



# Air Future Ltd – ITSNZ t-Tech22

Future Transport Conference

**“Accelerating to Zero”**

31 October 2022

Presenter

Russell Fitts, Chairman,  
Air Future Ltd

# The Future of Fuel – It's AIR

*To create affordable energy and  
transport alternatives for the future.*



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*To create affordable energy and  
transport alternatives for the future.*

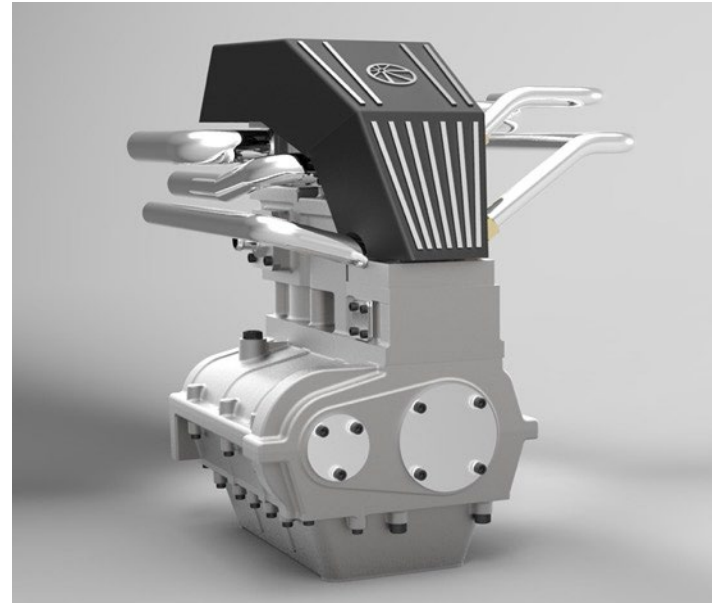


# Introduction

**MDI** - Inventors and Developers Guy Negre, Cyril Negre  
Foundations in Formula 1 motor racing  
Designed with blank page principles  
Totally free of emissions (except for clean air)  
Focus on lightweight and integrated functions



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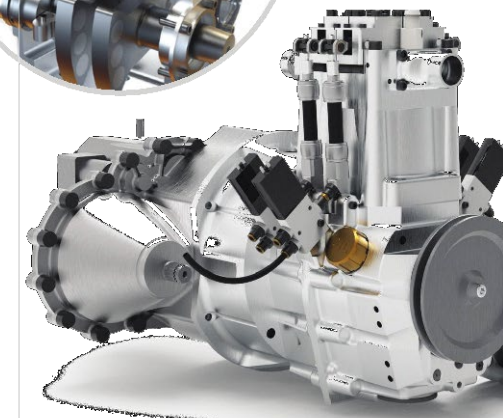
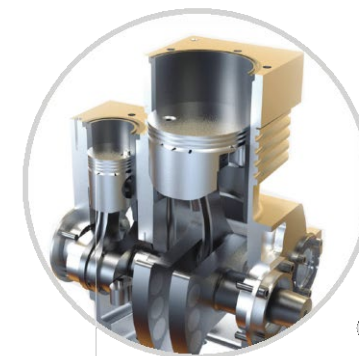
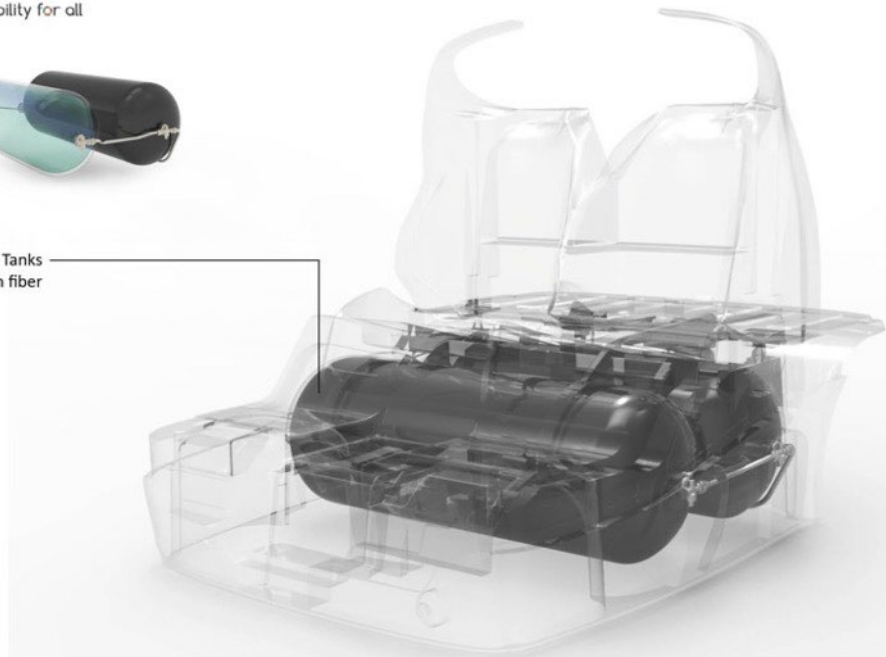
*“The air motor of today can replace nearly all existing heat engines and cover many applications.”*

# The Air Engines

*large or small*



Compressed Air Tanks  
Carbon fiber



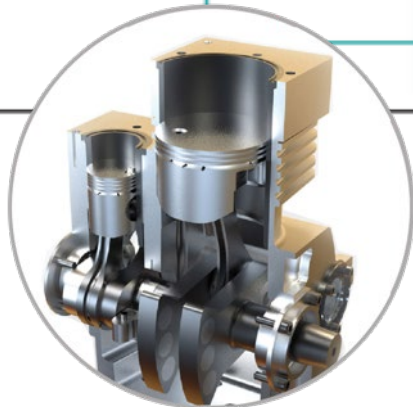
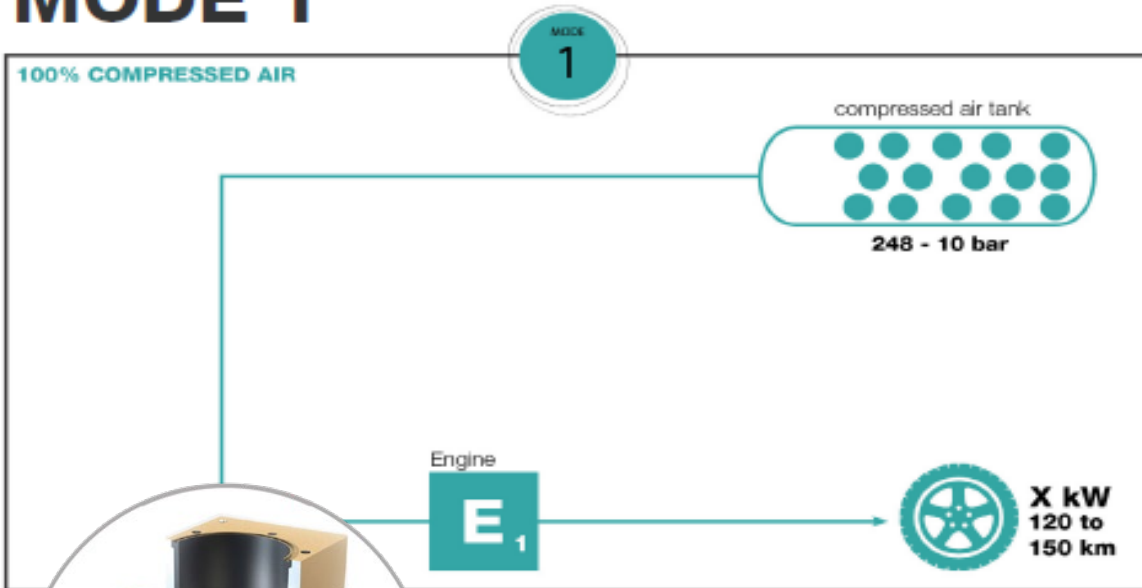
**3 Cylinder engine**  
1,000 cc, 21kw, 35kg

**2 Cylinder engine**  
430 cc, 7kW, 20kg  
46Nm

*"The air motor of today can replace nearly all existing heat engines and cover many applications."*

# Compressed Air Engine Functions

## ENGINE MODE 1



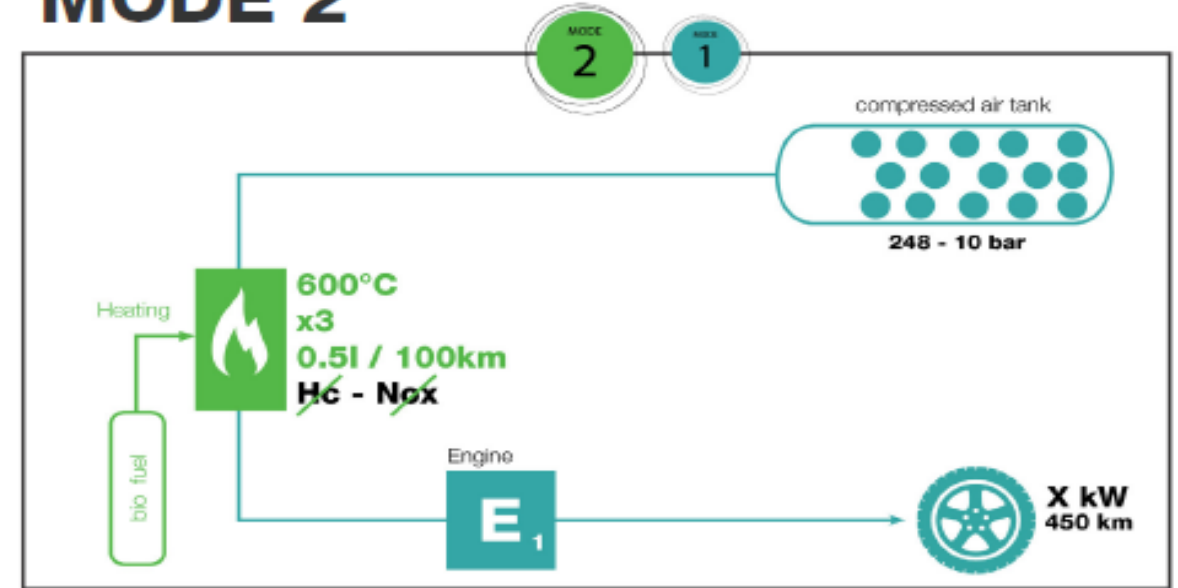
### MDI Engine Mode 1

Compressed Air Only  
Stored at 248b

#### Advantages

- Zero emissions
- Reversible Engine – can recharge at home.

## ENGINE MODE 2



### MDI Engine Mode 2 – Dual Energy

Compressed Air Plus Heat @ <600 Celsius

#### Advantages

- Almost zero NOx emissions and unburnt hydrocarbons
- Triple the range
- Variety of fuels – Bio gas, methane, ethanol, diesel, petrol, waste heat, solar expansion.

Crankshaft Push 270 degrees  
68-70% efficiencies - tank to wheel



# Applications - Transport | Electricity Generation | Energy Storage

Affordable

Lightweight

Local manufacture

Multiple applications

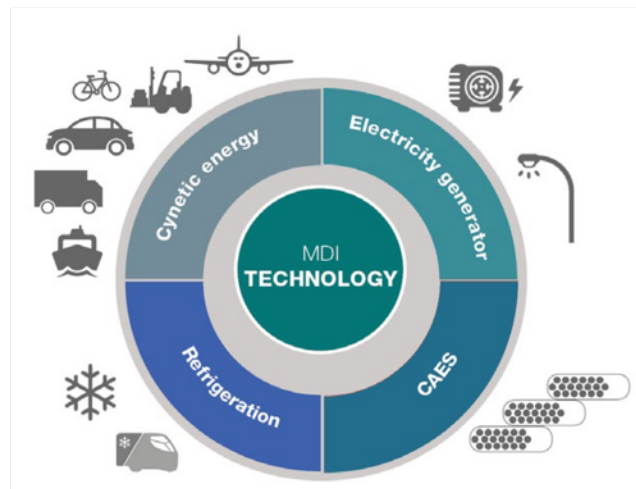
## MULTIPLE APPLICATIONS & RANGE OF APPLICATIONS

**Innovative technology for key issues.**

Our technology not only enables the motorization of a variety of modes of transportation but also the production of energy outside of the usual power networks.

This concept offers the opportunity of storage of energy resources with compressed air.

When destocking, the expansion of the gases gives back the energy and allows the production of fresh air.



Solves "The sustainability gap"



AIRPOD 2.0 & CARGO



AIRONE & AIRCROSSONE



AIRPOWER



AIRWALL



AIRLIGHT



AIRBIKE



AIRSTREAM



# Recent Transport Examples

**EXPO  
EXPLORER**  
AIR TRAIN





# Our First Vehicles

Small & Fuel Efficient  
Rural or Urban “Off Road” Transport



Air Pod - AirPod Pickup - AirPod Cargo

EU Vehicle Classification - Heavy Quadricycle L7e  
Australia - Road Vehicle Standards Act 2018  
New Zealand - Land Transport Act 1998

## Green'Air Engine

- Power - 7kW nominal

## Performance

- Max speed - 20 to 32 km/hr
- Homologated - 45km/hr
- Autonomy - 40 – 60 km on asphalt

## Weight

- 250 kg (empty)

## Dimensions

- Length 2858 mm
- Width 1500 mm
- Height 2028 mm

## AirPod 2.0 Engine

- Power - 7kW nominal

## Performance

- Max speed - 80 km/hr
- Autonomy - 100 – 120 km urban cycle
- Autonomy - 300 – 360 km dual energy cycle

## Weight

- 280 kg (empty)

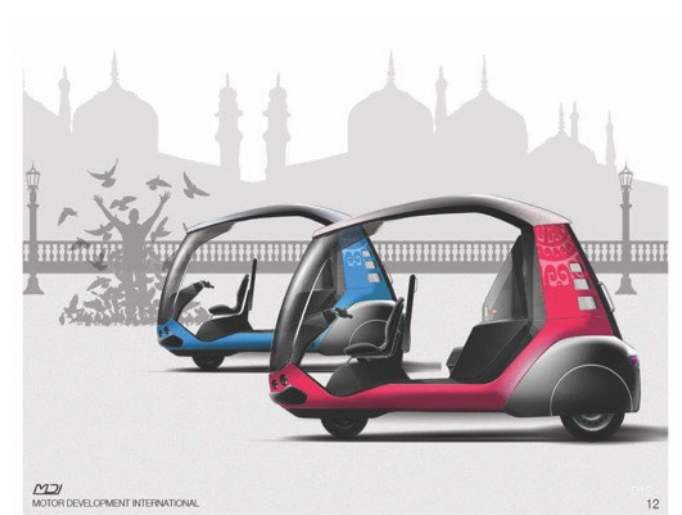
## Dimensions

- Length 2130 mm
- Width 1500 mm
- Height 1490 mm





# Future Vehicles *Watch this space*





# Recharging Options

*Overcome Range Anxiety*

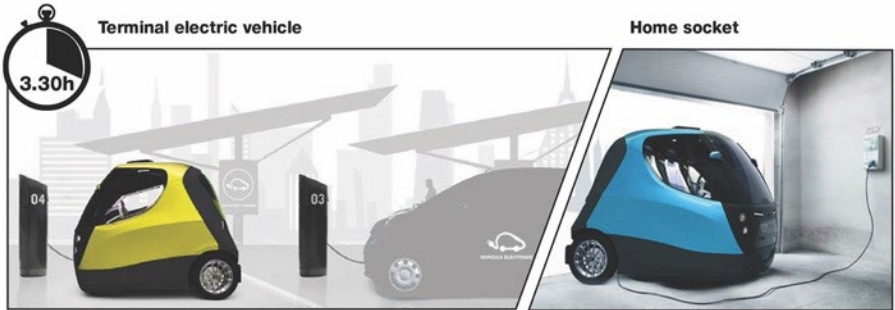
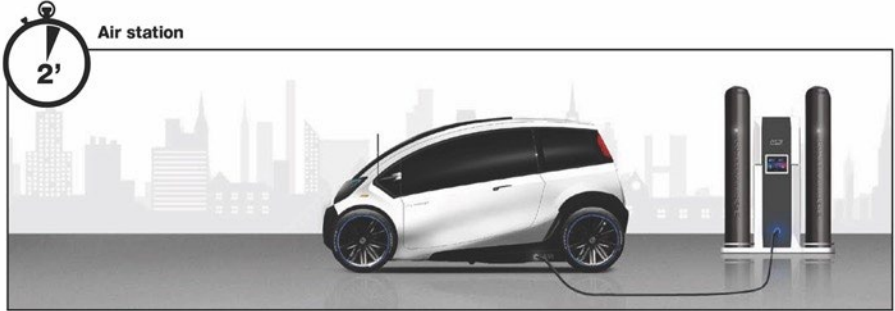
Home, In the City, on the Run

At Home: 6-7 hours

Charging terminal: 3.5 hours

Air Station: 2 minutes

Mobile Station: 2 minutes.





# Local Manufacture *Turnkey Factories*

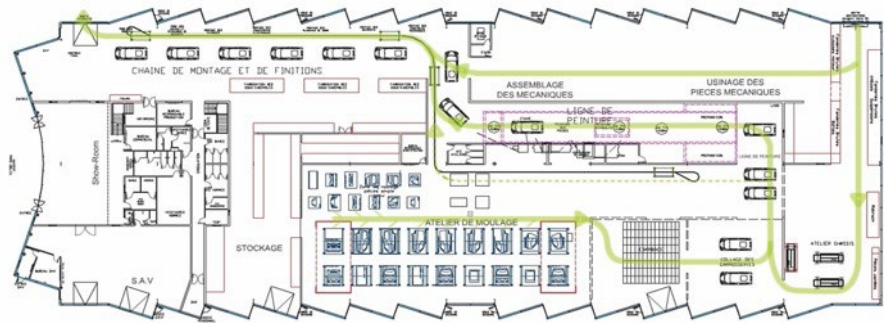
Approx 4,500 m2 factory

15,000m2 land area

5,200 vehicles per year

- Less land
- Less capital
- More employees
- Reduced production costs

- 80% of vehicle is manufactured locally
- Employing local labour.
- Lower CO2 emissions.
- Capital matches market expansion.



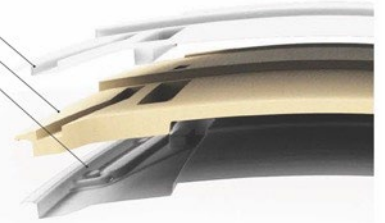
Characteristics of the material

Fiberglass or natural (linen type) : 3 mm

Polyurethane foam : 20 mm

Fiberglass : 3 mm

**RESISTANT & LIGHT**



Model shown : AIRPOD  
Function integration in composite parts.



WORLDWIDE Distributed Manufacturing





# Business Plan & Market

## Lithium Ion EV's

- Minerals - Li, Co, Mn, Ni
- Battery life 10 yrs?
- Recycling
- Carbon Footprint
- Expensive
- Range Anxiety
- Thermal Runaway

## Compressed Air Vehicles

- NZ ideally placed for CAES
- Clean
- Affordable
- Locally made
- Reduced Carbon footprint
- Locally sourced materials
- New Industry opportunities
- No range anxiety - 2 min refills
- Scalable storage
- "Battery" life cycle 50 years
- Retro conversion potential
- Minimal \$ capital
- Available now.

## Hydrogen

- Expensive to make
- Expensive to buy
- Inefficient 4/1
- Dependent on Electricity
- Storage Complications
- Liquid or Gas
- Transport Complications
- Combustion or Fuel Cells
- Requires H2O
- Requires Natural Gas
- Requires \$\$\$ Capital

## The Sustainability Gap Air Future Ltd

*To create affordable energy and transport alternatives for the future.*

## Aim

Air vehicles being the principal vehicles of choice for urban, commercial and industrial New Zealand.

New Zealand can lead the world in achieving zero pollution transport provided at an affordable cost.

Urban, rural, commercial and industrial applications.

### Step 1

Technology Transfer - Show & Demonstrate.

### Step 2

Capital Raising

### Step 3

Commence market entry, import, outsource and assembly, manufacture



# Fuel doesn't need to cost the Earth or your pocket.

Sustainable, Renewable  
Compressed Air Transport.

Invest in your future.



*To create affordable energy and transport alternatives for the future.*