

AUSTRALIAN SECURITIES EXCHANGE ANNOUNCEMENT  
11<sup>th</sup> October 2007

## **Indian Hythane® and Hydrogen Projects Update**

### **HIGHLIGHTS**

- **Indian Government announces a target of having all Natural Gas powered vehicles, estimated at 1 million vehicles or 20% of the whole Indian vehicle market, running on Hythane® by 2020.**
- **Highly encouraging progress on conversion of first Indian Natural Gas Bus engine to Hythane® operation.**
- **Conversion of first Indian manufactured 500kva diesel generator to a dual fuel operation (diesel and Hythane®) has commenced in Colorado.**
- **Costing and preparations for production in India of first HyRadix hydrogen reformer nearing completion.**
- **Demonstration projects for both Hythane® fuelled buses and Hythane® dual fuel generator planned for second quarter 2008, both of which are planned to progress directly into commercial operations.**
- **Negotiations underway for conversion of a second Indian Natural Gas bus engine and a mini-bus engine to Hythane® operation.**
- **Drafting of proposed Hythane® safety standards and regulations for India nearing completion.**
- **Marketing in India of HyRadix hydrogen reformers for the industrial gas market commences and negotiation for a strategic alliance underway.**
- **Indian subsidiary company established and first staff engaged to manage Indian operations.**

### **DETAILS**

1. The Indian Government (the Ministry of New and Renewable Energy), as part of its hydrogen roadmap, recently announced a target of having all Natural Gas powered vehicles, estimated at 1 million vehicles or 20% of the whole Indian vehicle market in 2020, running on a mixture of hydrogen and Natural Gas by 2020.

Eden has been very actively promoting and marketing Hythane®, a hydrogen enriched premium blend of Natural Gas, in India for the past 2 years and has already made

significant progress. Agreements have been concluded with Ashok Leyland, a major engine manufacturer, Gujarat State Petroleum, a large state-owned Natural Gas producer, distributor and retailer, and Larsen & Toubro, the world ranked, largest engineering group in India. Additionally negotiations are well advanced with many other relevant bodies and companies. Coupled with the Indian Government's support of Hythane®, the stage is set for major progress over the next few years.

Hythane® is a premium blend of 93% Natural Gas and 7% hydrogen. It increases engine efficiency by up to 10% and reduces emissions of oxides of nitrogen (NOx) and carbon monoxide (CO) by up to 50% compared with pure Natural Gas. NOx is the primary cause of photochemical smog and is a major contributor to lung cancer and respiratory ailments. CO is a highly poisonous gas.

The Indian Government's policy aims to establish a transitional strategy on the path to a full hydrogen economy by providing an immediate use for the new hydrogen infrastructure that will be developed. The policy will also achieve both a very efficient use of India's Natural Gas resources and ultra-low emissions, which will help minimise the huge public health issues that will inevitably follow the increase in harmful emissions from the rapidly expanding Indian motor vehicle population.

At present, there are more than 200,000 vehicles in India operating on Natural Gas. This will rapidly increase over the next 2-3 years as the Natural Gas pipeline grid rolls out across the country and large domestic gas fields come into production. Presently, the entire bus, taxi and three-wheel auto-rickshaw fleet in Delhi (estimated at more than 10,000 buses, 40,000 taxis, and 100,000 auto rickshaws) operates on Natural Gas. The same applies in a small number of other Indian cities where pipeline Natural Gas is already available.

The Gas Authority of India recently announced plans to rollout pipeline Natural Gas to more than 230 cities over the next 5 years. This programme, which is mirrored by similar private sector initiatives, is well underway and many cities that have not previously had pipeline Natural Gas will receive it over the next few years. At the same time, Natural Gas supply is projected to increase 500% from 5 million tonnes per year to 25 million tonnes per year.

Further, the Indian Supreme Court has continued its policy of promoting reduced urban emissions and has mandated that more than 20 cities must convert their entire bus fleets to Natural Gas operation.

The combination of all these factors is very likely to result over the next five years in the emergence of a huge market for Hythane® in India, in which Eden will be a major participant.

2. The first Ashok Leyland Natural Gas bus engine conversion to Hythane®, being undertaken in Colorado at Hythane Company's plant, is nearing completion. Highly encouraging results with ultra low emissions have been achieved. Further work on both this engine and at least one further Natural Gas bus engine is planned. Once completed, the engines will be returned to India for official certification and use in the Hythane® bus demonstration project planned for the second quarter of 2008.

Ashok Leyland is the largest Indian bus manufacturer, supplying a very high percentage of all government-owned bus fleets. Out of its total annual vehicle output of approximately 80,000, approximately 11,000-14,000 are buses. It recently announced plans to increase its annual output over the next four years to 180,000 vehicles. The close relationship with this major Indian bus manufacturer is a key part of Eden's Indian Hythane® marketing strategy.

3. Conversion of a leading Indian manufactured 500kva diesel generator to a dual fuel operation (diesel and Hythane®) has commenced in Colorado. The generator was delivered from India, and the factory-designed Natural Gas dual fuel kit is due to be shipped to the US this week.

With the current diesel/ Natural Gas dual fuel kit, the best mixture that can reliably be achieved is 40% diesel and 60% Natural Gas. Hydrogen, acts as a very strong combustion stimulant, and Eden's target is to recalibrate the engine to operate on a mixture of at least 80% Hythane® and no more than 20% diesel.

Natural Gas currently sells in India at approximately 60% of the price of diesel fuel. Consequently, significant fuel cost savings are projected from conversion to a Hythane®/diesel dual fuel mixture. Further, with Indian domestic Natural Gas supply projected to substantially increase over the next 3 years, prices of gas projected to fall, and world oil prices anticipated to increase, this price differential, and hence the savings, are expected to substantially increase.

There are thousands of privately owned diesel powered generators in India which are currently used either for back-up power supply or for base-load power supply, and as Natural Gas becomes more widely available, a good market for Hythane® dual fuel is projected to emerge, particularly for larger units generating base-load power.

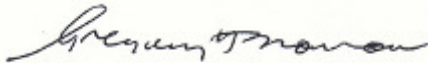
4. Eden will produce the necessary hydrogen to create the Hythane® using the HyRadix range of hydrogen reformers. HyRadix, a wholly owned subsidiary of Eden, proposes to manufacture these units in India, at very competitive prices whilst retaining world-class quality.

The hydrogen will be produced on-site using skid mounted reformers operating on either LPG or Natural Gas. It will then be blended with Natural Gas to create the appropriate mixture. Costing and preparations for production in India of the first HyRadix hydrogen reformer have been underway for the past several months and are nearing completion. Indian production of the first hydrogen reformer is planned to commence within the next month. This unit will be used to produce Hythane® for the Indian bus demonstration project in the second quarter of 2008.

5. Two demonstration projects, one for Hythane® fuelled buses and the other for Hythane®/diesel dual fuelled generators, are planned for second quarter 2008. Both demonstration projects are planned to progress directly into commercial operations. The bus demonstration will initially involve two buses, and then expand to 50 buses. The hydrogen reformer will be capable of providing Hythane® for the 50 buses and enable a full commercial evaluation of the Hythane® bus project. Both demonstrations are planned to then continue on an ongoing commercial basis. The cost of the Hythane® fuel will be a very important factor, particularly in the cost sensitive vehicle market and every effort is being made to achieve a low-cost supply of hydrogen.
6. Negotiations with another Indian vehicle manufacturer for conversion to Hythane® operation of a mini-bus engine, followed by perhaps two other sized engines are also underway. These engines would expand Eden's coverage of the Indian Hythane® market to a far broader vehicle market.
7. For the past six months as part of a joint initiative with Indian Oil Company, Eden has been preparing proposed Hythane® safety standards and regulations for India. This is nearing completion. Eden commissioned independent testing to be carried out in USA to support the proposed standards and regulations and the results confirmed that Hythane® should be treated as Natural Gas for the purpose of all electrical and storage regulations This will form the basis of the draft regulations that will be submitted to the Indian regulatory authorities.

8. Marketing in India of the HyRadix hydrogen reformers for the industrial gas market has commenced and negotiations with a leading merchant gas company are underway in relation to forming a strategic marketing relationship, which would open up a broad share of the emerging Indian hydrogen industrial gas market. This market includes edible food oil plants, float glass plants, steel plants and semi-conductor manufacturers. HyRadix has reformers in operation in China, Malaysia and US and being installed in Europe.
9. Eden Energy India Private limited, a wholly owned Indian subsidiary, has been established and its office is currently being set up. The first staff have also been engaged, giving Eden a strong base from which it can rapidly expand its operations throughout India to achieve its objectives.

In summary, Eden is making significant progress towards becoming a world leading hydrogen company, establishing Hythane® in India and securing its leading role in the huge emerging Indian Hythane® market, which collectively herald a very exciting period for Eden over the next five years.



Gregory H. Solomon  
*Executive Chairman*

#### ***About Eden Energy Limited***

Eden Energy Ltd is a diversified clean energy company that listed on the Australian Stock Exchange in June 2006. Eden has interests in hydrogen production, storage & transport fuel systems, including the low emission Hythane hydrogen-methane blend, coal seam & abandoned mine methane in the UK, conventional gas in SA, low temperature pyrolysis research into hydrogen production and geothermal energy production.

All these aspects of Eden's business are part of an integrated strategy to become a major global participant in the alternate energy market, particularly focussing on the clean energy transport market, producing hydrogen without any carbon emissions, transporting the hydrogen to markets & providing the engines to power hydrogen-based transport & energy solutions.

For further information please contact Greg Solomon (+61 8 9282 5889) or visit our website ([www.edenenergy.com.au](http://www.edenenergy.com.au)).

