

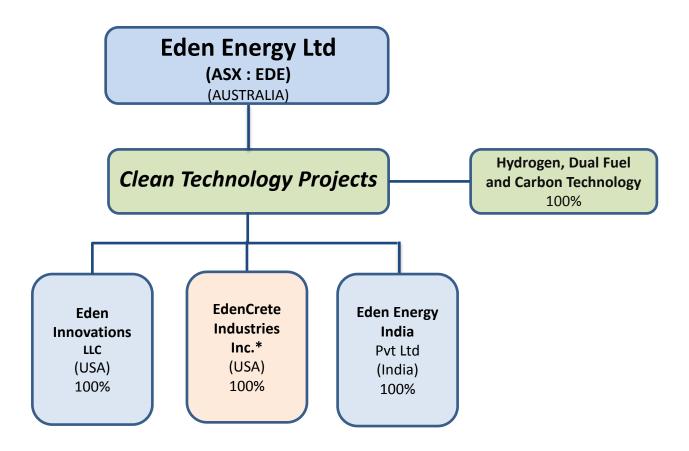
### **Investor Presentation**

Greg Solomon
Chairman
July 2015



## Corporate Structure





\*EdenCrete Industries Inc. is to be the US EdenCrete™ production and marketing company

## **Carbon Nanotube Project**

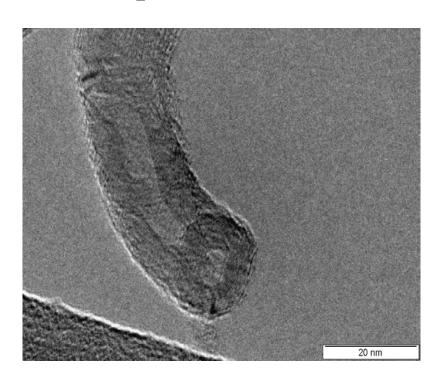


# Eden/UQ Developed Pyrolysis Process CNT/CNF from Natural Gas with no CO<sub>2</sub> (Eden 100%)

 $CH_4$  + Catalyst + Heat =  $C + 2H_2$ 

#### Multi-walled carbon nanotubes:

- Tensile strength 200-300x steel
- Approx. 17% the weight of steel
- High electrical/thermal conductivity
- Bulk uses concrete/plastics/polymers
- ARC project with University of Queensland on plastics/ polymers
- Patents in 8 countries



TEM image of Eden's MWCNT

## **Eden's CNT/CNF Production**





- Eden's Pilot Commercial
   Scale Reactors, Denver
- Scalable, modular reactors
- Efficient catalyst production
- High quality/low cost CNT/CNF

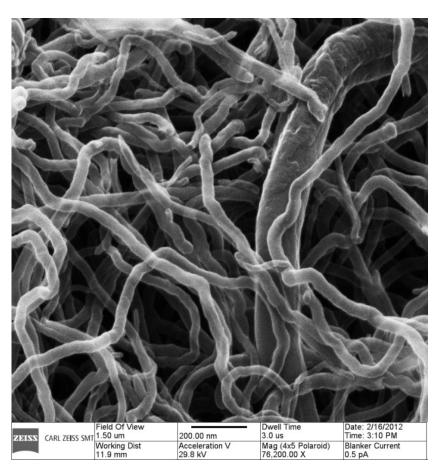
## **Development of CNT in Concrete**



- Significant global research conducted over 5 8 years
- Eden Innovations (Denver) Testing and developing for 4 years
- Civil Contractors Federation Environment Award Australia 2014
- Monash University (Melbourne) Collaboration 2011-2014
- Deakin University (Melbourne) Proposed Collaboration 2015-2018
  - 2015 ARC Linkage Grant \$300,000 funding over 3 years
- Independent US and Australian trials 2015

### **CNT in Fresh Cement Paste**





Build-up of dense, hydrated cement on surface of CNT (top right)

- CNT provide:
  - nucleation points for cement hydration
  - > nano-scale fibre re-enforcement.
- CNT facilitate denser, stronger cement
- Other larger-scale fibres provide only nano-scale fibre reinforcement.

Monash University Helium Ion Microscope Image

### **CNT in Concrete - Benefits**



## • Benefits – denser, stronger, tougher concrete

- > Reduced costs building / maintenance
- > Less concrete / less steel re-enforcing required
- > Greater strength compressive and flexural/tensile
- > Reduced abrasion longer life, harder wearing concrete
- > Reduced corrosion denser, less permeable concrete
- Liquid surfactant added during batching process

## CNT in Concrete – Results to Date



## **US and Australian Concrete Trials**

- Results from US and Australian Trials include:
  - Compressive strength < 39% increase</p>
  - Tensile strength < 48% increase</p>
  - Permeability < 55% reduction (improvement)</p>
  - > Abrasion rate < 48% reduction (improvement)

## **US / Australian Trial Results**



### **US Trials 2015** – Metro Mix- Colorado- Moderate Strength Concrete

	Compressive Str (psi)			Tensile Str (psi)			B Electrical Perm (kΩ.cm)		
	21 D	28 D	56 D	21 D	28 D	56 D	21 D	28 D	56 D
Control	4681	4981	5195	-	319	343	-	3.7	4.1
EdenCrete 500	5792	5843	6694	1	463	507	_	5.7	6.3
Precent Inc from Control	24%	17%	29%	-	45%	48%	-	53%	55%

### **Australian Trials 2015 – Global Concrete Company- High Flex Strength Concrete**

	Compressive Str (Mpa)			Flexural Str (Mpa)			B Electrical Perm (kΩ.cm)		
	7D	28 D	56 D	21 D	28 D	56 D	21 D	28 D	56 D
Control	41	56.5	-	-	6.4	-	-	-	-
EdenCrete 500	55.5	78.5	-	-	7.7	-	-	-	-
Precent Inc from Control	35.37%	38.94%	-	-	20.31%	-	-	-	-

























## **CNT in Concrete- Applications**



### Global Applications

- Increased Abrasion Resistance
  - o road and bridge surfaces, pavements, floors
- Lower Permeability
  - o roads, bridges, runways (subject to "freeze thaw"/salt conditions)
  - coastal and marine applications
  - o dams, spillways, sewer /water pipelines
- Increased Compressive and Tensile Strength
  - high rise buildings, bridges, retaining walls, pre-fabricated concrete applications

## **US Marketing Plans**



### **Initial target markets**

### **US Infrastructure / Pre-fabricated Concrete / Ready Mix Concrete**

- **US Infrastructure** including interstate highways (73,000kms\*) and bridges
  - > Interstate Highways \$40bn est. annual repair bill
    - use≈380mt of concrete p.a.(40% of US concrete market)\*
  - > Georgia Infrastructure
    - Includes a network of major interstate highways
    - Over 15,000 bridges- more than 4,000 identified as non-repairable
    - Estimated bridge replacement costs- over US\$300m p.a. for 20 years

(\*derived from US Geological Survey Data -2005)

## **US Production and Funding Strategy**



- Expand production to 1,000 tonne p.a. CNT 18-42 months
  - ➤ Sufficient for ≈ 4% of annual US Interstate Highway requirements
  - Preliminary budget US\$52-65 million
- Future planned expansion- 10,000 tonnes pa of CNT
- Funding Strategy
  - State Government / County / Authorities Incentives
  - Equity- existing shareholders and new investors
  - Debt financing- dependent on off-take agreements
  - Future cash flow and debt financing

## **US Market Development**



### **Progress to date**

- Initial approaches to Georgia DOT and Colorado DOT
- On-going trials in Colorado and for pre-fabricated concrete products
- Georgia DOT laboratory tests/field trials anticipated August 2015
- Design work for first stage CNT production scale-up underway
- Various factory sites in Georgia being investigated
- State Govt / County / Authorities Incentives being discussed
- Other possible locations may be considered
- Decisions targeted within 2-3 months

## OptiBlend™ Dual Fuel System



- **Displaces up to 70% of diesel with natural gas** in diesel engines
- **US market** shale gas exploration / back-up power
- Indian market gensets / locomotives / shale gas exploration
- Significant cost savings
  - Payback period often less than 12 months for larger gensets
- Total sales to date >140 units (≈US\$4.5million)
- **Cummins Inc** selected OptiBlend<sup>TM</sup> for its drilling rig power modules
- Significant long term potential several new projects under discussion

## **Corporate Details\***



ASX Codes: EDE, EDEO

Total Issued Shares: 945m

Total Issued Options: 190m

(3 cents- 30 Sept 2018)

Share Price: \$0.052

Market Capitalisation: \$49.1m

Major Shareholder: Tasman Resources Ltd – 46.16%

<sup>\*</sup> As at 24 July 2015



#### **ASX: EDE**

### **Greg Solomon**

#### **Executive Chairman**

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