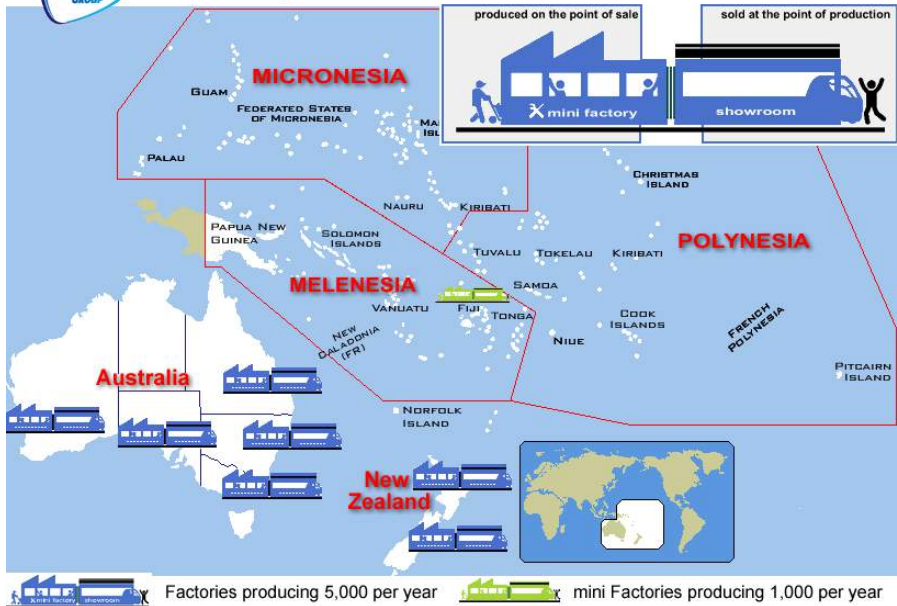




Air Future Group LICENCE AREA WITH MDI FOR COMPRESSED AIR PRODUCTS



A vision for Australasia to manufacture and market their own scalable compressed air energy storage and clean vehicles, with technology solving many of today's renewable energy and electric vehicle price and technology constraints.



Air Future Group Business Overview 2019

And the energy future paradigm simply states that for technologies to be effective they must be available and affordable to the masses, and not just luxury products for the small minority who can afford them, or with subsidies.



MDI compressed air vehicles & energy storage do exactly that.



**Affordable
vehicles running
100% clean on
compressed air
for the masses.**



**Affordable
energy storage
100% clean on
compressed air
for the masses.**



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Forward

- RENEWABLE ENERGY & CLEAN TRANSPORT -

- **Transition:** Both the energy industry and the transport industry are entering into very complex and protracted revolutions; one to renewable energy and the other to clean vehicles. Both will be very influenced by development of digital and intelligent interactive infrastructure.
- **Problem:** With the current stage of technology old energy and new energy are not compatible. One significant contributor is that renewable energy is intermittent. In addition there is inadequate infrastructure yet to support current electric vehicles. To counter both is very expensive with current commercial technology.
- **Solution:** What would significantly improve the energy transition would be affordable and economically scalable energy storage. At a decentralised consumer level this would facilitate stable generation and transition. For electric vehicles the current legacy manufacturing approach necessitates costly mature battery technology, and that needs change, which it will.
- **Barrier:** The three biggest are politics, legacy commercial technology, and hesitant investment into new technologies, compared to say software for example. In part that is also influenced by the large capital cost in these two industries.

Preface

- COMPRESSED AIR STORAGE AND VEHICLES -

- **Distributed storage:** Distributed is the opposite of centralised utility storage; in other words out in homes and businesses and industries. When aggregated with access into a grid then one has electricity generation, however current grid and energy source mix is not yet geared to integrate this effectively. Stand alone remote micro grids are okay.
- **Autonomous electricity:** Stand-alone micro grids can in theory function autonomously – the technology is there now. But the commercialisation is not. For renewable this involves solar or wind and these are intermittent, so needs storage. Storage is the Holy Grail but is not yet affordable.
- **Affordable vehicles:** Manufacturers can do a lot with electric vehicles, but make them cheap is not one. The reasons are twofold – the legacy approach to manufacture, and mature battery technology that resists adequate price decline, plus has many negative aspects to mass global uptake.
- **Range & refill:** The other critical often played down issue is that it takes a long time to recharge via normally accessible electricity, and adequate fast recharge infrastructure won't be commercial for some time.

This Information Memorandum covers technology and products to address the above.

1. Companies

- AFG, MDI & PARTNERS

The Air Future Group (AFG) is based in Australia and New Zealand, and consists of three company arms: transport, energy, and global. They have exclusive licence rights for the broader Australasia/Pacific Island territory to manufacture and sell MDI compressed air clean vehicles and electricity generation and energy storage products and solutions. In conjunction with MDI they may also be able to assist MDI with product to establish eligible licences internationally.

Our technology partner MDI of Luxembourg, with its research and development operations in France, is a world leader in the application of compressed air energy storage applied to both clean vehicles and electricity generation. MDI holds global patents for their products, and their energy storage ("battery") is based on compressed air instead of chemicals. Their vehicles are manufactured uniquely as lightweight clean vehicles, and both the energy storage and vehicles are priced for the masses to scale.

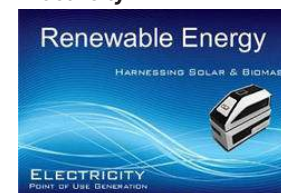
OUR PRODUCTS

Transport



Compressed Air Vehicles (CAEV)'s that will be manufactured at turn key factories in Australasia.

Electricity



Sustainable energy production using Compressed Air Batteries for (electricity, heat, hot water, air conditioning)

Storage



Applications for home and commercial use, both centralised and distributed using Compressed Air Batteries (CAB)'s

In the technology / commercialisation licence partnership there are three distinct stages of development.

- ➔ **Development:** MDI's R&D has developed the technology and products and continues.
- ➔ **Industrialisation:** MDI has developed its global model and its major partners.
- ➔ **Commercialisation:** MDI does NOT commercialise but AFG DOES. This IM topic.

These are addressed in the Section Commercialisation towards the end of this IM.

Development is ongoing, and includes the following:

- **Existing:** Completed/completing the technology and the smaller engine/system, entry vehicle AirPod standard, AirPod commercial models, the industrial vehicle AirBom, the fixed energy storage unit AirWall, the mobile energy storage unit AirPower, the turnkey distributed factory, and refill station.
- **Pipeline:** The larger vehicles and engine.
- **Future:** A full range of products and systems as discussed herein.

Industrialisation includes the development of the commercialisation model but not the actual commercialisation, the relationship with development partners below, and the factory and production process and support.

Commercialisation under the MDI model is outsourced via licence. This stage is only now commencing, and is the subject of this IM and the Commercialisation section. AFG has an exclusive commercialisation responsibility for the technology, the products, and the manufacture via turnkey local factories. They have this for Australia, New Zealand and the Pacific Islands. AFG also in conjunction with MDI can also develop the global market.

Under industrialisation, and preceding commercialisation, MDI's technical and product uniqueness can be demonstrated by their partner development and customer relations. Tata Motors the leading Indian company has acquired the commercialisation licence rights for all of MDI's technology for India. Tata have worked closely with MDI in providing input and requirements of the technology. Veolia the giant waste and general services business have developed product using MDI technology seen later herein. KLM Airlines has assisted MDI in feedback and airport application suggestions.



The picture shows the founder Guy Nègre and his son Dr Cyril Nègre, major partners or customers within MDI's industrialization, and AFG's transport arms' licence rights.

By way of history MDI, or Motor Development International as it was initially known, was created in 1991 by founder Guy Nègre with the objective of running vehicles powered with compressed air. Guy was convinced that it was possible and profitable to develop this technology based on his experience in both Formula 1 and light aviation. Over the many years and since Guy's decease his son Cyril Nègre PhD and his team of engineers and technicians have developed and improved compressed air vehicles and energy storage. AFG Directors have one of the longest MDI friendships since 1999. In 2006 and 2018 AFG updated the partnership for further commercialisation rights and exclusivities.

2. Business

- COMPRESSED AIR STORAGE AND VEHICLES

Compressed air storage as applied within vehicles and electricity generation has unique advantages over traditional batteries. Additionally MDI has adopted lightweight composite materials in its product manufacture. Vehicles are lightweight and strong, with many functions integrated into the bodywork adding efficiencies. Furthermore uniquely MDI manufacturing approaches are ideally suited to smaller distributed manufacturing, benefiting regions via small cleaner local factories, employment and control over ones own energy destiny.

The benefits of that ecologically, politically, and economically to regions, investors, and customers are outlined later herein. MDI has taken a holistic approach, for example:

- MDI clean vehicles are both affordable and efficient for the masses.
- The electricity storage is both affordable and economically scalable.
- Refilling and range solutions improve customer experience.
- Clean decentralised smaller manufacture provides regional benefits.



Above shows public interest at the MDI's own factory outside of Nice in France. This is an example of AFG small turnkey factories to manufacture renewable energy storage and clean vehicles regionally in Australasia, enabling a showcase for providing local employment, political independence, exporting within our licence area, and profitable investment.

MDI's technology journey commenced with building a revolutionary reversible compressed air engine that runs cold and with high efficiency and low maintenance. As part of an energy system this includes air compression and storage in carbon fibre tanks and efficient air expansion to produce power or generate electricity. From the beginning MDI focused on modularity and scale – whether for vehicles, energy storage, or manufacture. It thereby becomes straightforward to go from consumer to commercial to industrial applications – for vehicles and energy.



For **vehicles** this meant a design from the ground up, such as the use of composite materials, bodywork integration of functions, and design for strength, lightweight, efficiency, and affordability. MDI is progressing to develop a suite of transport products.



The AirPod consumer and commercial vehicles are first, alongside the Veolia industrial vehicle. AirOne and AirCity are in the pipeline, and other products including boats will either be designed in-house or in joint venture with a specialist partner. AFG is focused on immediate products plus those within the eighteen to twenty four months timing.

For **energy** via electricity generation and storage this meant the independent integration of components created big scale advantages. Engines could be larger or smaller or added separately (racked) and they could be operated in different power modes. They could also be operated with dual energy providing further range benefits. Storage tanks could be larger or smaller and added separately. Solar panels could be added separately to match the efficiency and provide cost saving for the overall system.

For communities or remote micro grids energy storage can now be aggregated and positioned in a single dedicated area and can easily be placed underground. These benefits were recognised by the United Nations with an award in the sustainable transportation sector at the Powering the Future We Want program held in New York on December 2016. The UN is interested in MDI applications in developing countries.

UN recognises leadership of MDI in sustainable transport

On this occasion, the United Nations and the China Energy Fund Committee (CEFC) paid tribute to the leadership and innovative practices of MDI in energy for sustainable transport.



It's not only the obvious remote areas in underdeveloped countries where MDI energy solutions can improve lifestyles but any remote or off grid region or industry operation.

3. Industry

- RENEWABLE ENERGY & ELECTRIC VEHICLES

The renewable energy industry and clean transport are entering into respective revolutions. But for both the current weak point and the Holy Grail remains energy storage. The digital industry will play a vital role for both industries, but energy storage firstly needs technical and commercial efficiency, which it currently lacks.

Traditional fossil fuel energy <



> Renewable clean energy

When in coexistence the old and the new are largely incompatible both technically and commercially. A technical contributor is renewable energy intermittency, and a commercial contributor is capital investment and pollution of fixed base load energy. If storage were economical and enabled commercial scaling this would assist the grid.

Whilst there has historically been technical and economical improvements in storage and scaling price margins, they are not at a pace to support the industry needs even now, let alone in the future. Much of the technology has been around for a very long time, is mature, and is limited in both its improvement capability and its pace.

For vehicles the shift is underway, be it slowly still, to move away from fossil fuel power to renewables, and then onto autonomous technologies interacting with infrastructure.

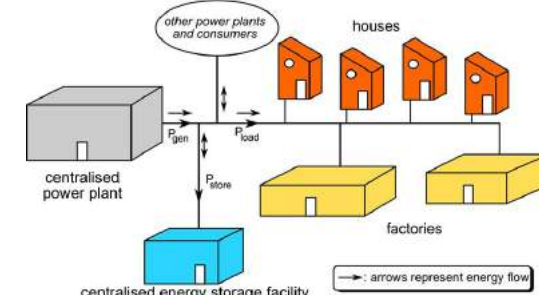
For energy generation the shift includes decentralised consumer power generation, whilst meanwhile fossil fuel and renewable generation learn to live together during the transition. But for both, storage is the Holy Grail and currently therein lays the hurdle. Storage needs to be affordable, economically scalable, user friendly, and with low cradle to grave pollution footprint. It is essential to counter the renewable intermittency, instability within grid operations, and commercial decline of both traditional fixed baseload providers and peaking providers.

Affordable and scalable storage combined with intelligent digital home and grid management integrated centrally and decentrally can bring stability to the grid and allow the transition in an orderly and commercial manner. Decentralised generation can become practical to manage businesses, homes and communities as aggregated micro grids – mini virtual power plants, coordinating with central utility generation.



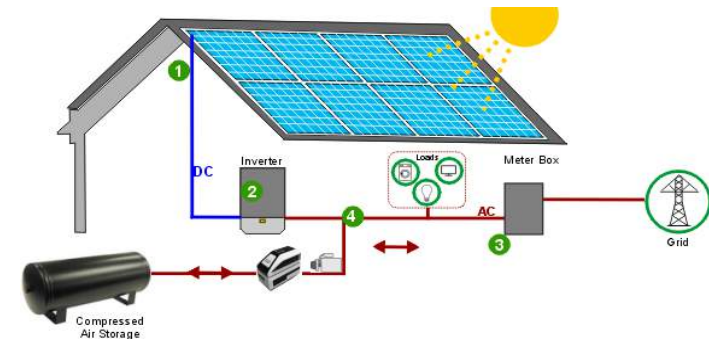
Transition to renewable energy, whether via centralised utility or decentralised user/generators (prosumers), is not just about connecting to the grid every-increasing renewable energy. The technical and commercial implications need to be intelligently (digitally) managed. It's also not about simply everyone going off grid, neither economically nor socially.

Centralised system



Historically and still currently energy supply is predominantly centralised utility based and distributed via interconnectors and transmission to end-users. As central renewables generation switches from coal, gas and hydro generation to include solar and wind, the latter's intermittency may in part be stabilised by storage. Consumers are at the whim of resources, generators, transmitters, retailers, and politicians.

Decentralised system



Technology is rapidly enabling consumers of energy to also be generators – either for their own electricity use or to sell back to a grid. Currently solar panels continue to drop in cost and increase in capacity. In sunny locations this energy alternative is only marred by its intermittency and politics. Storage would complete the picture, but it is too expensive and not economically scalable (margin drops with capacity).

MDI energy storage systems are both affordable and economically scalable, and are ideally suited to distributed energy generation, both fixed and mobile. Hence they are also suited to micro grids and community virtual power plants – the aggregation of users.



Aggregation of energy users into a community or regional virtual power plant is not new, and neither are remote micro grids. But the technology and the commercial viability have a long way to go. Leading that may be the generation such as solar and likely the numerous digital technologies on the market, but lagging will likely be the storage.

In Australia for example VPP trial sites tend to be heavily subsidised, with the perennial price laggard being storage. The home benefits are clear, including time shifting from on peak to off peak, demand management, selling surplus supplying back to the grid, or even off grid. But the current solutions are generally not commercial. If storage were affordable, and economically scalable, then storage as a component can be separately and dynamically managed.

In the MDI case storage can be aggregated and buried underground. Adding capacity is a simple matter as kW energy and kWh power can be separately managed – add more engines or more tanks. And being affordable and scalable adding capacity can be economical rather than the converse. These same principles can be applied to many industry's storage and energy needs, examples including mining, agriculture, hospitality, hospitals, manufacture, nursing homes, construction, defence, and education.

Current electric vehicles issues include affordability, range and chemical battery concerns. Vehicles are built maintaining the legacies of the automobile industry, being much faster with higher acceleration than can legally be used. Legacy manufacture makes heavy vehicles and heavy requires larger batteries and costs. Manufacture is via huge centralised factories creating a global polluting distribution footprint ignored in assessing a vehicle's climate contribution.

Very likely car designs and transport usage will change with the new era of transport, and with generation iGen, the technically raised generation. There will inevitably be new plays out of China, driven by critical pollution, cost considerations, and a booming middle market. Detroit will compete with Silicon Valley for influence in the transport industry. And vehicle storage for currently heavy vehicles will remain for some time a critical part of the equation. Legacy storage is chemical batteries, which are expensive, require raw materials extraction, have manufacture and disposal issues, deplete relatively quickly, and do not have a long life cycle.

The markets for renewable energy and clean vehicles are inevitable, but early 2019 in Australia there were two million houses with solar on roof, but only fifty thousand use battery storage, with few espousing the economic benefits. And only 0.2% of vehicles purchased are electric. So there are these hurdles to be crossed.



Tata Motors engineers at MDI with founder Guy Nègre in early days discussing technology.

4. Technology

- COMPRESSED AIR SOLUTIONS

It is intriguing though understandable how little is understood about the thermodynamics and mechanics of the MDI technology. What is frustrating is the extent that people, engineers included, feel they know because of personal limited experience. Compressed air has been around forever. What MDI has achieved is revolutionary.



We will not within this IM endeavour to address the details, but rather introduce them.

MDI has three industrial outcomes to its technology:

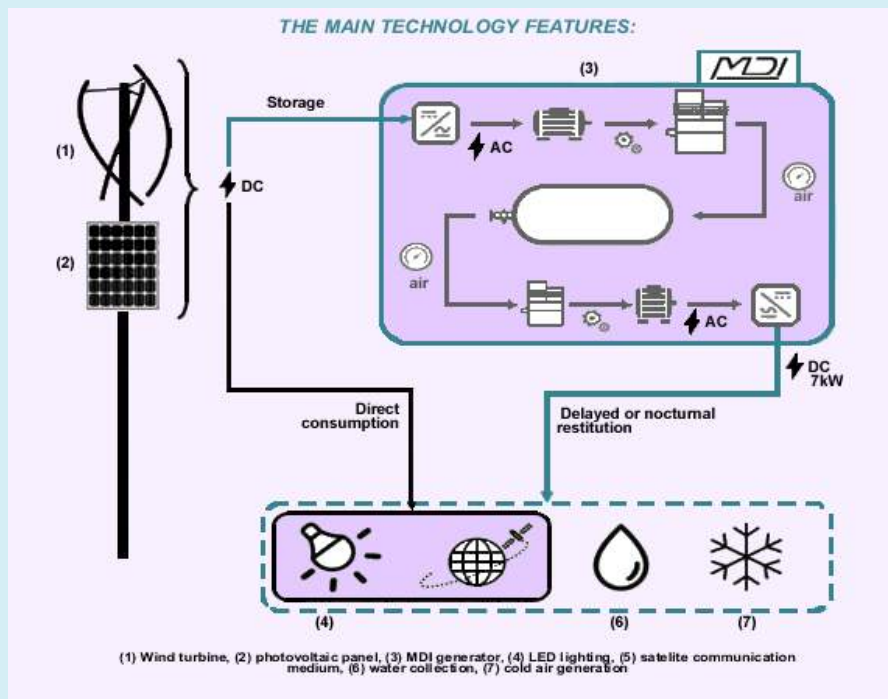
- **Energy** storage & generation (power and electricity)
- **Vehicles** lightweight & efficient (using composite materials)
- **Manufacture** distributed and regional (clean and effective)

At the core the MDI energy storage and generation system consists of a uniquely designed air engine along with functions providing compression, storage, expansion, and drive power or electricity generation. Storage is flexible, and hence scalable, via carbon fibre or steel storage tanks. The storage cycle can be powered by electricity (just like charging a traditional battery) or by a solar or another renewable source, or via the MDI mini refilling station taking just a few minutes. The storage system could be referred to as a 'compressed air battery'.

The engine also has an optional advanced model (dual energy). Here it can use lower temperature external combustion to heat and further expand the air by burning any fuel (including bio-fuel) thereby tripling the range. MDI lightweight vehicles use composite materials and manufacture can be regional. Total carbon footprint is minimal and air storage is chemically inert.



Looking into the MDI engine research and development room.

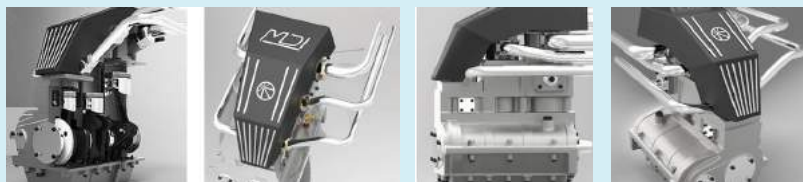


At the core of the MDI energy system is the reversible compressed air engine. The compression cycle is initiated by external energy just like a traditional battery, such as grid or solar. The engine compresses air into the tank. When instructed the tank releases air which drives the engine to run generation or drive power. The intelligence is managed by software. An inverter provides the relationship between and AC and DC and intelligence related to the solar for example.

Engine

The engine systems are small and light, and can be different sizes or racked together. The core component is the small and light compressed air engine, with initial models being the 2-cylinder engine (7 kW @ 1500 rpm, 430 cc, 20 kg) and the 3-cylinder engine (60 kW@ 3,000 rpm, 1000 cc, 35 kg). As the engines produce no heat, no cooling system is required. This contributes to the low weight and also to reliability. The engines have a flat torque curve and little change in efficiency across their operating range. Both engines can operate over a power range, so are not limited to 7kW and 60kW. The engines are very light and reliable. A key to engine design is to achieve efficiencies.

MDI compressed Air Engine

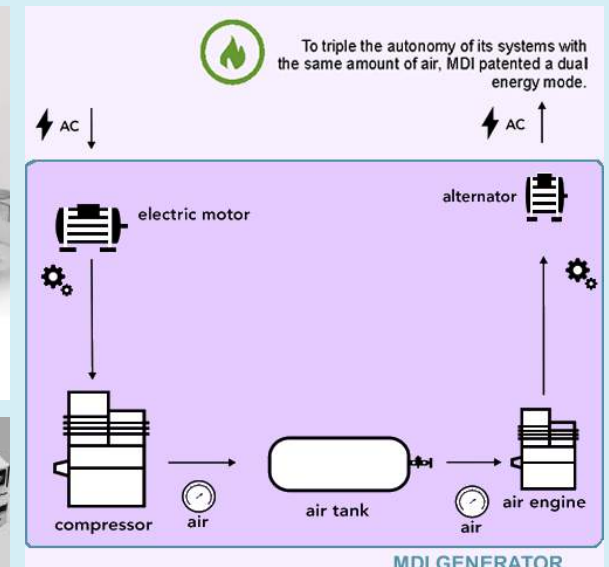


3 Cylinder, 72kW

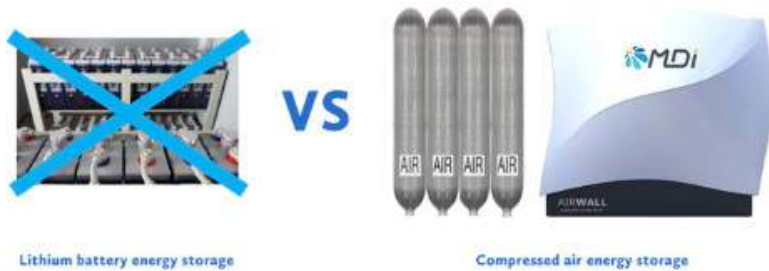
Storage

The engines can be run reversible as compressors and initially be plugged into a power point or renewable energy source or connected to the small MDI compressed air station. Air does not hold intrinsic energy, but when compressed it is like stretching a spring that can then be relaxed on demand. One of the strengths of this principle lies in the fact that once this energy is stored it does not deteriorate and remains available. This is not the case for a chemical battery which loses its power over time, as well as its ability to recharge.

The storage tanks can be carbon fibre for mobile applications or steel for stationary, and can have different capacities each storing air at 248 bars. As part of a storage system tank capacity is much cheaper to purchase than capacity in other systems. The tanks used in MDI technology are inert, causing no harm to the environment, including regarding extraction of raw material or recycling. Carbon fibre tanks have an estimated life span of 20,000 cycles, which is equivalent to a life of more than 50 years, and exceeding or matching a vehicle life. The recycling poses no chemical or physical problems. A filling test must be carried out every 5 years. The approved tank complies with the existing UN ECE R110, and does not fragment in the event of an accident.



Tanks are a core component to the energy storage, and they also provide great capacity flexibility. System components can be separately either increased in size, or more added. So for any fixed kW capacity system tanks can be added to increase duration kWh.



Affordable and Scalable. Compressed air energy storage is less costly financially and environmentally.

Dual energy

When run on compressed air alone the MDI vehicles have a good range as can be seen shortly. One of the major hurdles within the industry in the shift from traditional fuel to electric vehicles is the facility to recharge. Electric vehicles can provide charging stations, but for some time to come that infrastructure will be limited due to its cost and installation rollout, as it needs sales volume.



One current industry approach viewed as a transition is to produce a hybrid vehicle running both an electric battery plus a traditional internal combustion engine. This requires two completely separate systems, is very costly, with each system alone tending to underperform. And it defeats the desire for a clean vehicle, so sales are low.

MDI has a unique hybrid option that uses only the one same system. Instead of a traditional vehicle's 2000 degrees internal combustion producing pollutants the MDI system adds an external low temperature 600 degrees burner outside the engine. This heats the compressed air tripling the air volume and hence the range. This engine model can be optioned to function on air alone or on air and fuel in dual mode. The design is a very efficient way of taking the thermal energy of the fuel and converting it to mechanical energy. The external burner can use any fuel, including for example biofuel.

Using a traditional fuel requires just 0.5 litres per 100km, and generates virtually zero amounts of dangerous nitrogen oxide emissions and unburned hydrocarbons. This advanced technology around the expansion of the air allows MDI engines to achieve efficiencies of more than 68% between the tank and the engine outlet, compared to conventional thermal vehicles have a yield of around 10% in the urban cycle.

Scaling

The MDI compressed air motors can replace most existing motors and cater for many kinds of applications. MDI realised early that it's the overall system efficiency, in other words a holistic approach, which is key. Not just the storage element in isolation. On the transport side they revolutionised the design of cars using composite materials and a highly efficient design. Now the resulting vehicles are much cheaper and more efficient than traditional electric vehicles.



Composite flax fibre material



Sophisticated computerised equipment creates product moulds.

On the energy side using the systems approach, MDI recognised the future would not be just about one-off energy storage but about community or micro grid storage. Hence they included in their focus the advantage to be able to economically scale. In other words as the capacity increases the marginal cost falls and the competitive advantage increases. This is in part due to the independence of adding components, for example independently adding tanks or engines. It's also attributed to efficient system interactions, for example adding cheaper solar panels to benefit from scaled up storage.

Modularity

Modularity is a fundamental focus of MDI throughout all its designs.

It is evidenced in the following:

- Vehicles design and construction can be readily scaled from the smallest entry level to the largest industrial vehicles.
- Energy storage systems can vary from the smaller stand-alone applications to household to community to micro independent grid level.
- Manufacturing factories can be established from small volume commencement via steps up to full production.

Modularity facilitates the ability to quickly generate tailored applications for multiple industries with much less time, complexity and cost. For example in mining with their avoidance of fire there are restrictions on chemical batteries, which do not apply for our air only mode vehicles and energy storage. In agriculture the applications are ideal to replace diesel generators or pumps. In many locations where scale is important tanks can simply be placed underground.

Refilling

The flexibility of air has enabled MDI to design clean economic refilling solutions for its vehicles. Refilling options are from outdoor electric charging stations or from the home via connection to existing electrical terminals. In the case of home recharging from the home power plug for 16 or 32 amps time is 7h or 3h30. For less or more plug amperage the time will adjust proportionally. A third alternative is a dedicated MDI fast charging air station supplying high-pressure compressed air to fill the tanks in a few minutes.



Vehicles could be filled by mobile refill services. Ideal for car sharing or fleets. Alternatively at an air filling station covered under products, or on any electric plug.

5. Products

- AIRPOD, AIRONE, AIRBOM, AIRWALL, AIRPOWER

AirPod 2.0 Standard

Providing a new experience in urban mobility, one can be the nimblest driver in the city. Comfortably conditioned for two the AirPod 2.0 offers an ideal solution for one's daily quick trips, plus is an optimal size to sneak into the city and into a park. The individual can use it every day, companies will be able to equip their fleets, and for car sharing it will be ideal in the CBD or suburbs.

Customised on order, this is the small entry-level clean air vehicle, with exhaust consisting of water and air, and the body of composite light materials. This four-wheel two-seater vehicle is capable of 80 kms/hr, has a range on full tanks of 120 km, or up to 360 km in the dual mode

using just 2.25 litres of fuel. Weighing just 280 kg it can turn on the spot, is just 2.13 metres long, and still has 500 litres for cargo. Air storage is via safety approved carbon fibre tanks. The vehicle has front open design with easy access to the vehicle's interior both front and back.

Markets for the AirPod include inner city service vehicles, iGen generation and family second vehicle, fleet use for city councils, airports, university campus, resorts, gated communities, retirement villages, and golf courses. It is ideal for daily activities such as single driver, student, craftsman, and deliveryman, professional, or second vehicle. Within Australasia there are the certified on-road and off-road markets for Pacific Islands and niche private and off-road applications for Australia and New Zealand for example service and delivery vehicles within airports, parks and reserves, university campus, tourist resorts, golf courses, retirement villages, and closed communities. And there is the global opportunity, especially South East Asia.



Specification Snapshot

A quick specification summary includes engine type reversible compressed air, 2 cylinders in line each having an included MDI active chamber, variable valve timing, crankcase and head in aluminium, cylinder 430cm³, max power 7kW at 1500 rpm, and max torque @ 250 to 1500 rpm. The transmission type is to the rear wheels through the automatic gearbox with paddle behind the steering wheel. There is electronic management of a kinetic energy recovery during deceleration phases, with the frame and structure based on composites sandwich glass fibre/polyurethane foam integrating 35 key functions for size and weight reduction. Passengers face the road ahead via the two seats. There are four discs brakes, and the energy air storage tank is thermoplastic liner and carbon fibre wiring, with volume / pressure 2 x 125 litres / 248b, and based on EC norm ECE R 110. Kerb weight is 280kg, with max speed 80km/hr and urban cycle range 120km or 150km depending on use. Length 2130mm Width 1500mm Height 1710mm Wheelbase 1490mm The AirPod is classified in Europe and generally as category heavy quadricycle (L7e)

The L7e category is not yet in Australia and New Zealand with relevant legislation under review, limiting on road usage. Interim focus is on the Pacific Islands and the earlier mentioned Australasian markets.

AirPod 2.0 Commercial

The AirPod 2.0 can be configured in the factory for commercial & industrial applications. There are three variants: classic, pickup and cargo. Each variant is intended to cover any need from professional use to daily activities. The various shapes suit commercial and industrial, with recreational variations being planned. Cargo space is from 1 to 2 cubic metres.



AirOne/AirCity

The upcoming vehicle is the AirOne, a more spacious and family-oriented highway vehicle, with a range of 170 – 200 km or 600 km on dual energy. This will be the general family and transport car and well suited to the car-sharing and autonomous models of the future. The design will incorporate all the benefits of low weight, low cost, ease of use, and dual fuel mode capability. All vehicles will use strong lightweight composite materials. The AirOne will have maximum speed of 100km/hr, and be available in 3 or 5-seater

versions with cargo capacity of 1,000 litres and weight 450kgs. It will nominally be 15-20 kW, and can also be customised as an off-road vehicle or as an urban family style SUV. The AirOne is being designed to have a driving range of over 600 km with the dual energy system using only 3 litres of fuel and a full air tank. The AirOne is designed to meet normal family vehicle certification requirements. The AirCity will be a larger capacity version with a larger engine and capable of 130 km/hr.



AirBom

The first current industrial vehicle is a small waste collection vehicle built initially for Veolia. Veolia is a major player within the field of waste management in France. Their objectives are for urban cleanliness. In this context MDI works together with Veolia in the design and production of their non-polluting vehicles and systems. The AirBom has 2 tons payload, drives at 25 km/hr, with cargo of 13 cubic metres, and a distance on mono energy of 50km, and 3 seats. The AirBom demonstrates a new generation of industrial service transportation. The AirBom Light as it is known is the fruit of collaboration between Veolia and MDI.

It is powered by compressed air and emits absolutely no gases or particles. It enables a significant reduction to the impact of collection on the quality of life and health of residents.



Early concept trials and road certification

Veolia launch production version.

AirWall

The AirWall is the fixed energy storage and clean electricity generation solution. Coupled with a photovoltaic installation each system it is able to store and supply power levels of 7kW currently, and 60kW with the next engine. The power can be set above or below these levels within a range. A continuous supply of energy can be managed by the tank storage capacity. Further capacity can be managed by adding racked engines or moving to a larger one, and the same for tanks. Hence the modular design of the AirWall gives the ability to extend the capacity in power or duration by adding components.

The fixed storage AirWall system contains the engine/compressor, storage tanks and electricity generator. It connects to solar, wind, or the grid. Energy storage can vary from households to communities to independent micro grids, including the future for community “virtual power plants”. The consumer can benefit from cheaper pricing, independence from the grid, or selling energy back to it, time shifting from on peak to off peak, and demand management. Most industries spanning from agriculture to mining to manufacture to hospitality to hospitals all have storage and energy management needs. The cost and scale advantages should make the solutions very competitive.

MDI energy solutions are more affordable and easier and cheaper to scale. Our comparisons show that when used as part of a Solar PV system, cost advantages continue to climb as capacity increases. For off grid systems, where storage required is far greater than grid connected systems, our comparisons demonstrates significant advantages over chemical batteries.



AirWall on a home for demonstration.



AirWall engine and tanks packed in attractive cover in accordance with capacity required.

AirWall on an industrial site.

AirPower

This is the stand-alone mobile storage and electricity generation unit providing autonomous electricity supply applications such as uninterrupted power supply or a substitute for diesel generators. The system caters to stand-alone applications integrating storage and electricity generation with renewable energy. Similarly it can be supplemented via dual energy mode, intentionally via using cleaner fuels such as bio-fuel. AirPower is mainly intended for a professional environment, and is an ideal ally for meeting a specific or immediate need for power.

The AirPower unit similarly contains the engine/compressor, storage tank, and electricity generator. Applications include on grid or off grid systems with solar or wind. The AirPower range will in due course encompass the larger engine.



Nicely packaged.



Containing the components required



Engine system and tanks match capacity.

Refill Station

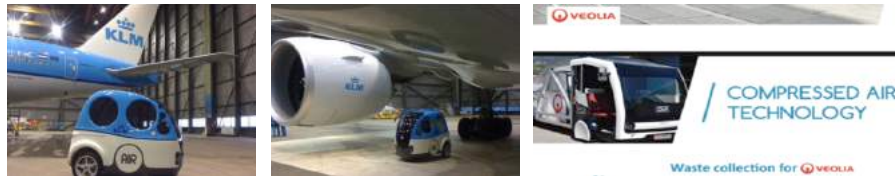
The MDI small refill station units are intended to be located in most accessible and convenient points. It is intended to have a network of refill stations. Combined with the other refilling methods and dual energy mode range and access focus on ease.



The developmental filling station at MDI, and the AFG team reviewing the time taken.

Tata Vehicle, Veolia, & KLM Vehicles

Tata Motors have acquired the licence rights for all MDI products for India, and have worked closely with MDI to develop a vehicle using MDI technology suitable for India. As mentioned MDI has worked in conjunction with Veolia to develop and produce the AirBom. KLM has been another party developing the potential for MDI products. These examples demonstrate MDI's ability and enthusiasm to work with third parties to develop product lines using the technology. This has relevance for the future below.



MDI in India



MDI has worked with partners/customers TATA Motors, Veolia, and KLM Airlines to both develop MDI products and develop them tailored to the partners. Veolia now has a road certified MDI technology waste vehicle, and Tata have acquired rights to all MDI technology for India, and have indicated a launch date of 2020 in India.

Future

MDI has commenced designs for future products ranging from buses to boats to forklifts, to Tuk Tuks, and even streetlights. In many cases they will seek a formidable product line joint venture partner – an opportunity of interest to AFG.



MDI design team have a range of active design development in process.

6. Manufacture

- DISTRIBUTED FACTORIES

Manufacturing via clean decentralised factories, which MDI enables, is very beneficial whether from a global industry polluting footprint or a regional benefit perspective. The decentralisation enables 80% of the vehicle being made on site, and the remaining 20% still benefiting from coordinated global supply. The production uses state of the art machinery, for example the design and building of moulds which MDI then provide globally to the factories.

Chassis workshop



Assembly tooling – Gluing gauges

Bodyworks- and assembly workshop



Moulding line (MDI patent) – Production moulds – Injection tooling – Foaming moulds
Foaming tooling – Laser cutting – 5 axis digital trimming – Template

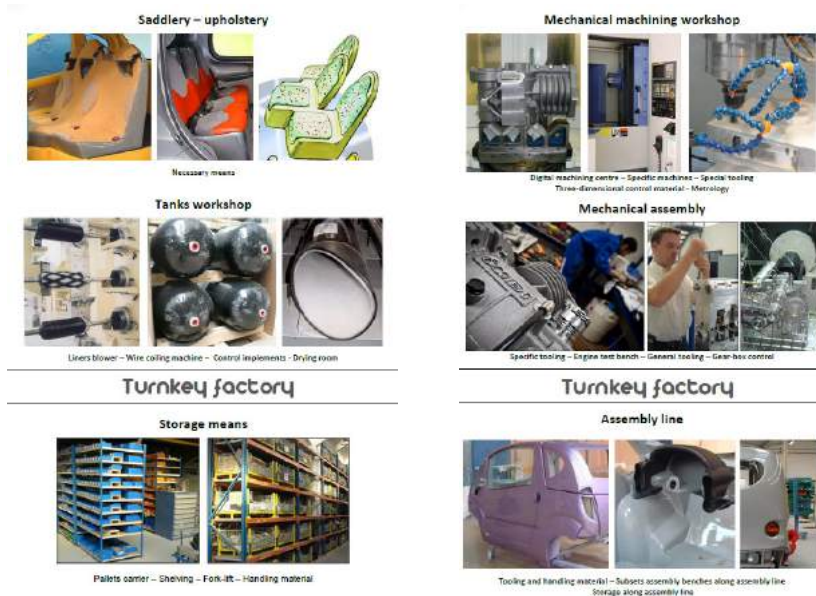
Turnkey factory

Painting line

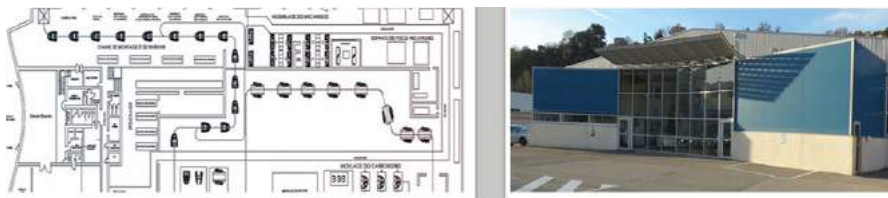


Preparation – Painting cabin – Painting robot – Drying room

MDI decentralised small factories are turnkey, meaning construction of a complete layout, process, equipment, and operating procedures, documents, and working conditions.



MDI distributed factories require just 4,500 square metres with land requirement 15,000 square metres. The maximum production per annum on one 8-hour daily shift is approximately 5,300 for vehicles and 15,000 for energy units, the latter yet to be confirmed. The factories can be run on a modular basis with a low break-even production volume of 400-500 vehicles as example. Employment based on production capacity is 36 for 1,000 vehicles per annum (single shift), 56 for 2,000 (same capacity, double shift), and 81 for 5,300 (large capacity, single shift). Factory construction and operation training and tools are provided turnkey by MDI and operated by the regional entity.



Factories are not costly relative to traditional manufacturing (indicative \$10M to \$20M depending on capacity), and are potentially very profitable on meeting production and sales capacity targets, providing good investment return. This is due to the nature of factory operations and the high margin on sales. By providing employment and enabling local supply of services, local manufacture becomes both politically and economically attractive.



Qualification: Above financials were results of early modelling and should not influence interest in the business. Interested parties can be taken through fully updated financials and factory operations. Whilst modelling confirmed high net profit margins, these depend entirely on the assumptions and inclusions, for example channel distributions.

The vehicles will be 80% manufactured in local factories employing local labour with a MDI global central purchasing office for the supplies of the remaining 20%. In a short and fast decision-making chain, customers can tailor their order according to countries' circumstances (climate or temperatures) and people preferences (colours, modes of use). The local manufacturer manages the supply of resources and deliveries to customers.



Customers can order and customise their cars in the factory showroom



And even participate in a tour.

Regional partners

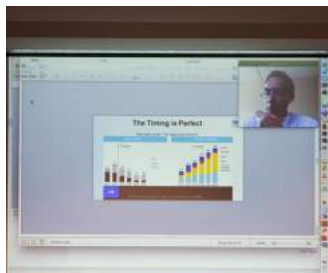
Governments will benefit from local manufacture and the solutions provided locally. Other beneficiaries include local industry, companies with an involvement or vested interest, customers, and purely financial investors or stakeholders. Generated wealth can remain in the producing country, with a locally based workforce sharing via income.

The enabling of distributed manufacture has many advantages in addition to a cleaner environment and cost economics. Four of those benefits are below:

- **Political & Economic:** Regions can control their own energy and transport destiny, with further export potential within our licence area.
- **Employment & licensing:** Local employment and suppliers, whilst still being able to access MDI's global mass purchasing power.
- **Community:** Technology benefits including better energy coordination, cheaper clean transport, micro grids, and less external dependencies.
- **Funding & financial:** Funding of factories can be local within a region or external to it. Funding is hugely cheaper than legacy manufacture.



Team and some supporter presenting regional benefits in New Zealand, with CEO on teleconference from Australia presenting timing and benefits relating to the industries.



The then President of Tata Group Ratan Tata himself initiated and remained a strong supporter of the Tata motors securing the licencing of all MDI technology and products for India. Tata has worked closely with MDI in support of adapting the capability and benefits for the Indian people.

AFG feels very comfortable to be in that company with our Australasian licence rights for transport & energy.






MDI Official
TATA Motors et MDI.

7. Commercialisation

- AUSTRALASIA & GLOBAL

Whilst the focus of this IM has been the industry and MDI technology and products, MDI do not themselves commercialise. AFL does this under regional and product licences and exclusivity. This journey commences with the regional Australasia and current products, through to new MDI products and further regions or countries in conjunction with MDI.

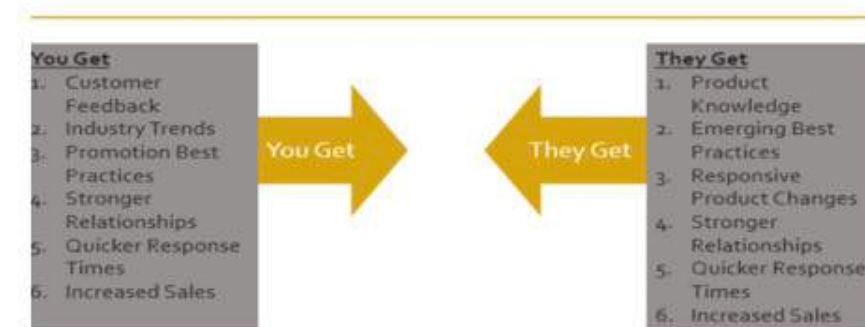
The AFG commercialising structure includes the following three companies, incubated by the main shareholder Air Future Limited:

- Transport: AVL - Air Volution 
- Energy: ATE - Air to Energy 
- International: AFI - Air Future International 

The purpose of this threefold operating structure is that energy and transport are separate industries and international is a separate focus. AFG recognises that parties, whether funders or sponsors or customers, may have interests either into the separate areas or overlapping, and caters to both.

The modus operandi of AFG is not to build a heavily expensive highly resourced organisation but to function largely through relationships, similar to wholesaling and joint venture partnerships or alliances. Such considerations include regional factory joint venture, sales and market channels and distribution, and customer tailoring and services, including consumer finance and insurance.

A SUCCESSFUL CHANNEL PARTNERSHIP



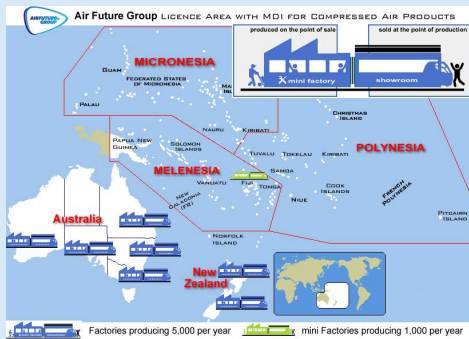
AFG operates in partnerships with distributors, channels, alliances, governments, investors, and customers. In all cases AFG and MDI will maintain responsibility and influence via equity or shareholder agreements and licencing.

Establishing manufacturing

Regional factories, at the heart of the business alongside sales, are separately incorporated for the following reasons:

- Each requires a separate licence relating to its region and product.
- Each has an interest specific in its own region.
- Each factory's upside, risks, and operations are quarantined.
- Factory's productivity can be individually customised via their modularity.
- The rolls of AFG and MDI assure uniformity of standards.

Factory licences fall under AFG's Australasian region and product licence rights and exclusivity. Currently AFG has initially acquired rights for licences for a renewable period of 20 years, specifically for a number of manufacturing plants relating to the AirPod and AirOne/AirCity vehicles and the AirWall and AirPower generator. MDI will not be providing product directly, and has a current expression of interest exceeding 50K cars – a market we will seek to assist continually servicing.



AFG seeks to develop numerous factories spanning both vehicles and energy storage. Initial factories will have broader region and export capability within our licence area to generate early viability and break even. That market includes MDI's own expressions of interest customers. Factories can readily produce right hand or left hand vehicles.

AFG also seeks to develop global markets in conjunction with MDI. International local country licences can be addressed in accordance with the MDI global business model where countries don't have their own exclusive licences, and we can seek to establish it.



South East Asia is of particular interest to AFG based on its proximity and markets.

AFG Commercialisation Projects

Achieving AFG objectives and milestones for Australasia and more globally is a stepped process, with many building blocks. Focused projects are process adopted to establish and achieve progressive milestones. These are of a short-term nature that commence in the current year and are updated and reviewed every 6 months for the IM and Business Plan. There are five project areas and a project area may be replicated across different regions, or products, or markets.

PROJECTS	SUB PROJECT	SUB TASKS	2019										2020	2021
			MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC		
1. Investment - The business	1.1 Resources	Team Assistants Organisation	Working capital for resources											
	1.2 Corporate	Financials Structure MDI Relation	Working capital for resources											
2. Regions - Support	2.1 Zones	AUS & NZ Pacific Islands Global countries	Zones & regions relationships & support											
	2.2 Support	Joint Venture Channels Alliances	Zones & regions alliances & channels											
3. Markets - Distribution	3.1 Channels	AirPod standard AirPod commercial AirWall/AirPower					Individual markets' distribution & channels							
	3.2 Products	AirPod demos AirFill stations AirWall pilots					Individual markets' product pilots & demos							
4. Production - Factories	4.1 Manufacture	Establish factory Construct factory Recruitment & HR							Regional factory funding, construction & recruitment					
	4.2 Customers	Production Sales & delivery Services & support											Ongoing sales & production	
5. Growth - Development	5.1 Regions	MDI licensing JV structures Showcases					Expansion into new licence regions & countries in conjunction with MDI					Ongoing sales & production		
	5.2 Products	New products JV structures Advanced investment							New product MDI partner facilitations & participation					Ongoing sales & production

AFG Business Plan details the projects, their resources, and procedures.

MDI Commercialisation products



AFG and MDI are obviously in close dependency. MDI's own resources, their team, partners, licences, agreements, and critically product rollout together affect our projects and commercialisation rollout. For our partners this is a constantly updated status.

The current status is outlined below in very summary and indicative form, and clearly would be fundamental to any AFG partnership and alliance discussions.

MDI & AFG Status

Consideration	MDI Perspective	AFG Perspective
AirPod 2.0	Ready to manufacture	Seek demonstrations
AirPod 2.0 Commercial	Ready to manufacture	No requirement
AirOne/AirCity	Development est. 12 mths	No requirement
AirBom	Manufacturing for Veolia	N/A currently
AirWall	Finalising manufacture	Seek pilots
AirPower	Ready to manufacture	No requirement
Air Refill	Finalising manufacture	No requirement
Turnkey Factory	Ready to install	Seek partners
Australasian Region	Exclusive to AFG	Seek markets & zones
Global Markets	MDI seek licensees	Seek MDI coordination
Investment	Readying for next stage	Seek investors
Resources	Readying for next stage	Seek alliances & channels
R&D	Ongoing products	N/A
Industrialisation	MDI progressing partners	N/A
Commercialisation	N/A	Projects lead to roll out

The content of this IM seeks to demonstrate from a high level perspective the extent of the need for industry solutions in both transport and energy and the scope of MDI technology and products to contribute to those solutions. MDI have progressed enormously in the research and the development of its offerings and their industrialisation. But MDI do not commercialise, and commercialisation is at a very early stage. AFG have certain exclusive rights to commercialisation and now seek to implement that initially for Australasia but with broader global opportunity.

As such MDI and AFG are in terminology small businesses, and AFG currently a micro business. The opportunities are huge, but the next step is to build relationships and generate support and funding for the road ahead. This IM is not the tool to engage in potential relationships, but only to introduce the opportunity and AFG's desire. To progress such relationships parties will seek to know more.

With that in mind AFG has taken a number of preparatory steps. Firstly they have had their companies audited, although there is not much to audit. Secondly they have prepared more detailed information which is referred to in the contents as Information Packs, for approved parties with whom we explore further. AFG does not have a relevant operating history yet, its sole focus being on MDI solutions.

So any discussions that AFG enters into will be very open minded and joint mutual interest and opportunity based. We welcome those discussions.

APPENDIX

- TEAM



The AFG / MDI partnership executive meeting at the MDI French factory in 2016.



Some of the MDI team of engineers and design specialists in the museum section showing the development of the engines over the years in the background..

The resources of the AFG business include their own smaller foundation team, outsourced support, the MDI team, and future recruitment, partners and alliances. The following is the key small team across the Air Future Group, and the senior MDI executives as our partners.



Russell Fitts: Executive Chairman

Russell has been executive chairman since commencement. He has built up a global network of contacts and fostered a close personal and business relationship with MDI. He has demonstrated a longstanding commitment to Air Future's shareholders and the protection of key assets. He has extensive director, business & corporate governance experience. He previously farmed and fulfilled former executive roles in the Federated Farmers, is an Associate member of the NZ Institute of Valuers and Senior member of the NZ Property Institute. He provided services to the Earthquake Commission from 2011 to 2015.



Mick Kain: Executive Director

Mick has had an extensive career as a director in farming, investing, and industrial property. He has been an executive director since the foundation of the company. His very broad experience and contacts are invaluable together with the critical function of shareholder relations and promotion.



John Mennega: Director, Chief Executive Officer.

John has an MBA, BE (Elect), Grad Dip Eng (Industrial), and Grad Dip Applied Finance & Investment. His background is investment banking and management with experience in commercialising early stage. John has been head of Funds Management Services for AMP Capital (Australia), head of corporate services for Colonial Bank (Australia) and business development head for Platinum Asset Management (Australia).



Francis (Pancho) DeNeefe: Non Executive Director.

Pancho combines a sharp scientific mind with the business acumen he acquired over twenty years in industry and marketing. Pancho has a physics background, and headed highway safety developments in 1982 R&D for the family business DeNeefe Science. He took a keen interest in the transport side and became one of its most enthusiastic private investors. Pancho's skills in business have allowed some of the ongoing funds required for milestones to be achieved, along with the knowledge of appointment of early professionals.



Paul Gurr: Foundation Executive and Technical Officer.

Paul has an MBA, BE (Mech) Hons. He is an engineering and operations specialist, having worked in the large organisations through to private consulting. He has special skills in manufacture, in quality control, and in training and safety controls. Paul provides services on a contractual basis.



Martin Richardson: Group Financial controller and Company Secretary

Martin holds a Bachelor of Accounting Science (Hons) and a Diploma in Income Tax law. After 3 years National Service in the South African Navy, he worked for Peat Marwick & Mitchell (now KPMG) he has experience in forensic and investigative accounting. The family emigrated from South Africa in 2003 to Christchurch. He worked for Pyne Gould Guinness, General Cable, Synlait, Tyco before being appointed as Group Financial Controller of Windflow for 9 years. He joined Air Future in 2018 to help them build an eco-future.



Margaret Copplestone

Margaret provides very valued support specialising in websites, documentation, and communications, as well as Newsletter mail outs and documentation required from time to time. She is a very keen supporter of both the technology and the need to overcome the growing global pollution. She works across both the energy and transport side.

MDI KEY DIRECTORS



Dr Cyril Nègre. Cyril is the President of MDI and Director of MDI R & D. He holds a PhD in Mechanical Engineering, and began his career in Bugatti Automobile car design, joining his family's company MDI in 1993. Cyril is AFG key contact within MDI and organises and coordinates the support of their team. AFG's Director's personal relationship with MDI goes back to 1998, with both Cyril's father Guy, and then closely with Cyril.



Annic Nègre. Annic is a Director and the wife of the MDI founder, the late Guy Nègre. Annic has been an essential influence in MDI since its inception, and is a great supporter of Australasia. She and her late husband toured Australasia in August 2006 presenting the earlier stages of the technology and their enthusiasm for the region. They met with numerous political personnel including regional Lord Mayors, all of whom showed great enthusiasm.



Monique Bertho. Monique is Chief General Manager MDI Group, providing much support and direction for MDI's external contacts. See at right addressing enthusiastic attendees at an exhibition attended by MDI and below presenting.





Monique Bertho attends and presents in front of the European Parliament in Luxembourg the MDI technology. MDI is building a factory in Luxembourg for a Benelux consortium.



Legal disclaimer

This Information Memorandum is for the purpose of a first introduction to the Air Future Group (AFG) business. MDI has not been involved in producing this document. It is not an investment document, and should not form the basis for any decisions relating to the business. Neither AFG nor any business or individual associated with AFG assumes any responsibility for any actions resulting in any individual or entity seeking damages. There are no guarantees as to the accuracy of any information contained herein, although there have been best endeavours to be accurate. However the MDI progress plus our understanding of their information and development might not be accurate, and is certainly fluid for both parties. To progress beyond this document the reader should apply to AFG in relation to further information available or able to be prepared. No prior actions are supported.

Contacts and references

WEBSITES

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Air Volution Limited: www.air-volution.com.au

Air to Energy Pty Ltd: www.airtoenergy.com.au

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Who can join The Air Community?

-----See overleaf-----

www.theaircommunity.com

Coming Soon In 2019

Join the tens of thousands already registered across MDI & AFG ready for action

Our social media will soon be reaching out to all communities





To clean the planet in the short to medium term we see a plethora of competitive brands, but critically we see far less actual competing technologies. In general today's electric vehicles are simply too expensive, too heavy, too complex to manufacture, won't travel far enough on a battery, are too cumbersome to recharge, lose their efficiencies in hybrid design, and still generate a big manufacturing carbon footprint even if they run clean. And the shift to renewable energy is burdened by intermittency with storage just too expensive.



With MDI technology and products and AFG commercialisation let's make it happen for Australasia. For everyone to enjoy and benefit, not just those who can afford it. Make Australasia a showcase. MDI technology can help achieve it.

Not just the well off who can afford



Affordable MDI vehicles

But everyone.



Close to two-thirds of Africa's population—largely rural and poor—don't have electricity.

Affordable MDI energy storage

Commercialised by Air Future Group (AFG)

