meet international standards.

Two P2R units are currently operational on an industrial scale:



Ecoslops Provence

The Ecoslops Provence P2R unit has been operational on the La Mède Total Energies platform since July 2021. Its nominal production capacity is 30,000 tons/year.



Located in the port of Sinès, the Ecoslops Portugal P2R unit has been operational since 2015 (same capacity as the French unit, i.e., 30,000 tons/year). www.ecoslops.com

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