MOTOR DEVELOPMENT INTERNATIONAL

The Challenges of the 21st Century

Efforts have been made to mitigate over-dependency on fossil fuels for energy. Its production is now more eco-friendly, but its storage is still highly dependent on battery-based systems.

Environmental pressure

- Pollution caused by extraction of the rare earth metals
- Environmental threats caused upon disposal
- Pollution caused by transportation of raw materials
- Inability to maintain the efficiency of the batteries over the years of usage

Economical pressure

Inability of the countries to insource manufacturing process due to lack of local availability of raw materials leading to

- Loss of employment generation opportunities
- Talent / workforce migration
- Tax losses for the governments

Social pressure

Availability of the rare earth metals in developing economies creating labor stress that encourages child labor and ill working conditions

Political pressure

Over dependency on certain countries for the availability of critical raw materials

The solution is in the AIR

MDI's team has spent years of research and development in making the technology sustainable in every possible aspect.

- Clean energy. No need for rare earth metals nor fossil fuels.
- Application's lifespan of up to almost 50 years, with minimal maintenance.
- Raw materials are recyclable and can be disposed of safely.
- The manufacturing concept of MDI's products are local friendly.
- Employment generation for the local workforce.

"Air is everywhere and can be compressed any time"

ABOUT THE COMPANY

WHO ARE WE?

Motor Development International (MDI) is a **Luxembourg company** with the sole vision to make sustainability accessible to all. MDI's founder, **Guy Negre**, was a French engineer with years of experience in innovating and disrupting Formula 1 engines who devoted his life to develop a disruptive engine, the first Compressed Air Technology-based engine that can have realistic applications in mainstream products.

Upon his demise, his son, **Cyril Negre**, formerly the head of R&D, assumed the CEO's position and has been working towards the improvement of the technology and commercialization of its solutions.

ABOUT THE COMPANY

WHO ARE WE?

Commercialization of MDI's Manufacturing Licenses

Custom Manufacturing & Marketing of MDI's Products Based on Compressed Air Engine Technology

Creation of joint ventures and tailored partnerships

ABOUT THE COMPANY

OUR INDUSTRIALIZATION CONCEPT

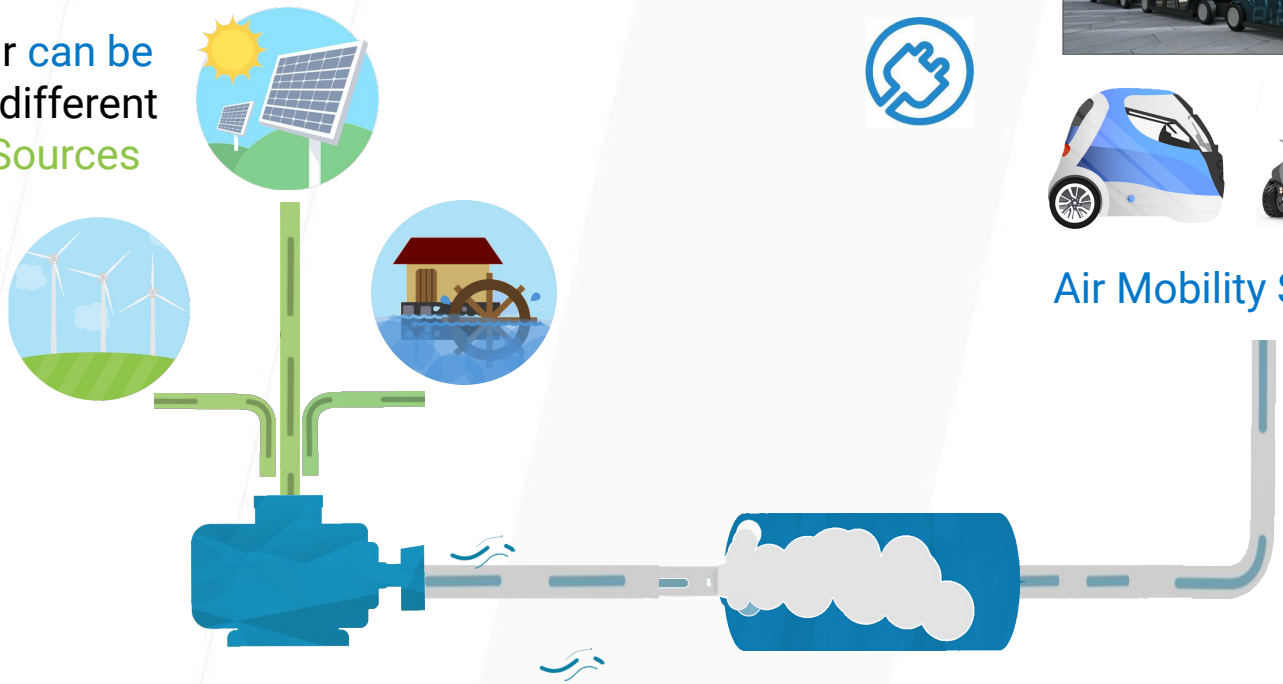
- 80% of the products are built in site
- A central MDI purchasing office for the suppliers of the remaining 20%
- A lower import tax as a result and no currency fees
- Wealth generation wich remains in the producing country and a revenue share

- A larger workforce
- Lower logistics levels and management costs
- Smaller built-up areas and land
- Lower CO2 and pollution emissions caused by the transport of finished vehicles and raw materials

COMPRESSED AIR ENGINE TECHNOLOGY

HOW IT WORKS

Compressed Air can be produced from different Green Energy Sources



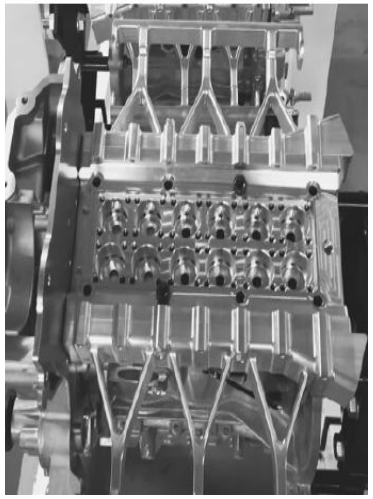
Compressor

Compressed Air “Buffer” Tank

Air Mobility Solutions

COMPRESSED AIR ENGINE TECHNOLOGY

THE UBIQUITY OF THE TECHNOLOGY



Unlike the other media of energy storage, **the Air is Everywhere.**

It is easy to handle. The tanks are composed of coiled carbon fibers surrounding a liner. These tanks are already used for vehicles with LNG (Liquefied Natural Gas) and can store compressed air under 248 bar pressures. **There is no risk of fire, explosion, or chemical leakage.**

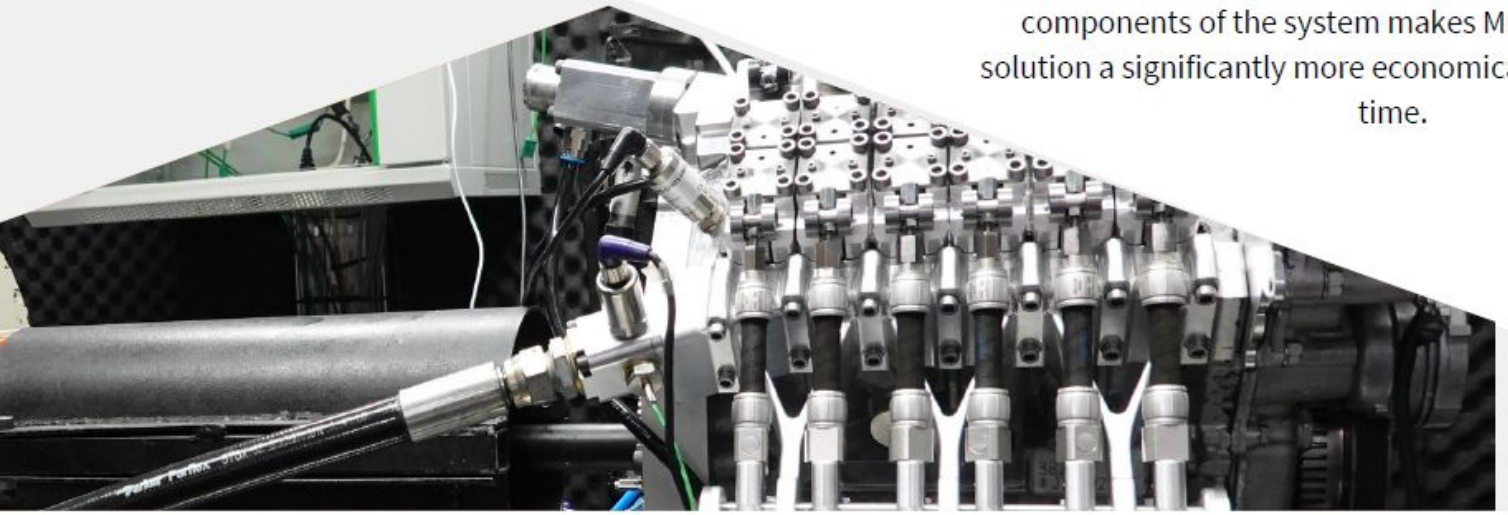
The endurance of these tanks is up to 20,000 cycles, hence over 50 years for one cycle per day which is more than any other alternative. The extraction and industrial use of carbon fiber have a much lower carbon footprint than that of the rare earth or certain strategic metals used in conventional systems.

COMPRESSED AIR ENGINE TECHNOLOGY

EFFICIENCY AND EFFECTIVENESS

In the current ecosystem, chemical or metal-ion batteries are used to store energy. The lifespan of the system is between 7-10 years and the efficiency of the system decreases steeply, resulting from several not completely reversible chemical reactions happening within.

However, MDI's system has a lifespan of 25 years with steady efficiency throughout the lifespan, with very minimal maintenance required. The absence of necessity to replace the components of the system makes MDI's energy storage solution a significantly more economically viable option over time.



Green'Air

V4-P9

- 100 % Sustainable & Green.
  - **Exhaust Gas is only Cold Air.**
- Easy to Refill, without any danger for the user :
  - In 1 to 2 minutes with “Air Station” (thanks to buffer tanks).
  - In 3 to 4 hours at a power outlet (thanks to a Reversible Engine).
- 20 to 45 km/h (Homologated Version).
- A/C - Air Conditioner.
- Recharge Cost : **2 Euros per 100 km**.
- Fun to Drive.

Ideal for :

- Golf Courses,
- Resorts & Tourist Areas,
- Campus, and Industrial Spaces,
- Airports & Harbours.

40 to 60 km on asphalt

2 - 4 seats

45 km/h

Green'Air Variants

GOLF ROVER_

PASSENGER_

PRO-WORKER_

PRO-WORKER

PASSENGER

GOLF-ROVER

Pro-Worker Variants

Pro-Worker Base

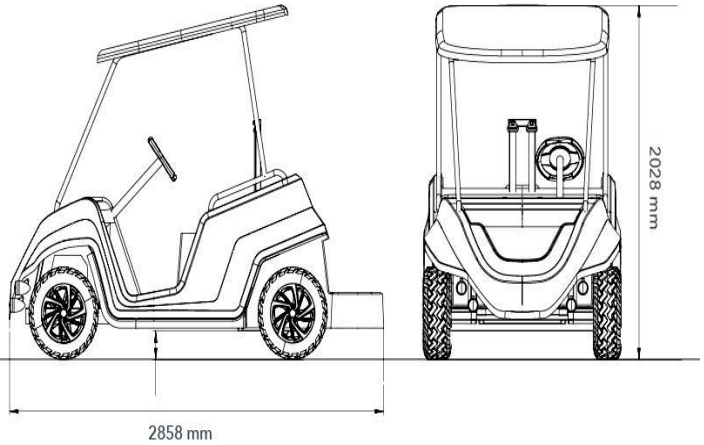
Small Skip

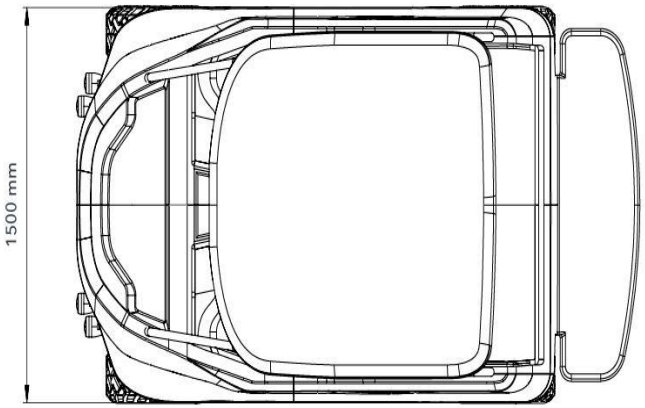
XL Skip

Big Box

Green'Air Technical Sheet

Label emission	A/C compresses air
Seats	2-4
ENGINE	
Power	7 kW nominal
Max torque	45 Nm nominal
Max speed	1500 rpm
Fuel	Compressed air (248 bar)
PERFORMANCE	
Max speed	20 to 32 Km/h (Private) / 45 km/h (Homologated)
Autonomy	40 - 60 km on asphalt
GEARBOX	
Automatic	Gearbox or dimmer
Number of AV reports	1 + reverse
WHEELS & TYRES	
Number of wheels	4
Dimension tire Front	12''
Dimension tire Rear	12''
Brakes	4-disc brakes
MASSES	
Length	2858 mm
Width	1500 mm
Height	2028 mm
MASSES	
Empty	250 kg





AIRPOD 2.0

The 2 seater Urban Vehicle with a compact design ideal for the crowded streets of big cities, AirPod 2.0 manifests MDI's excellence in product design and innovation.

On a single charge, this vehicle can travel 80 km in mono energy mode and 150 km in bi-energy mode. With MDI's air refilling station, these cars can be recharged within minutes.

100 to 120 km
300 - 360 km dual energy

2 seat

80 km/h or
45 km/h without licence

300 kg

500 L

AIRPOD 2.0 Variants

MODUL'AIR

The Industrial Train with a towing capacity of over 15 tons, making it highly suitable for a variety of applications.

MDI Demonstrated this technology at Expo 2020 Dubai, where it delivered 6 trains based on the same concept.

50 km

10 km/h
Depends on what is required*

“Expo Explorer” @ EXPO 2020 DUBAI

AIR'VOLUTION

40 to 60 km on asphalt

2 seats

25 km/h

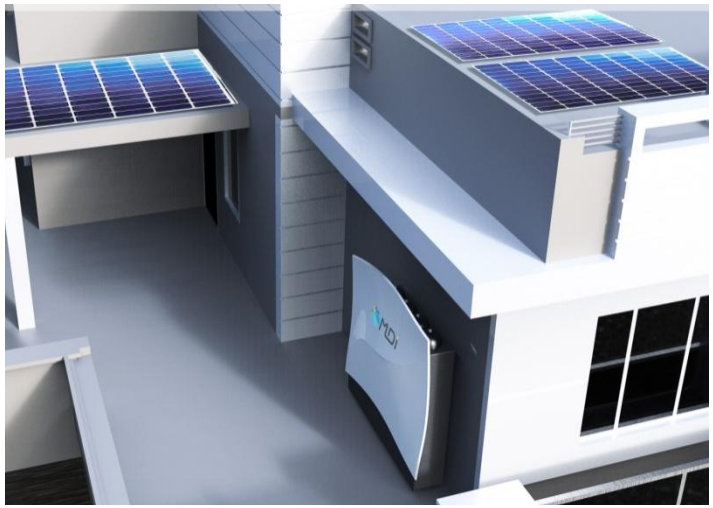
Garbage Collection Truck, built in collaboration with VEOLIA

AirWall

MDI 250L AirWall

Technical features – 100 % clean installation		
Full autonomy	**At 1000 W average :** **At 2000 W average :**	5h 2h30
Stored air volume		250 L
Max pressure		300 barg
Stored energy (isothermal)		10 kWh
Max electric power delivered		7000 W
Lifetime	**Tank :** **Other devices :**	50000 cycles ie over 60 years 20 years workmanship warranty

Future and/or additional features		
Cold air production		Available
Dual energy autonomy	**At 1000 W average :** **At 2000 W average :**	12h30 6h15
Management		Twilight detection Presence detection Smart power reduction Hourly and calendar management



The above values are given for a 250L installation. Please note that stored energy and autonomy are proportional to the air volume.

The storage capacity should therefore be defined depending on the need thanks to the modular MDI rack installations.

Manufacturing Process

- Compact Factories: **5000 m2**
- **Can be installed within communities**
- **Manufacturing Capacity: up to 5300 products/year***
- **Easy to customize**
- **Easy to scale**
- **Locally available raw materials**
- **Locally available manpower**
- **Showroom and manufacturing facility at the same place**

The assembly line of AirPod 2.0

MDI ACHIEVEMENTS AND INTERNATIONAL PARTNERS

GLOBAL PARTNERS

TATA MOTORS

VEOLIA ENVIRONNEMENT

KLM

MDI by AIRFUTURE

MDI by air mobility

MDI by KAirTek

MDI ACHIEVEMENTS AND INTERNATIONAL PARTNERS

RECOGNITIONS AND EXHIBITIONS

MDI ACHIEVEMENTS AND INTERNATIONAL PARTNERS

TECHNICAL PARTNERS AND SUBCONTRACTORS

CARTOL INDUSTRIE

SINOGES
Gas | Equipment | Service

ELECSYS FRANCE®
INGÉNIERIE & INNOVATION

NICOLLEAU SINAGE

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SCAN ME