



ACN 109 200 900

ASX Quarterly Report

For the Period Ended 30 September 2015

HIGHLIGHTS

EdenCrete™ /Carbon Nanotubes/ Carbon Nanofibres/ Hydrogen

- A formal presentation was made by Eden to the New Products Evaluation Committee of the Georgia Department of Transport (GDOT) in which both technical and commercial issues associated with the use and performance of EdenCrete™ were addressed.
- Two field trials of EdenCrete™ enriched concrete was undertaken on the Interstate Highway I-20 in Augusta near the border between Georgia and South Carolina.
- Highly encouraging early strength results from the second GDOT field trial of EdenCrete™ on I-20 were achieved, with 28 day strength results from an independent laboratory showing a 26.3% improvement in the compressive strength of the EdenCrete™ enriched concrete over the control.
- Eden secured its first commercial order for EdenCrete™ for assessment for pre-fabricated concrete products for the US retail market.
- Eden and Monash University awarded A\$300,000 Australian Research Council linkage grant for research into use of carbon nanotubes to reduce steel reinforcing in concrete.

OptiBlend™ Dual Fuel

- Eden (India) won a tender to supply to Oil and Natural Gas Corporation Limited (“ONGC”) of India, eight OptiBlend™ dual fuel kits for use on diesel powered generator sets used on drilling rigs it operates in India.
- Eden (India) has also recently participated in an Indian trade mission to Nigeria, where it has secured interest in its OptiBlend™ dual fuel kits for use in various back-up power applications. This interest is currently being pursued in the hope of converting it into contracts to supply dual fuel kits.
- Orders received in the USA during the quarter for 1 unit.
- Following a dramatic slump over the last year due to the drop in oil prices and great slow-down in US shale oil and gas exploration, an increased level of market interest in OptiBlend™ dual fuel systems in both USA and India has started to emerge. It is hoped that this will translate into increased sales in the future quarters.

UK Gas Assets

- Discussions in relation to a possible sale of Eden’s UK gas assets are taking place.

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DETAILS

NANO-CARBON, HYDROGEN and HYTHANE™

Pyrolysis Project (Eden 100%)

CNT Enriched Concrete Projects - USA

Georgia Department of Transport- Application for Approval of EdenCrete™

During the quarter Eden made an application to the Georgia Department of Transport (“GDOT”) for approval of EdenCrete™ 500 for use in GDOT projects.

A formal presentation was made by Eden to the GDOT New Products Evaluation Committee in which both technical and commercial issues associated with the use and performance of EdenCrete™ were addressed. Following the presentation, the New Products Evaluation Committee formally recommended that GDOT classify EdenCrete™ 500 as “Lab Test” and “Field Test”, thereby formally commencing the evaluation process for possible approval for use on GDOT infrastructure projects.

The laboratory tests (which involve trials for up to 56 days), and the field trials (which may involve longer term evaluation of trial sections of concrete) were initiated during the quarter and details are set out below. The timing of the final outcome of the application to GDOT is uncertain.

GDOT – Laboratory Tests and Field Trials

During the quarter two field tests of Eden’s EdenCrete™ enriched concrete was undertaken on the Interstate Highway I-20 in Augusta near the border between Georgia and South Carolina. These field trials involved the laying of concrete enriched with Eden’s EdenCrete™ to replace badly worn sections of the I20 as part of a planned maintenance programme on the I-20 (see Figures 1 and 2).



Figure 1 Second Field Trial of EdenCrete™ being undertaken on the I-20



Figure 2 Second Field Trial of EdenCrete™ being undertaken on the I-20

The longer term performance results from both the EdenCrete™ enriched slabs from the two field trials and the two control slabs will be monitored and assessed by GDOT against the results from various laboratory tests of EdenCrete™ that GDOT is undertaking and the results of testing by an independent GDOT approved testing agency of samples of the EdenCrete™ enriched concrete used in the second field trial.

GDOT – Laboratory Tests

The compressive strength of concrete cylinders made with the same concrete used in the field trials of the EdenCrete™ concrete, continue the same trend as earlier trials by other parties, showing that EdenCrete™ concrete exceeded the compressive strength of the control mixture.

The results, (which have been normalised to adjust for the variations between the various delivered batches in the amount of contained air in the concrete, which impacts its compressive strength) that have been achieved to date are:

- **At 24 Hours - 32.8% improvement**
- **At 3 Days - 32.5% improvement**
- **At 7 Days - 37.1% improvement**
- **At 28 Days - 26.3% improvement**

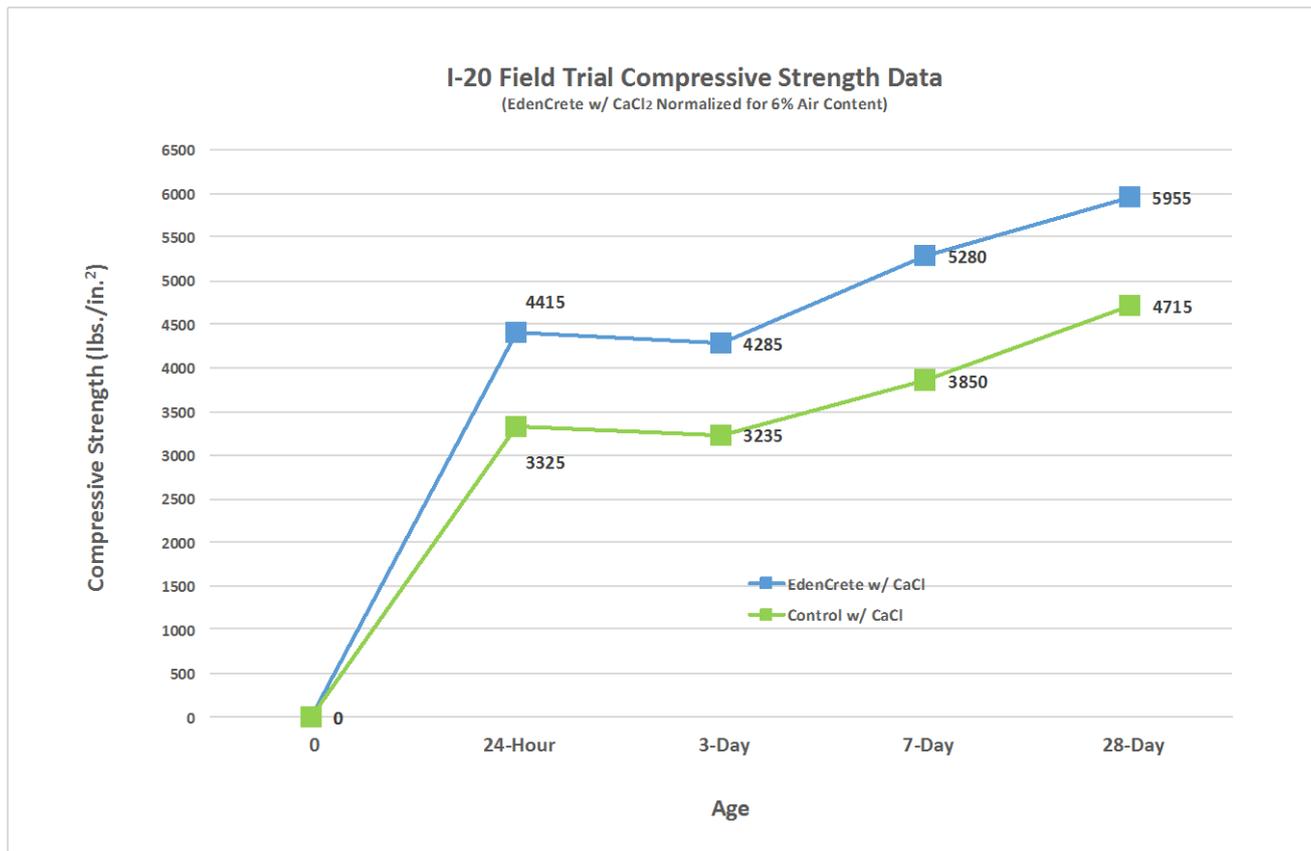
Further tests of the compressive strength at 56 days are to be undertaken in Georgia by the same independent laboratory. Additionally, abrasion testing (ASTM C779), to be conducted in Colorado by another laboratory, but using the same concrete, at 56 days will also take place.

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The independent, GDOT-approved laboratory in Augusta, Georgia conducting the laboratory tests in Georgia, cast the test cylinders at roadside when the second field trial took place. The concrete used in the laboratory tests is the same concrete that was used in the second field trial and included a 24-hour chemical accelerant (as required by GDOT).

Accelerants reduce the time required for the concrete to harden, which is important in enabling GDOT to re-open, for public use, earlier than if the accelerant were not added, the section of highway that is being repaired.

These results are shown on the chart below, and clearly confirm the trend of increased compressive strength achieved by EdenCrete™ over that of the Control mixture without added EdenCrete™.



Separate laboratory tests at the GDOT laboratory, using test cylinders that were also cast at the same time, showed at 28 days, EdenCrete™ to have exceeded the compressive strength of the control mixture by 16.2%.

The earlier compressive strength results obtained by the GDOT laboratory showed an improvement of EdenCrete™ of 40.5% at 24 hours, 25.1% at 3 days, and 26.3% at 7 days, compared with the strengths measured by the independent laboratory which showed increased compressive strengths of 32.8% at 24-hour, and increases of 32.5% at 3 days and 37.1% at 7 days.

The differences between the results from the two separate laboratories are within the range permitted under the ASTM standards for tests conducted at different laboratories using different equipment to test the same concrete mix, with both data sets confirming the trend of the EdenCrete™ concrete significantly outperforming the control mix.

Georgia and US Infrastructure Market

In addition to thousands of miles of concrete roads and highways, Georgia has in excess of 15,000 concrete bridges (ranging from small to large).

If this process in Georgia results in an approval by GDOT of the use of EdenCrete™ in concrete for its infrastructure is obtained, it is considered likely to accelerate the process of obtaining similar approvals by the Departments of Transport in other US states, with Eden's longer term objective being the opening up of the national infrastructure market, which consumes on an annual basis almost 40% of all cement used in the USA.

The size and state of repair of the US Interstate bridge and highway network, and the enormous backlog in maintenance that remains to be carried out is a the huge potential market for EdenCrete™, if it is ultimately approved for use by GDOT and the Departments of Transport in the other states of the US.

First us commercial order for EdenCrete™ for pre-fabricated retail concrete applications

Eden also secured its first, small commercial order from a US company that manufactures and markets on a national basis, pre-fabricated concrete products for the large US retail market. Whilst the order is small and is essentially only for the purpose of enabling the evaluation by this company of the benefits that EdenCrete™ may offer, it represents further encouraging progress by Eden in its efforts to towards establishing a range of commercial markets for EdenCrete™ in the US.

Establishment of Large, Commercial Scale US EdenCrete™ Production Capacity

Ongoing discussions with various interested parties and relevant authorities, initially focusing on Georgia, related to both the possible location and financing in the US of Eden's first proposed large scale EdenCrete™ production facility continued during the quarter. At this stage it appears likely that Georgia will be the State where the planned expansion is to take place and a final decision on the chosen location and method of financing is expected within the next quarter.

Large Scale US Production Scale-Up Design Commenced

A specialist engineering group completed a preliminary scoping study on a reactor capable of producing up to a targeted 250 tonnes of carbon nanotubes (CNT) per annum, which would be sufficient to produce enough EdenCrete™ to supply approximately 1% of the annual US Interstate Highways' concrete demand (based on figures published in 2005 by the US Geological Survey). The anticipated time to design and build this reactor is likely to be between 15-18 months. A further expansion of production capability of CNT up to 1,000 tonnes per annum is also being planned over the following two years. The size of these reactors may change as possible economies of scale and other relevant issues emerge during the design phase of this project.

Short Term US Production Scale-Up Underway

A design and quotation was also received in relation to new production equipment that would enable Eden to increase over the next three-six months the short term CNT production capacity at Eden Innovation's Colorado based facility, with a view to attempting to satisfy the targeted increase in demand for EdenCrete™ until the large scale facility comes on line.

High strength CNT enriched concrete requiring little or even no reinforcing steel

Eden Energy and Monash University awarded A\$300,000 Australian Research Council Linkage Grant for research into use of carbon nanotubes to reduce steel reinforcing in concrete. The award, funded by the Commonwealth of Australia, will provide a total of A\$300,000 over the three year life of the research project.

Since the collaborative ARC grant application was initially lodged, the Principal Researcher named in the application, Dr Frank Collins, who was formerly Associate Professor and Head of Structures Department at the Civil Engineering Department at Monash University, has been appointed as Professor of Infrastructure Engineering, at Deakin University's Institute for Frontier Materials in Victoria. Accordingly Monash University has agreed to transfer the project to Deakin University. The transfer documentation and a suitable agreement between Eden and Deakin University will need to be agreed and completed before the project will commence.

This new project offers Eden a great opportunity to collaborate in world-leading, high level research into how its EdenCrete™ carbon nanotube enriched concrete admixture affects concrete at a nano-scale in delivering increased flexural and compressive strength, increased abrasion resistance and reduced permeability, amongst other benefits.

This research could potentially lead to both the improvement of EdenCrete™ and the development of a long dreamed of goal of producing ultra-high strength concrete that requires little or no steel re-enforcing. Quite apart from the enormous environmental and financial implications, such an outcome would have far reaching implications for the global construction industry. The significant advances on many fronts that Eden has made with its EdenCrete™ admixture over the past 18 months should considerably assist in accelerating the rate at which the exciting new research project can gain momentum.

A draft agreement between Eden and Deakin University was received towards the end of the quarter and will be negotiated and progressed during the next quarter.

CNT Enriched Polymers and Plastics Project in Australia

The CNT enriched polymer and plastics project with the University of Queensland (“UQ”) that is being headed by a post-doctoral candidate from the US and which is partly funded by an ARC grant, continued during the quarter. This project is aiming to develop reinforced polymer composites for potential automotive and aerospace applications.

UQ was awarded a \$255,000 grant by the Australian Research Council in 2014 to partially fund this three year project. This collaboration project follows earlier preliminary encouraging results from the addition of Eden’s carbon nanotubes into polypropylene.

To date the research has not generated any significant discoveries.

Background

Eden has developed an efficient, commercially competitive pyrolysis process to produce carbon nanotube (CNT) and carbon nano-fibres. Eden remains optimistic that it will develop suitable markets for the nano-carbon products that it can produce. Eden currently has established production capabilities at its subsidiary in Colorado that enable it to produce up to 40 tonnes of nano-carbon per year from a feedstock of natural gas (methane).

Additionally, the only other major by-product from Eden’s pyrolysis process is hydrogen, the real cost of which will be dependent upon the value of the carbon produced. The quantity of hydrogen produced will be 25% (by weight) of the quantity of carbon produced.

This hydrogen can be used either re-mixed with natural gas to create Hythane™ to fuel the pyrolysis reactor, generate electricity or captured and fed into the various hydrogen/Hythane™ applications that Eden has been developing, to try and accelerate the commercial rollout of these hydrogen applications based on the relatively low cost hydrogen. The current cost of hydrogen is one of the major limiting factors holding back a broader rollout of hydrogen and Hythane™. Encouragingly, the hydrogen produced using the Eden pyrolysis process will generate only a relatively very small amount of greenhouse gas as a by-product compared with most other currently available methods of hydrogen production, and in consequence it is projected that the hydrogen is likely to be both commercially competitive and environmentally preferable. However, as the quantity of CNT currently required is relatively small, in the early stages at least it is most likely that the hydrogen by-product will be used as fuel in the CNT production process thereby reducing both the CNT production costs and the CNT production Greenhouse Gas footprint.

OPTIBLEND™ DUAL FUEL SYSTEM (EDEN 100%)

US OptiBlend™ Progress

Eden Innovations (formerly Hythane Company), the wholly owned US subsidiary of Eden, received a purchase order for one OptiBlend™ dual fuel system during the quarter.

A significant fall in the price of oil during the past year has led to a severe decline in US OptiBlend™ sales. If and when global oil prices rise, a growth of sales of OptiBlend™ into the US oil and gas exploration and production markets is anticipated. It is also hoped that the oil and gas markets will be supplemented by demand from prime power markets such as agriculture (for uses such as powering irrigation pumps) and industrial plants, with additional requirements in backup power for hospitals and data centres. Additionally, expansion in suitable overseas markets is also anticipated in due course, particularly in India.

Recently a modest increased level of market interest in OptiBlend™ dual fuel systems in both USA and India started to emerge. It is hoped this will translate into increased sales in future quarters.

Eden Innovations is continuing to work on trying to establish a number of partnerships to increase its bi/dual fuel offerings. These proposed partnerships include work with various OEMs to become their default supplier and/or supplier of private labelled OptiBlend™ technology.

India OptiBlend™ Progress

During the quarter, Eden Energy (India) Pvt Ltd (“Eden (India)”), Eden’s wholly owned Indian subsidiary, won a tender to supply to Oil and Natural Gas Corporation Limited (“ONGC”) of India, eight OptiBlend™ dual fuel kits for use on diesel powered generator sets (“gensets”) used on drilling rigs it operates in India.

The value of the contract is for the Australian dollar equivalent of over A\$240,000. This is the first time that Eden (India) has secured a contract to supply ONGC, and is an encouraging development.

India is presently expanding its early stage domestic exploration for shale oil and gas, and ONGC is a significant participant in this exploration programme. Sales of OptiBlend™ kits in the US and India have greatly slowed over the past year as a result of low oil prices and a reduction in US exploration, and Eden (India) is hopeful of further success in this emerging Indian market.

Interest in OptiBlend™ in Nigeria

Eden (India) has also recently participated in an Indian trade mission to Nigeria, where it has secured interest in its OptiBlend™ dual fuel kits for use in various back-up power applications. This interest is currently being pursued in the hope of converting it into contracts to supply dual fuel kits.

Nigeria is a significant African producer of oil and natural gas but has an inadequate power grid, with the result that many larger Nigerian operations are supplying some or all of their electrical power requirements through the use of diesel powered gensets. The Nigerian market price of Natural Gas is significantly lower than the price of diesel fuel and provided a suitable supply of Natural Gas is available, conversion of these diesel powered gensets to operate on a combination of diesel fuel and Natural Gas is a financially attractive option.

OptiBlend™ Background

Eden has developed an efficient dual fuel system that is capable of operating on diesel engines and displacing up to 70% of the diesel fuel with natural gas. If Hythane™ fuel (hydrogen enriched natural gas) is used in place of natural gas, the displacement of diesel fuel could be as high as 80%. The use of the natural gas will greatly reduce greenhouse gas emissions and, in places where natural gas is cheaper than diesel, will also reduce fuel costs. It has significant market potential particularly in the diesel powered generator set (“genset”) market.

As a result of the increase in shale gas recovery in USA, the lower priced natural gas has resulted in a large market in USA for the conversion of these diesel engines to operate on a dual-fuel system of both natural gas and diesel is anticipated. Depending upon the size of the engine and the number of hours per day that it operates, payback times for the conversions are mostly a lot less than 12 months, so the cost is minimal compared to the replacement cost of a natural gas generator.

Hythane™ Fuel Projects

Indian Hythane Bus Demonstration Projects

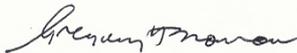
No progress was made during the quarter on any of the potential Indian Hythane™ projects. Whilst Eden remains hopeful that these projects may ultimately proceed, particularly if in the longer term Eden can utilise low cost hydrogen produced as a by-product from its pyrolysis project to produce carbon nanotubes, at present these projects are looking unlikely to occur.

UK GAS PROJECT

Although the market for UK gas exploration remains difficult, discussions in relation to a possible sale of Eden's UK gas assets are currently taking place. Details will be announced if and when an agreement is reached.

The UK Gas Assets

The UK Gas Assets, held by Eden's wholly owned UK subsidiary, comprise Eden's 50% joint venture interests in 9 Petroleum and Development Licences (PEDLs) in England and South Wales. It is possible that some of these licences may be relinquished in light of the current difficult operating conditions and the political uncertainty that may arise if the UK Government devolves power over Welsh PEDLs to the Welsh Authority as foreshadowed.



Gregory H Solomon

Executive Chairman

For further information, please contact Greg Solomon (+61 8 9282 5889) or visit our website (www.edenenergy.com.au).

Interests in Tenements as at 30 June 2015

Tenements	Location	Interest held at end of quarter	Acquired during the quarter	Disposed during the quarter
PEDL100	UK	50%		
PEDL148	UK	50%		
PEDL149	UK	50%		
PEDL214	UK	50%		
PEDL215	UK	50%		
PEDL216	UK	50%		
PEDL217	UK	50%		
PEDL219	UK	50%		
PEDL220	UK	50%		

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