Newsletter NewCO2Fuels

Issue 1 | September 2012

Introducing NCF

NewCO2Fuels (NCF) is a newly established Israeli company incepted in June 2011 by the initiative and foresight of Australian listed, renewable energy company, Greenearth Energy Ltd (ASX:GER), and an Israel based group of experienced scientists, engineers, technology project developers and managers with a single aim of turning our global CO_2 challenge and diminishing petroleum reserves into a worldwide opportunity.

NCF was founded by the need to solve two problems of truly global proportions, our current and future CO_2 emissions challenge as well as the lessening of worldwide oil reserves. Each and every 60 seconds, 32,000 tonnes of CO_2 are emitted into our atmosphere*, and while that statistic may not sound alarming, the fact is that CO_2 emissions are rising at unprecedented levels. Simultaneously, known oil reserves are anticipated to serve global transportation demands for less than 45 years, threatening energy security of nations and the wellbeing of the world's population.

NCF as an entity brings together market access and management capabilities of one of Australia's most respected listed renewable energy companies and the entrepreneurship, innovation, engineering and management skills of a group of dedicated professionals based at the Rehovot Science Park, adjacent to the Weizmann Institute of Science (WIS). This NCF partnership conducts the development of an innovative and breakthrough technology providing a revolutionary, cost effective solution to the two global concerns. NCF product uses a proprietary technology, generating liquid fuels or electricity, by using solar energy and CO_2 emissions and water as feedstock.

The technologies upon which the development is based were licensed, on an exclusive worldwide basis, from the Weizmann Institute of Science where they were developed over the last ten years.

*United Nations Statistics Data Division

Challenges The World Faces

CO_2 Emissions

CO_2 emissions have become a global concern over the last few decades. Atmospheric concentration levels of CO_2 have reached record highs and global CO_2 emissions are increasing at alarming levels.

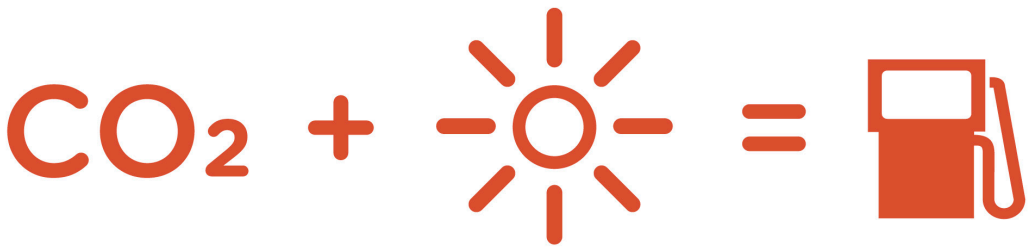
CO_2 emissions are expected to keep rising as energy consumption increases everywhere, especially in developing countries.

While the impact of CO_2 emissions on global warming may be debatable, there is no doubt that the increase in CO_2 emissions has breached the natural balance of oxygen and CO_2, making it an important topic on government agendas worldwide.

Fossil Fuels

Global energy consumption continues to grow with global population growth, infrastructure expansion and the further development of emerging economies such as India and China. Conversely, fossil fuels, which provide more than 85% of global energy needs, are limited. Although new sources are frequently discovered, the current oil reserves of about 1.5 trillion barrels covers world energy demand only for the next 45 years.

Energy security as well as the increasing oil price fluctuation of the last 30 years, makes the development of independent, economical and storable fuel a vital global objective.



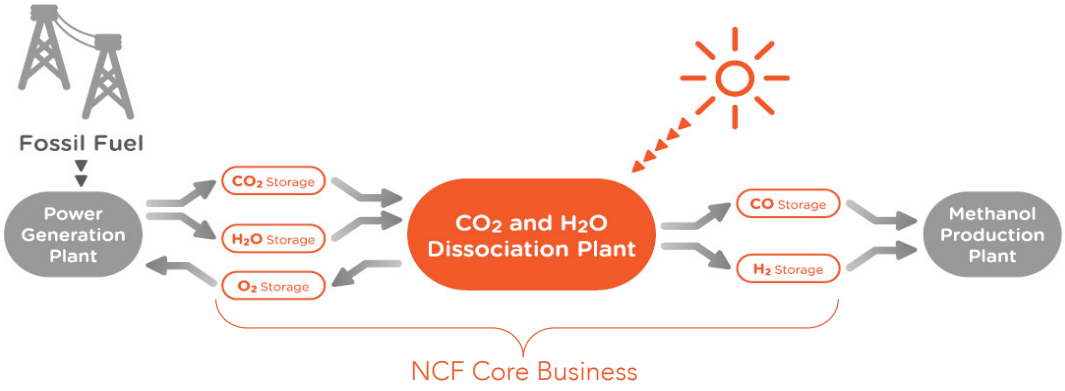
The Solutions NewCO2Fuels Proposes

NCF solutions are based on technology successfully developed in Israel by Professor Jacob Karni and his group at the WIS and proven in laboratory trials. The technology concept involves a new method of using concentrated solar energy for the dissociation of carbon dioxide (CO_2) to carbon monoxide (CO) and oxygen (O_2). Simultaneously, the same device can dissociate water (H_2O) to hydrogen (H_2) and oxygen (O_2). The CO, or the mixture of CO and H_2 (called Syngas), can then be used as gaseous fuel (e.g. in power plants), or converted to liquid fuel (e.g. methanol), which has the potential to be stored, transported and used in motor vehicles. The oxygen produced in the process can be used in the combustion of the clean fuel, for example in advanced combustion methods such as oxy-fuel combustion in power plants.

From Challenge

To Opportunity

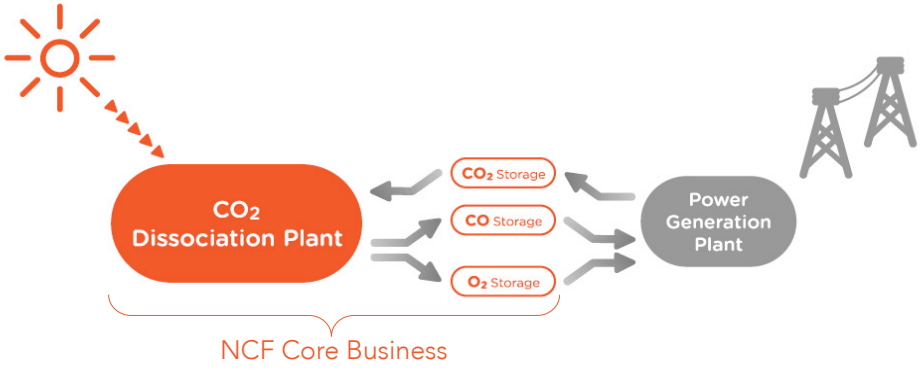
Liquid Fuel Production



Solution benefits:

- Production of liquid fuel, as alternative to petroleum based fuels, for transportation and electricity generation
- Solar energy driven process
- Elimination of CO_2 emissions from power plants

Emission Free Electricity Generation

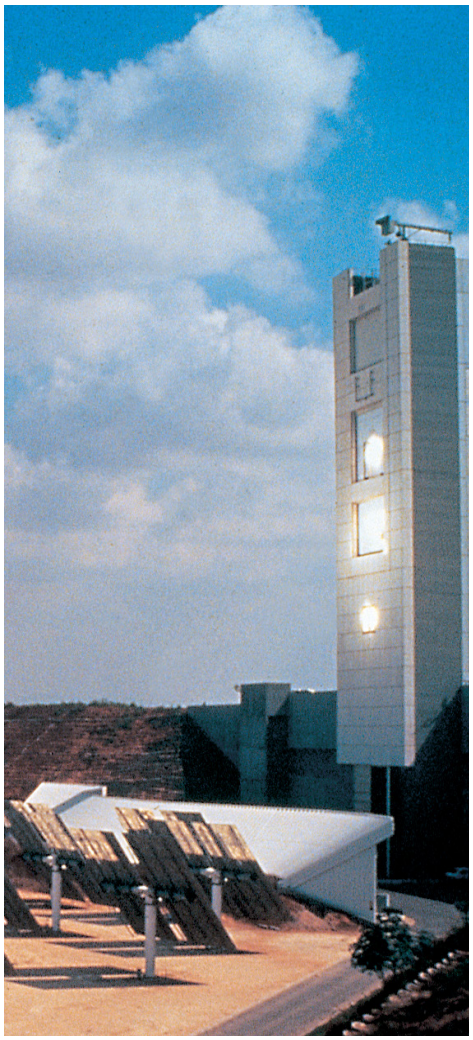


Solution benefits:

- Higher efficiency of power generation by using the solar energy to drive large size power blocks
- Low cost and straightforward energy storage
- Zero CO_2 emissions power generation

The Weizmann Institute of Science

The technology that NCF licensed was developed in the Department of Environmental Sciences and Energy Research, Faculty of Chemistry, Weizmann Institute of Science. The Department's main goals are to promote, coordinate, and support research on all aspects of environmental research. Research in the department includes both experimental/ field and theoretical studies focused on understanding the complex inter-relationships among the major Earth systems, and on the human need for non-polluting energy sources.



The Weizmann Institute of Science, in Rehovot, Israel, is one of the world's leading multidisciplinary research institutions. The Institute serves as a meeting place for scientists from different disciplines, setting the stage for multidisciplinary collaborations and the emergence of new research fields. To encourage this creative activity, the Institute has created some 50 multidisciplinary research institutes and centers.

Marketing and commercialization of all Intellectual Property is accomplished by Yeda Research and Development Co. Ltd, the Institute's commercial arm. The Institute's wishes and priorities in the commercialization process are implemented through the Vice President for Technology Transfer.

For more information please visit:
www.weizmann.ac.il

Our Partners

Greenearth Energy Limited is an Australian, ASX listed, diversified renewable energy company that has interests in conventional geothermal resources in Australia, Indonesia and the wider Pacific Rim.

In May 2007, the Company was awarded three geothermal exploration permits (GEP's) 10, 12 and 13 by the Victorian Government covering 18,795 km2. The Company currently has two project focus areas namely, the Gippsland Onshore Project (GEP's 12 and 13) and the Geelong Geothermal Power Project (GGPP) (GEP 10). Greenearth Energy's domestic geothermal exploration projects are all adjacent to substantial brown coal fired electricity generation infrastructure, strategically positioned for future deployment of either geothermal or NewCO2Fuels demonstration technology.

Greenearth Energy has, in response to market opportunities domestically and internationally, recently expanded its portfolio to include a number of aligned renewable and energy efficiency technologies including;

NewCO2Fuels: (Israel)

NCF is developing an innovative and breakthrough technology providing a revolutionary, cost effective solution to two global concerns; CO_2 emissions and diminishing liquid fuel reserves. Our product uses a proprietary technology, generating liquid fuels or electricity, by using solar energy and CO_2 emissions and water as feedstock.

Metrolight: (Israel)

Greenearth Energy Efficiency offers energy efficiency solutions to the Australian market and wider Pacific Rim. The emphasis is on energy efficient industrial and commercial lighting systems utilizing Metrolight's smart High Intensity Discharge (HID) lighting technology products.

Greenearth Energy Efficiency offers a complete solutions approach to implementing energy efficiency solutions including project management, custom installation and a range of lighting efficiency technologies and products from Metrolight Israel.

Greenearth Energy listed on the Australian Stock Exchange (ASX) on the 4 February 2008 (ASX :GER)

Greenearth Energy: Energy Security in a Carbon Constrained World

News Around the World

DOD Must Have Petroleum Fuel Alternatives, Official Says

Smart investing and less reliance on petroleum-based fuels will help ensure an agile, lethal and adaptable combat force, and ultimately, national security, a senior Pentagon official said here today during an Energy Department-hosted conference.

http://www.defense.gov/news/newsarticle.aspx?id=117084

Australia scraps carbon floor price, links ETS with EU

The Australian government has announced it will scrap the proposed floor price of its emissions trading scheme as part of a deal to link the scheme with the European Union, and take some of the political heat about the carbon pricing debate.

http://reneweconomy.com.au/2012/australia-scraps-carbon-floor-price-links-ets-with-eu-16391

Renewable Energy Sees a Record $257 Billion of Investment in 2011

The UN Environment Program (UNEP) announced in a new report that in 2011 global renewable energy investment reached a record $257 billion; a 17 percent increase from 2010, and a 600% increase over the past seven years.

http://oilprice.com/Alternative-Energy/Renewable-Energy/Renewable-Energy-Sees-a-Record-257-Billion-of-Investment-in-2011.html

Israel Corp. moving into solar thermal power

The company is in advanced talks to acquire a venture to build a solar thermal power station at Mashabei Sadeh.

http://www.globes.co.il/serveen/globes/docview.asp?did=1000766384&fid=1725

CONFERENCES AND EVENTS

Global Cleantech 100 Summit & Gala
Washington, DC
1-2 October 2012
http://events.cleantech.com/global100

All-Energy Australia
Melbourne Australia
10-11 October 2012
http://www.all-energy.com.au/

Eilat-Eilot Renewable Energy and Innovation Conference
Eilat, Israel
27 - 29 November 2012
http://www.eilatenergy.org/

4th ESTELA Solar Thermal Electricity Industry Forum
Nicosia, Cyprus
13 December 2012
http://www.estelasolar.eu

InterSolar North America
San Francisco, USA
8 - 11 July 2013
http://www.intersolar.us

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