



ACN 109 200 900

## **ASX Quarterly Report**

### **For the Period Ended 31 March 2015**

## **HIGHLIGHTS**

### **Pyrolysis Project - Carbon Nanotubes/ Carbon Nanofibres/ Hydrogen**

- **US trials on EdenCrete<sub>500</sub> enriched concrete commenced in Colorado. Results after 28 days included:**
  - **45% Increase in Tensile Strength in Concrete**
  - **17 % Increase in Compressive Strength in Concrete**
  - **53% Reduction (Improvement) in Permeability in Concrete**
- **Australian tests on EdenCrete<sub>500</sub> enriched concrete commenced. Results after 28 days included:**
  - **An average of up to 38% increase in compressive strength in concrete; and**
  - **An average of up to 27.8% increase in flexural strength in concrete.**
- **Wide Range of Potential Commercial Applications Emerging**
- **The CNT enriched polymer and plastics project with the University of Queensland (“UQ”) continued during the quarter.**
- **An Indian company has undertaken preliminary trials using Eden’s nanotubes in polymer coatings, polymer composites, anti-corrosive coatings and antifouling coatings with encouraging results and discussions have commenced regarding a possible collaboration.**

### **Optiblend™ Dual Fuel Project**

- **Orders received during the quarter for 15 units having an aggregate value of US\$184,000 (A\$233,000) bringing annual sales for 2014 to US\$2.40 million (approx. A\$2.9 million).**

### **UK Gas Assets**

- **The conditions precedent to the Eden and UKOG formal merger agreement were not all satisfied by the extended Longstop Date, 9 December 2014. In this circumstance the conditional Merger Agreement will still continue unless and until such time that it is terminated at any time by either party. Discussions are continuing between the parties.**

# DETAILS

## NANO-CARBON, HYDROGEN and HYTHANE™

### Pyrolysis Project (Eden 100%)

#### *Market progress*

During the quarter, Eden continued its efforts to develop suitable large scale commercial markets for its nano-carbon products. In particular, Eden continued to focus on developing commercial applications of the CNT-enriched concrete.

#### *CNT Enriched Concrete and Cement Projects*

##### **First US Field Trials of EdenCrete<sub>500</sub>**

The first US field trials were commenced by Colorado-based concrete company, Metro Mix of the Company's award-winning EdenCrete<sub>500</sub>, a carbon-enriched concrete additive technology that adds super strength and performance to concrete but with very little extra weight.

The 28 day results, produced in laboratory tests being conducted in conjunction with the field trials, of concrete made using EdenCrete<sub>500</sub> produced encouraging results.

After adjusting for the additional water introduced into the mix with the addition of the EdenCrete<sub>500</sub>, compared with 28 day old control cylinders of the same mix and age but which had no added EdenCrete<sub>500</sub>, the 28 day old concrete cylinders to which EdenCrete<sub>500</sub> was added during production achieved the following improvements:

- 45% Increase in Tensile Strength after 28 days
- 17 % Increase in Compressive Strength after 28 days
- 53% Reduction (Improvement) in Permeability after 28 days

These normalized results were obtained from 28 day old concrete made using a moderate strength concrete mix. Tests at 56 days are yet to be undertaken. Results obtained at 28 days and 56 days are the data used in defining most concrete performance standards.

##### **First Australian Tests of EdenCrete<sub>500</sub>**

The first Australian tests, being conducted by a major global concrete and cement company, on EdenCrete<sub>500</sub> enriched concrete commenced. Results after 28 days included:

- An average 38% increase in compressive strength in a particular concrete; and
- An average 27.8% increase in flexural strength in another concrete mix.

In each case these results are an average increase (over two samples that were tested) in the resulting strength in each particular concrete mix. The 56 day results are still awaited.

Whilst the Australian results were not uniform and varied across the range of concrete mixtures to which varying proportions of EdenCrete had been added, encouragingly the overall trend appears to confirm that both the proportional compressive strength and flexural strength of the tested concrete mixes increased as the added amount of EdenCrete increased. This conclusion is greatly supported by the results achieved in the first US field trial detailed above.

#### *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 well-qualified 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 to partially fund this project. This collaboration project follows earlier preliminary encouraging results from the addition of Eden's carbon nanotubes into polypropylene.

### ***CNT Enriched Polymers and Plastics Project in India***

An Indian company has undertaken preliminary trials using Eden's nanotubes in polymer coatings, polymer composites, anti-corrosive coatings and antifouling coatings with encouraging results. Follow-up discussions regarding a possible collaboration are now proposed.

### ***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 or applied for other similar purposes, 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.*

## **OPTIBLEND™ DUAL FUEL SYSTEM (EDEN 100%)**

### ***US Optiblend™ Progress***

Hythane Company, the wholly owned US subsidiary of Eden, received purchase orders for 9 Optiblend™ dual fuel system units totalling US\$184,000 (A\$233,000) during the quarter.

After more than doubling the value of US sales for OptiBlend™ for calendar year 2014 over the previous year to over US\$2.22 million, Hythane Company believed that this product had a strong outlook for further growth in calendar year 2015.

However a significant fall in the price of oil during the past four months has led to a severe decline in US OptiBlend™ sales. If and when oil prices rise a growth sales into the 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.

Hythane Company is continuing to work on establishing 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 received no new orders for Optiblend™ systems in India, but tendered on a reasonably substantial opportunity to supply dual fuel to the emerging Indian shale gas exploration market.

Additionally, India has many hundreds of thousands of generators that are used for back-up or prime power generation. Further, Cummins is a major supplier of these generators into the Indian market. If the gas is available and the economics are favourable, Eden remains hopeful that India could become a major market for Optiblend™.

### ***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***

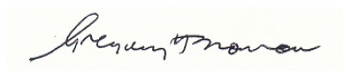
Despite no significant progress having been made during the quarter on any of these Indian Hythane™ projects, there is a reasonable continuing level of interest from the Indian Government in hydrogen projects. Eden remains hopeful that these projects may ultimately proceed particularly if Eden can utilise low cost hydrogen produced as a by-product from its pyrolysis project to produce carbon nanotubes and nanofibres, and Eden will continue to follow up on these projects as they emerge.

### **UK GAS PROJECT**

Eden executed a formal conditional merger agreement with its existing UK gas and petroleum Joint Venture partners. The conditions precedent to the Eden and UKOG formal Merger Agreement were not all satisfied by the extended Longstop Date, 9 December 2014. In this circumstance the conditional Merger Agreement will still continue unless and until such time that it is terminated at any time by either party. Discussions have been continuing between the parties since December 2014 and it is now highly unlikely that this merger will proceed on the terms previously announced, although ongoing discussions with UKOG are continuing in difficult market conditions.

#### ***The UK Gas Project Sale Assets***

*The sale assets, held by Eden’s wholly owned UK subsidiary, comprise Eden’s 50% joint venture interests in 13 Petroleum and Development Licences (PEDLs) in England and South Wales (“Eden’s UK Licence Interests”). Previously the estimated in ground gas resources for 17 PEDLs were reported to the ASX on 30 May 2011. During a previous quarter four of these PEDLs (one in South Wales and the other three in Bristol/Somerset and Kent) were surrendered due to both environmental and social reasons and the likelihood that the terms of these four licences would not have been extended by DECC at 30 June 2014, the expiry date of the first term of each of these licences.*



**Gregory H Solomon**

*Executive Chairman*

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

## Interests in Tenements

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%		
PEDL227	UK	50%		
PEDL249	UK	50%		
PEDL250	UK	50%		
PEDL252	UK	50%		

# Appendix 5B

## Mining exploration entity quarterly report

Introduced 01/07/96 Origin Appendix 8 Amended 01/07/97, 01/07/98, 30/09/01, 01/06/10, 17/12/10

Name of entity

EDEN ENERGY LTD

ABN

58 109 200 900

Quarter ended ("current quarter")

31 March 2015

### Consolidated statement of cash flows

<b>Cash flows related to operating activities</b>		<b>Curent quarter \$A'000</b>	<b>Year to March (9 months) \$A'000</b>
1.1	Receipts from product sales and related debtors	131	1,882
1.2	Payments for (a) exploration & evaluation	(1)	(141)
	(b) development	-	-
	(c) production	-	-
	(d) administration	(99)	(296)
	(e) other	(715)	(2,510)
1.3	Dividends received	-	-
1.4	Interest and other items of a similar nature received	-	1
1.5	Interest and other costs of finance paid	-	-
1.6	Income taxes paid	-	-
1.7	Other (provide details if material)	-	-
<b>Net Operating Cash Flows</b>		<b>(684)</b>	<b>(1,064)</b>
<b>Cash flows related to investing activities</b>			
1.8	Payment for purchases of: (a) prospects	-	-
	(b) equity investments	-	-
	(c) other fixed assets	-	(14)
1.9	Proceeds from sale of: (a) prospects	-	-
	(b) equity investments	-	-
	(c) other fixed assets	-	-
1.10	Loans to other entities	-	-
1.11	Loans repaid by other entities	-	-
1.12	Other (provide details if material)	-	-
<b>Net investing cash flows</b>		<b>-</b>	<b>(14)</b>
1.13	Total operating and investing cash flows (carried forward)	<b>(684)</b>	<b>(1,078)</b>

**Notes**

1.2e Other – Payments to suppliers and employees by Eden's wholly owned subsidiaries; Eden Energy India Pvt Ltd and Hythane Co LLC which are trading companies and these payments mainly consist of payments for cost of goods sold, research & development, inventory and overheads.

**Appendix 5B**  
**Mining exploration entity quarterly report**

1.13	Total operating and investing cash flows (brought forward)	(684)	(1,078)
	<b>Cash flows related to financing activities</b>		
1.14	Proceeds from issues of shares, options, etc.	1,196	1,196
1.15	Proceeds from sale of forfeited shares	-	-
1.16	Proceeds from borrowings	350	900
1.17	Repayment of borrowings	(650)	(650)
1.18	Dividends paid	-	-
1.19	Other (provide details if material)	-	-
	<b>Net financing cash flows</b>	896	1,446
	<b>Net increase (decrease) in cash held</b>	212	368
1.20	Cash at beginning of quarter/year to date	344	160
1.21	Exchange rate adjustments to item 1.20	24	52
1.22	<b>Cash at end of quarter</b>	580	580

**Payments to directors of the entity and associates of the directors**

**Payments to related entities of the entity and associates of the related entities**

	Current quarter \$A'000
1.23 Aggregate amount of payments to the parties included in item 1.2	55
1.24 Aggregate amount of loans to the parties included in item 1.10	-

1.25 Explanation necessary for an understanding of the transactions

Legal Fees were paid during the quarter to a firm of which Mr GH Solomon and Mr DH Solomon are partners.  
Management Fees, as per agreement, were paid during the quarter to a company of which Mr GH Solomon and Mr DH Solomon are directors.

**Non-cash financing and investing activities**

2.1 Details of financing and investing transactions which have had a material effect on consolidated assets and liabilities but did not involve cash flows

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2.2 Details of outlays made by other entities to establish or increase their share in projects in which the reporting entity has an interest

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+ See chapter 19 for defined terms.

**Appendix 5B**  
**Mining exploration entity quarterly report**

**Financing facilities available**

	Amount available \$A'000	Amount used \$A'000
3.1 Loan facilities	-	-
3.2 Credit standby arrangements	-	-

**Estimated cash outflows for next quarter**

	\$A'000
4.1 Exploration and evaluation	-
4.2 Development	-
4.3 Production	-
4.4 Administration	100
4.5 Other	500
<b>Total</b>	<b>600</b>

**4.5 Other – Payments to suppliers and employees by Eden's wholly owned subsidiaries; Eden Energy India Pvt Ltd and Hythane Co LLC which are trading companies and these payments relate to payments for cost of goods sold, research & development, inventory and overheads. These estimated outflows will be partially offset by cash receipts from sales of goods and services.**

**Note – Subsequent to the end of the quarter Eden raised a further \$286,750 through the placement of the some of the shortfall from the recent rights issue.**

**Reconciliation of cash**

Reconciliation of cash at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts is as follows.	Current quarter \$A'000	Previous quarter \$A'000
5.1 Cash on hand and at bank	580	344
5.2 Deposits at call	-	-
5.3 Bank overdraft	-	-
5.4 Other (provide details)	-	-
<b>Total: cash at end of quarter</b> (item 1.22)	<b>580</b>	<b>344</b>

**Changes in interests in mining tenements**

	Tenement reference	Nature of interest (note (2))	Interest at beginning of quarter	Interest at end of quarter
6.1 Interests in mining tenements relinquished, reduced or lapsed				
6.2 Interests in mining tenements acquired or increased				

+ See chapter 19 for defined terms.



**Appendix 5B**  
**Mining exploration entity quarterly report**

**Issued and quoted securities at end of current quarter**

Description includes rate of interest and any redemption or conversion rights together with prices and dates.

		Total number	Number quoted	Issue price per security (see note 3) (cents)	Amount paid up per security (see note 3) (cents)
7.1	<b>Preference securities</b> (description)				
7.2	Changes during quarter (a) Increases through issues (b) Decreases through returns of capital, buy-backs, redemptions				
7.3	<b>*Ordinary securities</b>	879,831,871	879,831,871		
7.4	Changes during quarter (a) Increases through issues (b) Decreases through returns of capital, buy-backs	120,630,833	120,630,833	\$0.01	\$0.01
7.5	<b>*Convertible debt securities</b> (description)				
7.6	Changes during quarter (a) Increases through issues (b) Decreases through securities matured, converted				
7.7	<b>Options</b> (description and conversion factor)	3,375,000 120,630,833	NIL 120,630,833	Exercise price 2.5 cents 3 cents	Expiry date 20 November 2015 30 September 2018
7.8	Issued during quarter	120,630,833	120,630,833	3 cents	30 September 2018
7.9	Exercised during quarter				
7.10	Expired during quarter				
7.11	<b>Debentures</b> (totals only)				
7.12	<b>Unsecured notes</b> (totals only)				

+ See chapter 19 for defined terms.

## Compliance statement

- 1 This statement has been prepared under accounting policies which comply with accounting standards as defined in the Corporations Act.
- 2 This statement does give a true and fair view of the matters disclosed.

Sign here:



(Company secretary)

Date: 30 April 2015

Print name: Aaron Gates

## Notes

- 1 The quarterly report provides a basis for informing the market how the entity's activities have been financed for the past quarter and the effect on its cash position. An entity wanting to disclose additional information is encouraged to do so, in a note or notes attached to this report.
- 2 The "Nature of interest" (items 6.1 and 6.2) includes options in respect of interests in mining tenements acquired, exercised or lapsed during the reporting period. If the entity is involved in a joint venture agreement and there are conditions precedent which will change its percentage interest in a mining tenement, it should disclose the change of percentage interest and conditions precedent in the list required for items 6.1 and 6.2.
- 3 **Issued and quoted securities** The issue price and amount paid up is not required in items 7.1 and 7.3 for fully paid securities.
- 4 The definitions in, and provisions of, *AASB 6: Exploration for and Evaluation of Mineral Resources* and *AASB 107: Statement of Cash Flows* apply to this report.
- 5 **Accounting Standards** ASX will accept, for example, the use of International Financial Reporting Standards for foreign entities. If the standards used do not address a topic, the Australian standard on that topic (if any) must be complied with.

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+ See chapter 19 for defined terms.