Innovations that work.™

ASX Quarterly Report

For the Quarter Ended 31 December 2016

HIGHLIGHTS

EdenCrete®

- **Eden received and shipped its first European order for 1000 gallons of ® EdenCrete®, worth US$25,000.**
- **By the end of the quarter, more than 30 commercial trials had been commenced or were scheduled to occur in 2017 across USA for many possible applications, including:**
  - **Pervious concrete Pre-cast/ pre-stressed bridge beams**
  - **Other pre-cast applications**
  - **Ready mix concrete**
  - **Low shrinkage concrete suitable for dams**
  - **Highly abrasion resistant concrete**
  - **Shotcrete**
- **Additional trials for a range of possible customers and applications are expected to continue to occur on an ongoing basis as an integral part of the process of securing new customers.**
- **ASTM C494 "S" Test Programme for EdenCrete®, which over a 12 month period measured the changes in performance of a standard concrete mix when EdenCrete® was added, has been successfully completed. The final compressive strength test of concrete continued the earlier trend and showed an impressive 37% increase in compressive strength at 365 days, compared with identical concrete of the same age without EdenCrete®.**
- **Progress on first GDOT and MARTA commercial tenders including provisions enabling EdenCrete® to be used.**
- **Applications made for approval of EdenCrete® by a considerable number of other US State Departments of Transport, and also under NTPEP.**
- **Installation of on-site bulk EdenCrete® storage / dispensing equipment in Denver ready mix plant completed.**
- **First commercial project for the floor of a warehouse, completed in November 2016.**

- **The expansion of Eden's Colorado based production capability of EdenCrete® to a targeted maximum of 2-2.4 million gallons per year is now expected to be operational late in March or early-mid April 2017.**
- **Eden entered into a contract to purchase an adjoining property to its existing Colorado plant for US$1.525 million secure and the additional space to facilitate further increasing the EdenCrete® production capacity in Colorado. This purchase has now been completed since the end of the quarter.**
- **The election in November 2016 of US President-elect Donald Trump and the approval by Georgia of increases in sales taxes to fund improvements to roads and upgrade of the bus and rail system, significantly raise US infrastructure market prospects for EdenCrete®.**
- **Purchase of Colorado Production Facility Completed.**
- **Work commenced on clearing the access road to the proposed Augusta, Georgia EdenCrete® plant.**

Optiblend™ Dual Fuel

- **Two orders received in the USA during the quarter for two units (approx. US$50,000.)**

Corporate

- **Eden completed the second tranche, A$6 million, of the placement of A$15 million additional capital through Bell Potter, with the majority to 4 Australian institutions.**
- **Re-branding of "Eden Energy" to "Eden Innovations", to reflect the future focus of the Group, approved at the Annual General Meeting on 28 October 2016.**

DETAILS

EDENCRETE® (Eden 100%)

First European Order

Eden received and shipped its first European order for 1000 gallons of EdenCrete®, worth US$25,000. The order was received from a significant European construction company that specialises in pre-cast and prefabricated construction and that operates widely throughout Eastern Europe. It also has associations in the US, and the order comes after the customer's US associates had assessed EdenCrete® in the US and achieved encouraging results.

The customer is a significant user of concrete, operating in a number of European countries, building many factories, warehouses, showrooms and other commercial buildings, and frequently using precast and pre-fabricated techniques.

The significance of this order is that it is the start in Eden's longer term plan of not only penetrating the huge US concrete market, particularly in relation to infrastructure, but also to expand its market presence on a global basis, with the plan being to export EdenCrete® that is to be produced at Eden's proposed production facility in Augusta, Georgia, through the Port of Savannah, 130 miles away and open up the global market for EdenCrete®.

Trials of EdenCrete®

As at the date of this report, the sales team has already secured more than 30 trials of EdenCrete® by potential customers in various parts of the US, for a number of different uses and potential applications. Some of these have been completed and a lot more are still pending.

After each of these trials takes place, the results of laboratory tests are not usually until at least 56 days after the trial is conducted. These trials are wide ranging in their objectives and are often followed by further trials often aimed at optimising the amount of EdenCrete® required to obtain either the most commercially competitive result, or in some cases, the maximum improvement in performance for the particular application for which the customer is conducting the trial.

To date a majority of the trials that have been conducted have produced encouraging results, in some cases using a little as 0.5 gallons/ cubic yard of concrete.

A list of sorts of trials conducted during the quarter and the results achieved were:

- Pervious concrete Pre-cast/ pre-stressed bridge beams
- Other pre-cast applications
- Ready mix concrete
- Low shrinkage concrete suitable for dams
- Highly abrasion resistant concrete
- Shotcrete

More trials are scheduled to occur into the future on an ongoing basis as an integral part of the sales process. These future trials are also likely to test not only similar applications but also may test other applications/ performance characteristics under different conditions and for many varied applications.

Arranging trials by potential customers is currently the primary target for the sales team. This includes progressively approaching both major potential commercial customers as well as the Departments of Transportation and other selected state and federal government agencies across the US, to try and arrange trials similar to those undertaken and planned in Georgia, based upon the results achieved to date with the Georgia Department of Transportation and MARTA.

It is not anticipated that all of these trials, even if successful, will necessarily result in future sales, because each application will be governed by the economics and other requirements of the particular project, but as most of the companies undertaking the trials are large groups, it is hoped that at least a reasonable number of trials will in due course result in significant future sales.

The highly experienced Eden sales team will follow up on these trials to endeavour to convert as many as possible into one or more, or even long term, ongoing orders.

Completion of ASTM C494 "S" Test Programme

Eden completed the ASTM C494 "S" testing programme for EdenCrete® enriched concrete that has been undertaken in Colorado over the past twelve months, to test EdenCrete® in accordance with the standards and the procedures of the American Society for Testing and Materials ("ASTM") for its ASTM C494 "S" certification of EdenCrete®, the industry standard certification procedure for specific performance concrete admixtures.

The details of the positive results achieved during the 12 months trial period are set out in **Figure 1** below.

EdenCrete™ ASTM C494 Results (Reported by Intelligent Concrete LLC)								
	% Increase over Reference; Dosage = 3.5 gpy							
	Age (Days)							
Test	1	3	7	28	56	90	180	365
Compressive Strength (ASTM C39)	25%	35%	39%	41%	41%	39%	38%	37%
Flexural Strength (ASTM C78)		25%	19%	32%				
Split-tensile Strength (ASTM C496)				29%	22%			
Abrasion Resistance (ASTM C779 Proc C)					56%	59%		
Length Change (ASTM C157; Shrinkage)	39% reduction							
Time of Set (ASTM C403)	Reduced: Initial Set 3 min, Final Set 4 min							
Freeze/Thaw Resistance (ASTM C666)	Reference = 88.0, EdenCrete = 96.4. 9.5% enhancement							
Program Complete. *EdenCrete™ successfully conforms to the ASTM C494 Specification for Type S chemical admixtures used in concrete.*								

Figure 1. Completed ASTM C494 Results

The completion of the ASTM C494 "S" trial programme is another major milestone for EdenCrete®, which will facilitate:

- The continuation of the approval process, towards a future approval to use EdenCrete® on highways, by other State Departments of Transportation in the USA to which Eden has already applied for approval, but which first require the completion of the ASTM C494 Programme, in addition to satisfaction of other later conditions; and
- Assessment of the performance of EdenCrete® for its possible future use by a range of groups including engineers and architects.

The ASTM C494 "S" trial results were all based on a dosage rate of 3.5 US gallons of EdenCrete® per cubic yard of concrete, 12.5% lower dosage than that trialled by GDOT.

Georgia Department of Transport and MARTA

EdenCrete® was approved in December 2015 for use in the GDOT's Class B/ 24 hour repair mix concrete, and is also approved for a field trial for GDOT's concrete pavements (used in new highway construction)(GDOT Specification Section 430 and/or 439) and concrete white-topping (replacing the surface of an asphalt pavement with a concrete surface layer) (GDOT Specification Section 453).

At Eden's request, GDOT has agreed to this field trail occurring during the next few months.

During the quarter, Eden was advised that:

- GDOT plans to issue two requests for tender for projects that will involve the use of GDOT's Class B/ 24 hour repair mix concrete; and
- the Metropolitan Atlanta Rapid Transit Authority (MARTA), due to the impressive improvements delivered by EdenCrete® in an earlier field trial conducted for MARTA at the Brady Mobility Facility (ASX: EDE – 18 July 2016), plans to issue a request for tender for another project that will also involve the use of EdenCrete®.

Since the end of the quarter:

- EdenCrete® was officially added to the Qualified Products List ("QPL") of the Georgia Department of Transportation ("GDOT"), for use in GDOT's 24 hour accelerated strength concrete (Section 504) and Class B concrete (Section 500) applications; and
- GDOT has completed the drafting of the required changes to the specifications for its 24 Hour Highway Concrete Repair Mix and its Class B concrete to enable the use of EdenCrete®.

  These specifications enable GDOT engineers to specify the use of EdenCrete®, Eden's carbon nanotube enriched, liquid concrete admixture, in dosages of either 2 US gallons (7.57 litres) or 4 US gallons (15.14 litres) per cubic yard (0.765 metres^3) of concrete in GDOT projects utilising its 24-hour Accelerated Strength Concrete repair mix and also its Class B concrete.

- Based on discussions with GDOT officials, Eden is hopeful that GDOT will commence to use EdenCrete® in suitable GDOT projects in the reasonably near future.

Other US State Departments of Transport

During the quarter applications were lodged with a number of other state Departments of Transport (DOT) thereby starting the process required to enable EdenCrete® to be approved by each DOT for use, and added to their qualified product lists for use in concrete used in each of their highways and bridges.

Eden also initiated the process for approval of EdenCrete® under NTPEP, a body that was established within the American Association of State Highway and Transportation Officials (AASHTO) in 1994, as a technical service program, which reports to the Standing Committee on Highways (SCOH).

It combines the professional and physical resources of the AASHTO member departments in order to evaluate materials, products and devices of common interest for use in highway and bridge construction.

The primary goal of NTPEP is to provide cost-effective evaluations for the state Departments of Transportation (DOT).

Installation of on-site Bulk EdenCrete® Storage and Dispensing Equipment

The installation of the first on-site, bulk EdenCrete® storage and dispensing equipment was completed during the quarter in a Denver based ready mix plant. Apart from providing an opportunity to install and trial Eden's newly designed dispenser, it also enables EdenCrete® to be seamlessly incorporated into the normal ready mix production process when it is required.

One of the first contracts included supplying Eden with the required EdenCrete® enriched concrete as part of the current up-scaling of Eden's Denver plant.

This custom built installation provides the blueprint that will be used in the roll-out of many of the automated on-site, bulk EdenCrete® storage and dispensing systems for use with major customers across the US.

First Commercial Contract for Warehouse Floor Completed

The first US commercial project using EdenCrete® to strengthen concrete for flooring in a warehouse, to be used for the floor of a warehouse expansion in Indiana, was completed in November 2016.

This project involved the addition of EdenCrete® to 200 cubic yards of concrete at a dosage rate of one gallon per cubic yard.

Expansion of Eden's Colorado EdenCrete® Production Capability

The expansion of Eden's Colorado based production capability for its EdenCrete® concrete admixture continued during the quarter. The expansion is intended to increase the annual production capability of the Colorado plant from its present level of approximately 108,000 gallons of EdenCrete® to a target of between approximately 2 million - 2.4 million gallons (7.6 - 9.1 million litres) per annum.

To achieve this scale-up and handle the throughput of product, the entire plant is being up-scaled. The design of all items is completed, and most of the items have either been ordered or are currently under construction. These include the following:

- The equipment to produce the quantity of catalyst required for production of the necessary carbon nanotubes;
- Two new reactors to manufacture the carbon nanotubes; and
- All the necessary processing, mixing, storage, and dispensing equipment.

Additionally alterations to the layout within the building and its surrounds are underway to accommodate the new equipment. This included disposing of all redundant equipment such as the original gen-set that was first used in the development of Eden's OptiBlend® dual fuel system, to create sufficient area for the EdenCrete® expansion.

Minor delays have been encountered due mostly to the time required to obtain the necessary building permits. However the up-scaling is still scheduled to be completed and operational, late in March or in early-mid April 2017.

Purchase of Original Colorado Production Facility Completed

During the quarter, the company completed the purchase of its original Denver based Production Facility for approximately US$1.2million, payable over 5 years and carrying interest to the vendor at the rate of 2% p.a. This gives Eden total future security over this Colorado production facility, that is currently being significantly upgraded with the current expansion of the EdenCrete® production.

New Colorado property purchased to facilitate further EdenCrete® production expansion

Eden entered into a contract to purchase an adjoining property to its existing Colorado plant for US$1.525 million secure and the additional space to facilitate further increasing the EdenCrete® production capacity in Colorado. The purchase has been completed after the end of the quarter. The property comprises a parcel of land with an area of 24,829 square feet (2,306 m2) on which is erected a two storey building with a total area of 12,599 square feet (1,170 m2) that was built in 1999 (**see Figure 2**).

Figure 2. Adjoining building that has been purchased

The building was previously occupied as a research facility by a major aerospace company and, in addition to a number of offices, has a large workshop/ warehouse area and loading dock suitable for semi-trailers.

This facility will enable both the administration, the OptiBlend® business and the research and development facilities to both expand, as necessary, and also to be re-located from Eden's existing site to the new building, thereby freeing up sufficient additional space into which the EdenCrete® production, which is currently being scaled up, can be further expanded.

This added space adds significantly to the company's EdenCrete® production capability in Colorado, which based on current market interest, is projected could well be required to meet expanding demand over the next 18-24 months, until Eden's proposed large scale EdenCrete® plant can be built in Augusta Georgia.

The new property shares a common rear boundary with Eden's existing Colorado plant, and will thereby give the expanded Eden site access to 2 street frontages that will assist in despatching the increased volumes of production in the event that this may be required at some time in the future.

The completion of has been completed since the end of the quarter and was paid for out of the company's cash balance.

Work has commenced on setting the new building up to house the administration, research and development and OptiBlend® operations, and it is presently targeted to move these divisions to the new building early in March 2017.

Increased US infrastructure spending

The proposal of Donald Trump, the next President of the USA, to dramatically increase US infrastructure spending is very positive news for Eden and its objective of penetrating the huge US concrete and infrastructure market with EdenCrete®.

Much has been written about the enormous size of the US infrastructure market and the poor state of repair that much of it is in, and the very strong commitment that President-

elect Trump repeated in his acceptance speech (at 1 minute 30 seconds) to dramatically increase spending on all aspects of US infrastructure, including highways, bridges, tunnels, airports and hospitals, which will see further substantial funding being made available to address these issues.

In addition to the anticipated benefits for EdenCrete® flowing from the US Presidential election, in Georgia two referenda were also approved by voters to extend state infrastructure funding, giving the city of Atlanta and MARTA permission to raise taxes to fund the upgrading of roads and to expand the light rail, subway and bus system.

The two tax increases, one for a 0.5 cents sales tax increase for MARTA and the other for a 0.4 cents increase to fund other Atlanta transportation improvements, will significantly increase the availability of Georgia state infrastructure funding.

It is reported that these tax increases are intended to raise $2.5 billion over 40 years to pay for more buses, and the other infrastructure projects in Atlanta including roads, and expansion/ upgrading of the subway and light rail system, a number of which projects may well be suitable projects for the use of EdenCrete®.

Following on from the above, on 6 December 2016, the Commissioner of the Georgia Department of Transportation ("GDOT") gave a presentation in which he outlined the projections for Georgia's transportation infrastructure programme and GDOT budget through to the end of 2019.

It included a detailed breakdown of work that is underway and planned in relation to highways, roads and bridges, as well as budgeted expenditure of US$1.5 billion dollars for the 2017 financial year, and gives a very good picture of the target market that Eden Innovations Ltd ("Eden") is targeting with EdenCrete®.

The work planned through until June 2018 includes:

- Over 2,500 miles of roadway resurfacings
- 118 bridge replacements
- More than 300 bridge rehabilitations
- Upgrade and improve 109 intersections with signals

Eden is maintaining a major focus on infrastructure opportunities around America, with an initial primary focus being on Georgia, where Eden is hopeful of receiving its first commercial orders from GDOT in the reasonably near future, now that all necessary regulatory procedures and internal processes have been completed.

Proposed Georgia based EdenCrete® Production Facility

As previously announced, Eden's wholly owned subsidiary, EdenCrete Industries Inc. ("ECI") has secured an attractive financial assistance and incentives package worth an aggregate of US$24.76 million to assist it establish its large scale global manufacturing plant in Augusta, Georgia on 45 hectares (112 acres) of industrial land.

ECI proposes to establish its large-scale global EdenCrete® production facility in Augusta over the next seven years at an estimated cost of US$67 million to create 251 jobs, and upon which the incentive package is conditional.

The facility will be built in up to 10 separate buildings, each with four production lines with a total planned annual production capacity of 189 million litres (50 million gallons) of EdenCrete® concrete admixture per building. The site has sufficient area to accommodate up to 10 of these buildings as demand grows.

During the quarter, the construction of the access road started and the ground breaking ceremony to mark the commencement took place on 17 October 2016.

The 2 miles of new roadway has now been cleared down to the proposed EdenCrete® plant site (**see Figure 3**) and engineers have been commissioned to commence the preliminary site plans for the proposed Eden plant.

Figure 3. Clearing new access road to Proposed Augusta plant

EdenCrete® New Product Development

Further product development of EdenCrete® is underway in the hope of developing a wider range of specialty variations of EdenCrete® for various specific specialist concrete applications. This development work is technically complex and will take time and require comprehensive testing of each new application before any new products will be made available commercially.

High strength CNT enriched concrete requiring little or no reinforcing steel

The research project with Deakin University ("Deakin"), partly funded by an Australian Research Council ("ARC") Linkage Grant into ultra-high strength carbon nanotube enriched concrete requiring little or even no reinforcing steel formally continued during the quarter. A range of different initials formulations of EdenCrete® has been produced and during the quarter, this reasonably large consignment of EdenCrete® was shipped to Deakin to enable the trials and research to begin.

This 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 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 major implications for the global construction industry. Eden has already made significant advances with EdenCrete® towards achieving this goal, and this new project should assist in accelerating this progress.

EdenPlast™ / CNT Enriched Polymers and Plastics

Work continued on the 2014 collaborative research project, partially funded by the Australian Research Council ("ARC") (to the extent of A$255,000), that Eden and the University of Queensland have been undertaking into carbon nanotubes in plastics. An application for further ARC grant funding has been lodged to enable the work to continue past the end of the current program.

The following conclusions from the preliminary result achieved to date with Eden's new product (EdenPlast™):

- Excellent combination of high modulus (stiffness) and outstanding ductility (elongation-at-break) achieved for Nylon containing <1% Eden's CNTs compared to commercial grades of nano Nylon 6.
- Superior ductility with comparable tensile strength (> 75 MPa, 50% Relative Humidity ("RH") conditions) compared to super-tough commercial Nylons containing higher levels (4wt%) of nanoclays.
- Higher tensile strength than comparable Nylon based materials with similar ductility.

- Excellent dispersion of the Eden's CNTs in EdenPlast™.
- Visual clarity and transparency suggests suitability for a super-tough-film grade.
- The relatively low-cost processing method of EdenPlast™ could potentially result in production of cost-effective, high-stiffness and/or high-toughness grades of nano Nylon 6.
- Possible suitable future markets for EdenPlast™, indicated by the results to date, are the automotive and packaging markets.
- Whilst fundamental studies (XRD, rheology, thermal and electrical analysis) and further standard characterization (ASTM, ISO) need to be carried out (impact, flexural, tensile, dynamical, fatigue) before possible commercialisation could be considered, these preliminary results from extruded filaments are considered very encouraging.

OPTIBLEND™ DUAL FUEL SYSTEM (EDEN 100%)

OptiBlend® Progress

During the quarter, Eden Innovations LLC, Eden's wholly owned U.S. subsidiary, received two purchase orders for two OptiBlend® systems worth US$50,000.

In addition to this significant increase in the level of orders received (compared to prior quarters), Eden has also noted an encouraging increase in the level of interest in OptiBlend® in both the USA and India. Although the global price of oil remains relatively low, which from market reports appears likely to continue for the foreseeable future, Eden is hopeful that the level of interest in dual fuel kits will increase further in due course.

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.

Hythane™/ Hydrogen Fuel Projects

Hythane Projects

No progress was made during the quarter on any potential Hythane™ projects. Whilst it may be possible for such a project to ultimately proceed, particularly if in the longer term Eden can generate sufficient 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.

However, some preliminary interest is currently being shown by the Indian government and Indian vehicle manufacturers on possible development of hydrogen fuelled, internal combustion engines, which may be relevant to Eden in the future, as Eden holds a US patent for such an engine.

Corporate

Successful A$15 million capital raising to accelerate expansion in Georgia

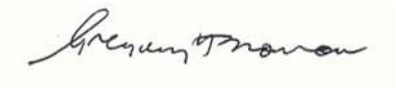
During the quarter Eden received shareholder approval to issue the remaining 33,333,333 shares as part of the A$15m placement and completed the placement to Australian institutional and sophisticated investors with the issue of the remaining 33,333,333 shares (to raise a further A$6 million).

The Directors of Eden undertook this capital raising because it significantly de-risks the US EdenCrete® project in that:

- The placement will enable Eden to fast track the initial development of the proposed large scale EdenCrete® production facility in Georgia in 2017 / 2018 to meet the anticipated demand, regardless of possible major fluctuations and upheavals in the global financial markets; and
- It also ensures Eden has sufficient funds immediately available to continue expanding its newly formed team of highly successful and experienced sales people, a move anticipated to significantly increase the volume of EdenCrete® sales over the next year.

Proposed Re-branding of "Eden Energy" to "Eden Innovations"

In order to reflect more accurately the ongoing focus of the Group as a clean technology innovator that proposes to develop and market a range of new, environmentally beneficial technologies, a resolution to change the name of the company from "Eden Energy Ltd" to "Eden Innovations Ltd" was approved at the company's Annual General Meeting on 28 October 2016.



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