



Press Release, 6 February 2007

Affordable, competitive & environmentally sound electricity and transport solutions for the Post-Oil Era

Tata Motors agreement with MDI strengthens IndraNet – MDI joint venture for Australasian markets and potential exports of combined IT-MDI distributed electrical power generation technology package

Tata Motors Ltd, India's leading automotive R&D company, and Moteur Development International s.a. (MDI) of Luxemburg and France have signed an historical agreement for the application in India of MDI's path-breaking technology for compressed air engines.

"The agreement between Tata Motors and MDI for India fully corroborates the value and importance of the revolutionary MDI technology and its potential to provide an extremely competitive way out of our present dependence on oil and the Climate Change conundrum," said Dr Louis Arnoux, Managing Director of the IndraNet Group of companies.

MDI is a Joint Venture partner of IndraNet Technologies Ltd (ITL) of New Zealand. While Tata Motors is planning to develop the Indian market for the MDI compressed air dual energy engine, MDI and ITL are pressing ahead with their plans to set up a network of franchised manufacturing plants throughout Australasia (Australia, New Zealand and the Pacific Islands) to produce and market the entire IT MDI product range, including low cost, environmentally clean, distributed electrical power generation, vehicles, boats and other industrial applications of their technology portfolio.

"We are currently in talks with a number of investing parties for the first five plants," he said; *"two in Australia, two in new Zealand and one in the Fiji Islands. The IT MDI business model's focus on point-of-sale plants is estimated to achieve around 75% lower capital expenditure compared with mainstream manufacturing costs."*

"In its current version the MDI vehicles are capable of around 2 litres of gasoline or equivalent biofuel per 100km and within three years we expect to be around one litre of solar derived biofuel per 100km," said Guy Nègre, Managing Director of MDI. *"We are talking about a normal car with normal driving and normal acceleration,"* he said *"but lean, green and clean. As for the power generators we estimate that the customer premises iPower units will be able to deliver environmentally sound electricity at around 25% less than current retail prices."*

Dr Arnoux said compressed air was the energy storage and energy carrier medium in the MDI engines. *"In a normal car you burn fuel inside the engine to make a compressed gas that pushes the pistons. To use compressed air inside an engine is a lot cleaner,"* he said. *"Instead of burning a fuel inside the engine you burn it outside and use it to heat up compressed air. If you heat a gas at constant pressure it expands and you produce more of the compressed gas your require to run the engine. If you do that outside the engine you can control the burning of the fuel and the heating of the air so that you burn without any pollution. You can burn a variety of fuels and you can shift from one fuel to another because the combustor is outside the engine."*

Because of the features outlined by Dr Arnoux, the MDI engine not only uses less fuel, but can also shift from oil-based fuels to renewables like ethanol from sugar cane and other biofuels.

Dr Arnoux said net energy available per capita per year globally is declining fast and the annual average price of fuels will continue to rise. *"People now know all about Peak Oil and Climate Change but they want solutions that do not involve abandoning their cars, boats, air conditioning, fridges, microwave, cell-phones, the Internet and all the other conveniences we've all got used to,"* he said. *"With the IT MDI-Energy package there is finally a viable and very affordable 'Plan B' that enables a smooth transition out of oil, natural gas and coal."*

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Background

Summary

Tata Motors is the automotive arm of the Tata Group of India (www.tata.com).

MDI is the developer of the revolutionary MDI thermodynamic cycle, the MDI compressed air and MDI dual energy families of engines and their automotive and electrical power generation applications.

ITL is the developer of the IndraNet Network of Networks advanced broadband fractal mesh communication technology (generically called IndraNet FraMe Networks, FraMe being an acronym for Fractal Mesh, and pronounced “*frame*”) with broad applications in the telecommunications, energy and transport sectors.

Tata Group – From the Tata Group Websites (www.tata.com) and Public Records

The Tata Group comprises 96 operating companies in seven business sectors: information systems and communications; engineering; materials; services; energy; consumer products; and chemicals. The Group was founded by Jamsetji Tata in the mid 19th century, a period when India had just set out on the road to gaining independence from British rule. Consequently, Jamsetji Tata and those who followed him aligned business opportunities with the objective of nation building. This approach remains enshrined in the Group's ethos to this day.

The Tata Group is one of India's largest and most respected business conglomerates, with revenues in 2005-06 of US\$21.9 billion (Rs 967,229 million), the equivalent of about 2.8 per cent of the country's GDP, and a market capitalisation of US\$52 billion. Tata companies together employ some 246,000 people. The Group's 28 publicly listed enterprises — among them stand out names such as Tata Steel, Tata Consultancy Services, Tata Motors, and Tata Tea — have a combined market capitalisation that is the highest among Indian business houses in the private sector, and a shareholder base of over 2 million. The Tata Group has operations in more than 54 countries across six continents, and its companies export products and services to 120 nations.

Tata Motors Limited is India's largest automobile company, with revenues of US\$ 5.5 billion in 2005-06. It is the leader in commercial vehicles in each segment, and the second largest in the passenger vehicles market with winning products in the compact, midsize car and utility vehicle segments. The company is the world's fifth largest medium and heavy commercial vehicle manufacturer.

Tata Motors has been in the public record for its commitment to produce a “*one lakh car*” (a lakh is 100,000 rupees, i.e. about €1,700 or AU\$2,900) enabling millions of Indians to move on from their family scooters to affordable family runabouts.

IndraNet and IT MDI – Energy Pty Ltd

IndraNet's business focus is Advanced Networked Transport, of:

- Data** via FraMe broadband;
- Energy** through Intelligent Power Grid network enabled by FraMes and distributed power generation and energy storage, MDI-based; and of
- Goods and people** through networked advanced zero emission MDI vehicles.

IT MDI – *Energy* Pty Ltd (IT MDI – *Energy*, ACN 119 964 000) is the operational arm of IT MDI Pty Ltd, the joint venture created by IT-Mondial Pty Ltd (IT-Mondial, ACN 109 947 462) and Moteur Development International sa (MDI) of France to develop commercial synergies between their respective technologies, the advanced broadband communication infrastructure called IndraNet FraMe networks, and the MDI technology for power generation and transport.

IT-Mondial is the global commercialisation arm of IndraNet Technologies Ltd of New Zealand (ITL, ABN 097 079 064). It is 100% owned by ITL.

The objectives of IT MDI – *Energy* are to market advanced, low cost, zero pollution power supply, mobility and transport solutions that are not presently available and cannot be delivered cost-effectively by legacy systems, thereby opening up new, large, highly competitive and rewarding markets in a totally environmentally sound fashion.

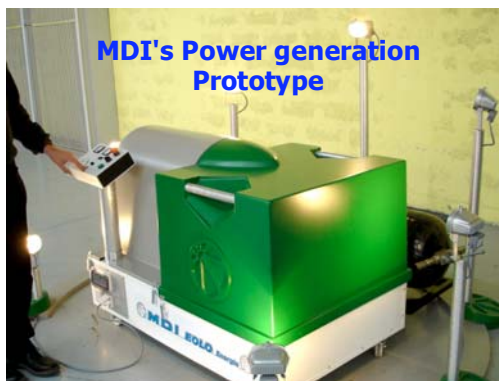
Based on the ITL and MDI marketing models, *IT MDI – Energy* plans to **Build, Own, Operate, and Transfer (BOOT)** a revolutionary network of licensed/franchised point-of-sale manufacturing plants and operating energy and transport networks throughout Australasia.

The initial regional focus is **Australasia (Australia and New Zealand) and the Pacific Islands**. This initial development is expected to lead to **substantial further and highly rewarding opportunities in export-oriented ventures focusing on new energy solutions globally**.

The IT MDI Products

IT MDI – *Energy* is organising in Australasia the manufacture and sales, under exclusive licences, of a range of revolutionary energy and transport products and services that **remove the present dependence on oil, natural gas, coal and nuclear at extremely competitive prices and with zero pollution:**

❑ Revolutionary Electricity Generation, Supply and Distribution:



- ❑ Low cost, point-of-use cogeneration units ranging in capacity from 6 kW to over 800 kW for environmentally sound, residential to industrial, distributed power generation, based on the MDI revolutionary engine and networked with IndraNet FraMe Networks.
- ❑ The units are being designed to be used either stand-alone or integrated in the electricity grid. They enable **point-of-use power supply, hot water production, water chilling, and air conditioning**.
- ❑ With the present version, the estimated electricity prices are expected to be 25% lower than current retail prices.

❑ Automotive Revolution:



- ❑ A range of **low cost, high efficiency, zero emission vehicles**, for private transport (including the small OneCAT 3-seater urban model, the 3-seater MiniCAT, the 6-seater CityCAT – CAT stands for Compressed Air Transport), utility services (trucks, vans, etc.), public transport (minibuses and large buses), farm machinery, marine applications, and light aircraft applications.
- ❑ Being designed to have driving and safety performances similar or superior to existing vehicles in their respective classes
- ❑ Pre-release specifications for the initial MDI 6-seater series to be commercialised 1 year post manufacturing plant launch are **1.5 litres of gasoline equivalent per 100km, driving range of about 4,000km per fill, top speed over 160km/h**,

- Retail sale prices are projected to be substantially below current market prices for vehicles of similar size and performances, and projected running costs one quarter of current running costs.

In IT MDI – *Energy*'s assessment, the integration of the MDI and IndraNet technologies opens the way to a smooth and extremely affordable transition out of the world's present almost total dependence on fossil fuels for transport and electricity generation; thus also addressing their related economic, health and environmental challenges.



Technology Background

Over the last 12 years, MDI has developed a new **thermodynamic cycle** enabling substantial improvements in energy efficiency. This is combined with impressive cost reductions for manufacture, operation and maintenance of low cost, zero emission vehicles and environmentally sound distributed power generation.

The present MDI 41 and 42 series dual energy power blocks now being readied for commercial release integrate an external heat source with compressed air as the energy carrier and storage medium.



Air is stored at 300 bar in safe and stable composite cylinders and delivered at 30 bar or less to a proprietary compressed air engine through an external combustor that provides a complementary or alternative primary energy source. A wide variety of fuels can be used in the combustor for automotive or stationary applications. Suitable automotive fuels include fossil fuels such as gasoline, diesel, compressed natural gas (CNG) or LPG; and renewable fuels such as ethanol, coconut oil, rapeseed oil, tallow processed into biodiesel, etc. For stationary applications those same fuels can be used and/or supplemented with solar power, gasified biomass and other renewable resources.

Since the combustion is external to the engine, it can be easily controlled and run in a base-load mode that generates nil or extremely low levels of pollution (such as NOx pollutants). **When renewable fuels are used, there are no net greenhouse gas emissions.**

The compressed air engine block (see above picture on the right) is used in a number of ways, as a compressed air engine to drive a vehicle and/or to power an electrical generator, or in reverse mode as an air compressor to recharge the compressed air storage. A series of heat exchangers enable the recycling of waste heat for improved efficiency and air conditioning.

Beside the inherent environmental advantages, the main benefits of the new thermodynamic cycle and the specifics of the engine design are substantial gains in efficiency that translate into considerable capital, operating and maintenance cost improvements.

Contact:

As a matter of company policy IT-Mondial grants interviews only to media persons it has suitably qualified. For additional information please visit the main IndraNet Website, www.indranet-technologies.com or contact Dr Louis Arnoux, by email at louis@indranet.co.nz.