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ACN 109 200 900

## AUSTRALIAN SECURITIES EXCHANGE ANNOUNCEMENT

13 November 2017

### EDENCRETE® - US UPDATE

#### HIGHLIGHTS

- **New Product Development**
  - Significant progress in development of:
    - A high concentration, lower cost EdenCrete®, and
    - A new version of EdenCrete® for use in a large new market, concrete made with pozzolanic cements, increases early / mid-term strength.
    - Commercial trials and sales of new versions planned in early in 2018.
  - NTPEP certifications of both new products to commence in early 2018.
  - Up to 30 commercial trials across all products scheduled in Q1 and Q2 of 2018 targeting a wide range of performance characteristics.
- **Sales**
  - Current sales target of EdenCrete® for 2017/18 is US\$6 million.
  - Additional sales of new versions of EdenCrete® also expected.
  - Invitations to Bid (ITBs) issued for first 2 GDOT repair projects that in aggregate require over US \$225,000 of EdenCrete®.
  - Latest GDOT estimate is for 22 repair projects before 30 June 2018.

#### DETAILS

##### New Product Development

Over the past six months Eden Innovations Limited ("Eden") (ASX: EDE) has made significant progress in the development of two new versions of EdenCrete®: a high concentration, lower cost version (EdenCrete® HC), and a new version suitable for use in the widely used concrete made with pozzolanic cement (EdenCrete® P).

**Each of the new versions is anticipated to attract considerable interest when released for commercial trials and sales, planned for early in the first quarter of 2018.**

**These two additional products will be formally launched at World of Concrete 2018 in Las Vegas in January 2018, two years after EdenCrete® was formally launched at the same convention.**

### **EdenCrete® HC**

At present a version of double strength EdenCrete® is being trialled internally and is producing performance levels equivalent to twice that of the standard EdenCrete®. Because it requires a smaller volume for the same performance improvement, it results in reduced transport and storage costs, and a higher value product per gallon. As a consequence, we anticipate that customers will be able to achieve the same performance level as from the standard EdenCrete® but at a significant discount to the current price. In addition, the profit margin that is likely to be achieved by Eden is anticipated to be higher.

The anticipated lower effective cost for the same performance benefits is considered likely to increase the commercial attractiveness of EdenCrete® to customers, which in turn should accelerate the sales growth rate.

### **EdenCrete® P**

For more than six months, Eden has been developing and testing a new version of EdenCrete® that is compatible with pozzolanic concrete. This is a high strength alternative form of concrete that is used in a variety of industrial applications, such as pre-cast concrete, general construction, large industrial concrete structures such as bridges and dams, and marine settings. This new product will be called EdenCrete® P, and expands the EdenCrete® range into a significant new market which was previously not being targeted.

EdenCrete® P aims to improve both the early strength and long-term strength of pozzolanic concrete. The early strength improvement is especially important in terms of commercial applications. The major downside of pozzolanic concrete is that it is weaker in the early stages of setting the concrete. This means that the concrete takes longer to produce, thereby increasing the time and equipment cost of projects that rely on it.

By increasing early to mid-term strength, EdenCrete® P has the potential to shorten the curing time for pozzolanic concrete, thereby resulting in greater cost savings, as well as possibly improving the long-term strength of the concrete. As such, it is likely to be of considerable commercial interest.

Pozzolanic concrete is based on using pozzolanic cement as a replacement for standard cement (known as Ordinary Portland Cement, or OPC) in the concrete formation process. Pozzolanic cements are silicate-based materials that are typically obtained from the waste products of other industrial processes. The most common are fly ash (from coal-fired power plants), blast furnace slag (from steel furnaces), and silica fume (from electric arc furnaces used to make silica metal

and ferrosilicon alloys). Other naturally occurring pozzolans include calcined clay, calcined shale, and volcanic ash. The latter was used in Roman times, and contributed to the famous strength and longevity of Roman concrete structures.

Pozzolan-based concretes are mainly used because of the generally higher longer-term strength that is achieved compared with concrete that is solely OPC based. Historically pozzolanic cement has also been cheaper, although this is changing with the closure of more coal-fired power plants and the reduction in fly-ash that results.

To date, many of Eden's internal trials of EdenCrete® P have been conducted in our New York based laboratory using a concrete mix, comprising 40% slag, that is widely-used commercially in the north eastern parts of the US for a wide range of applications. It has also been successfully trialled with fly-ash.

Trialling EdenCrete® P in New York with local cement and aggregate has allowed us to work with the chemistry of the regional concrete and develop a product that is already trialled for the local market.

In these trials, EdenCrete® P was added at cost-effective, low-dosage rates to the pozzolanic cement concrete mix. EdenCrete® P has been trialled both on its own and also in addition to either EdenCrete® or EdenCrete® HC, and all have achieved significant improvements in the short to mid-term (3-28 days) strength of the concrete. Ongoing testing to further optimise these results is presently underway.

Eden also plans to initiate the NTPEP certification of each of EdenCrete® HC and EdenCrete® P as soon as the internal trials are successfully completed, which is anticipated to occur early next year. The NTPEP certification should be relevant to obtaining approval from Departments of Transportation in the 19 States that clearly indicate that they rely exclusively on NTPEP certification for approving the use in concrete of specialty admixtures such as EdenCrete®.

In addition to several commercial EdenCrete® trials currently underway, there are up to 30 commercial trials of EdenCrete®, EdenCrete® HC and EdenCrete® P that are planned for Q1 and Q2 of 2018 in many parts of the US.

These trials are targeting a wide range of specific market applications and performance characteristics and will cover many different sectors of the concrete market.

## **Sales**

The current Eden sales target, based only on sales of the original EdenCrete®, for this financial year is US\$6 million, and is projected to rapidly increase in succeeding years. Eden is on track to achieve the current year's goal based primarily on existing projects utilising EdenCrete® that are already in the pipeline. Many of these relate to a repair program that is already agreed upon, and for which EdenCrete® is already specified as a product to be used.

With the additional impact on sales of the new product ranges, Eden is hopeful to significantly exceed the current US\$6m target.

We describe the effects of these sales for the current year and future years below.

### ***GDOT 2017/2018 Repair Projects***

In June we received confirmation from GDOT that EdenCrete® would be used in all state funded, full depth slab repair jobs from 1 July 2017 onwards (the start of their financial year) which we now believe may be worth between US\$1m - \$2m.

So far, Invitations to Bid (ITB) have been issued for the first 2 repair projects that will involve the use of over US\$225,000 of EdenCrete®. The latest GDOT estimate that we have received is that there could be up to 22 repair projects in Georgia before 30 June 2018 and we expect a lot more ITBs will be issued over the next 3-5 months.

In September we received FHWA approval for use of EdenCrete® in federally-funded, full depth slab repair jobs in Georgia and also received advice that the first job, which would be this financial year, would be of a size that could be worth up to US\$1.3 million to Eden.

### ***Texas Pre-stressed Concrete Manufacturers***

A leading TxDOT-approved pre-stressed bridge beam manufacturer in Texas has already been supplied with 3 tanker loads of EdenCrete® worth over US\$300,000. The customer has recently extended the contract to include two additional plants, and annual sales to this customer alone could now be worth up to US\$1.4 million over the full year.

### ***Future Sales from other State DOTs and International Projects***

We have also now been approved for use by the DOTs in 10 states and are pushing ahead to secure trials and possible contracts as early as possible. We anticipate that if FHWA approval is required in any other state (because they specify EdenCrete® by name) we will have a very good chance of receiving it.

We have undertaken important field trials in Colorado for concrete that is subject to extreme levels of salt and other road chemicals. We have also commenced trials in Korea.

### ***New Products***

As noted above, there is considerable scope for additional sales from the new high concentration and pozzolanic product versions. We have been making very good progress with the development. Both new products are expected to be well accepted by the market place and should be available for commercial testing and sale by early next year.

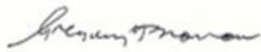
## **Conclusion**

Over the past year the company has made and continues to make very significant progress in its endeavors to develop and market EdenCrete® to the huge US and global concrete markets and is well poised to significantly build upon this progress in the coming years.

## **BACKGROUND**

*EdenCrete® is Eden's 100% owned, proprietary carbon-strengthened concrete additive, that enhances a wide range of performance characteristics of the concrete including compressive strength, flexural strength, tensile strength, abrasion resistance, reduced permeability and reduced shrinkage, thereby delivering stronger, tougher, more durable and longer lasting concrete.*

*One of the primary target markets for EdenCrete® is improving the performance of concrete used in the construction and maintenance of concrete roads, bridges and other infrastructure, particularly where it is subject to heavy wear, freeze/thaw weather conditions and/or high levels of added salt. Additionally, it has potential for use in most other concrete applications including high-rise building construction, marine and coastal applications, water storage and pipelines, hardstand areas, and pre-stressed and pre-cast concrete structures and products.*



**Gregory H. Solomon**  
Executive Chairman