Newsletter NewCO$_2$Fuels

Issue 6 | June 2014

NCF
New CO2 Fuels

Message from the CEO

Dear readers

It has been a while since our last newsletter and a lot of exciting events have taken place during the last six months. The most important event is the successful completion of the technology proof of concept which demonstrated the ability of NCF technology to convert CO_2 into CO using both solar energy and excess heat from industry.

In addition to successful completion of the technology demonstrator, this accomplishment demonstrates the cutting-edge knowhow and outstanding skills of the NCF team, who have successfully designed, built, and operated two very complex apparatus over the last 2.5 years. They were able to harness potentially unstable solar radiation to produce heat at temperatures higher than 1000°C, as well as simulate the waste heat conditions existing in today's energy-intensive industries to drive NCF's innovative process. I am personally very proud and happy to be able to work with such a team and would like to take this opportunity to thank them for all the efforts, long hours, amazing teamwork, and excellent judgment they have shown during the last 2.5 years. It is important to emphasize that this achievement would not have been accomplished without the vision of the late Dr. Les Erdi, who gave life to NCF; the dedication of ErdiFuel management; and the loyal and devoted support of the leaders at Greenearth Energy during this period.

Completing the two proof of concept configurations was a very important milestone for NCF, as we are now able to show the market and our future customers that our technology is proven. We have demonstrated that we are able to take waste gas (CO_2), defined as one of the key drivers of climate change, and excess heat from energy-intensive industries or renewable energy from the sun and create a high quality, high value fuel in a financially viable way. This is a true game changer in the way mankind produces clean alternative fuels and chemicals.

These events also contributed to a reinforced partnership with one of our main shareholders, Greenearth Energy (ASX:GER), as its management decided to further increase its commitment to NCF with additional investment. This is an important step for NCF as it demonstrates the strong commitment of our current shareholders to NCF goals and global business opportunities.

Enjoy your reading.

Regards,
D. Banitt

Dudi (David) Banitt
CEO

NewCO_2Fuels Technical Updates

NCF is very pleased to announce it has successfully concluded its technology proof of concepts, driven by both excess heat and solar radiation in two separate setups. In passing these two tests, NCF has demonstrated that the technology effectively dissociates CO_2 into CO and O_2 in two different heating environments at a rate that enables the system to be a commercially viable product. Performance analysis of the tests conducted with both configurations indicates that operation stability, processing rate, and efficiency were all at or above planned levels. Both tests demonstrated further progress in the NCF technology as well as its commercial scaling-up methodology, where a simple increase in the number of internal dissociation elements can enable NCF to reach industrial-capacity levels. These proof of concepts show the great potential of the NCF system, which facilitates the production of clean and renewable alternative fuels and chemicals using CO_2 emitted from industrial processes as its feedstock.

"Successfully completed our Solar and Waste heat proof of concepts."

Waste Heat Proof of Concept

During the second week of March, we completed the Stage 2 testing of the waste heat proof of concept, further proving the viability of our CO_2 dissociation technology. During this stage, we created heat in our lab simulating the excess heat available in energy-intensive industries such as steel and gasification. Using this generated heat, we successfully dissociated CO_2 with our apparatus at a dissociation rate that is 800 times higher than the original laboratory results, while considerably reducing the material cost. The NCF team conducted continuous tests run over 100 hours, proving the technology stability and reaching a converting ratio of ~15kg CO_2 into ~10kg of CO and 5kg oxygen (O_2) per day. This step was vital for NCF to show current and future partners in the heavy energy industry that this solution is viable and that by integrating NCF's system within their facilities they could improve their overall plant efficiencies, turning their CO_2 and heat emissions into a profitable product.

Solar Proof of Concept

Two months after the successful runs of the waste heat proof of concept, NCF's team finished all preliminary tests regarding the solar proof of concept, where the heat required for the process is generated by concentrated solar radiation (thermal energy), and successfully completed its first run to dissociate CO_2 into CO and oxygen. NCF's system is located on the 12th floor of the solar tower of the Weizmann Institute of Science in Israel, where it is able to utilize the solar tower facilities to generate high temperature heat (above 1000°C) in its carefully designed receiver using the sun. This hot working fluid is then transferred to NCF's proprietary reactor where the CO_2 dissociation takes place. The test performed very effectively and the results exceeded our expectations for this stage, in line with the excess heat configuration proof of concept. The solar proof of concept is a very important step as it demonstrates the ability to create fuel and chemicals using a renewable and abundant source of energy.

Waste heat driven prototype

Solar operated proof of concept in the Solar Tower

Intensified Australian Ties

In June 2014, Greenearth Energy provided additional investment into NCF, showing further confidence in NCF's team and its ability to continue the development of the technology while achieving key milestones. This additional funding will go towards assisting the team in proceeding with its next stage of development. This investment will go towards the design, fabrication, and testing of commercial-scale reactors to be deployed in a demonstration plant to further validate the feasibility of NCF's system with potential customers while showing the cost effectiveness of our product. Further funds will be required to complete the next steps of our development.

Intensified Ties with the Industry

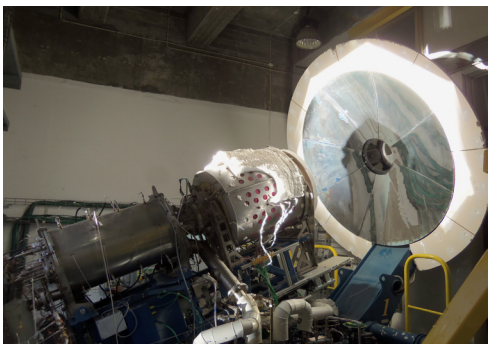
As a business, we provide a disruptive technology within sectors dominated by global players. Subsequently, we see an opportunity to partner with industry for both pilot developments and longer term collaborations as a quicker route to market and to develop a successful product and company. For this reason, the past 12 months we have looked for key sector partners and alliances which have now developed in initial two who will provide distinct paths to market and ongoing proof of our technology.

- We have signed an MOU with one of the world's largest steel companies and an international engineering firm to set up a pilot to demonstrate NCF's system integration with the steel industry, where the required heat will be extracted from excess heat sources at the facility.
- We have also established a collaboration agreement with a Europe-based global conglomerate to partner on product development for the integration of NCF product in other industries.

Both affiliations reaffirm the interest of established industries in the potential of the NCF product and their willingness to assist NCF in pushing the development further and proving its performance in the industrial arena.

Over the last year, the NCF team has conducted discussions with many players in different industries across the heavy energy-intensive markets in order to better understand the potential of NCF's system in these industries, and has pinpointed several industries with a vast amount of excess heat. These are industries such as steel, carbon-based chemicals, glass, and carbon-based products created with gasification technologies. Each of these industries represents enormous potential markets for NCF. NCF systems can utilize the unused heat of these industries to produce high value products from their waste CO2 and offer an additional revenue stream. NCF is working closely with these industries to further understand how its technology can be integrated with new or existing facilities and to better understand the needs of each industry.

Building the reactor at our facility



Solar operated proof of testing in the Solar Tower

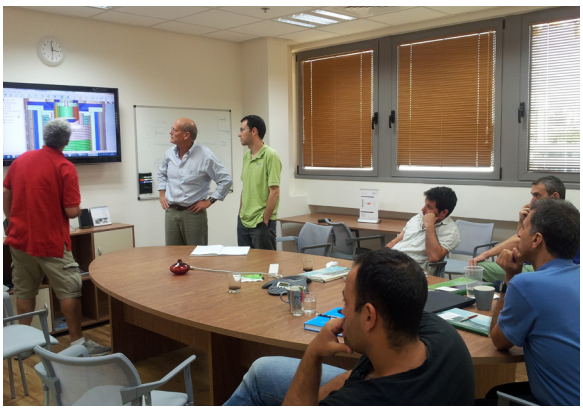
Business Development on the Go

NCF was invited to and presented the NCF project at the following events:

- Cleantech forum San Francisco (U.S.A.), March 2014
- Cleantech forum Stockholm (Sweden) - May 2014

In the News

- BLOOMBERG NEWS - NewCO2Fuels Seeks Funding for Trial Plant to Turn CO2 Into Fuel
  http://www.businessweek.com/news/2014-06-18/newco2fuels-seeks-funding-for-trial-plant-to-turn-co2-into-fuel
- GEEKTIME - 32k tons of CO2 is produced every minute. NewCO2Fuels says it can turn that into cheaper fuel
  http://www.geektime.com/2014/06/17/32k-tons-of-co2-is-produced-every-minute-newco2fuels-says-it-can-turn-that-into-cheaper-fuel/
- ENERGYBUSINESSNEWS - New milestones for Greenearth technology - May 30, 2014
  http://www.energybusinessnews.com.au/energy/coal-and-gas/new-milestones-for-greenearth-technology/
- THE AUSTRALIAN - Greenearth moves closer on CO2-to-fuel - May 29, 2014
  http://www.theaustralian.com.au/business/latest/greenearth-moves-closer-on-co2-to-fuel/story-e6frg90f-1226936261960
- GLOBES : "A glimpse at 3 Israeli companies that want to change the energy market" (Hebrew)- May 17, 2014
  http://www.globes.co.il/news/article.aspx?did=1000938302
- ISRAEL NEWTECH - NewCO2Fuels Transforms Water Into Fuels - April 30, 2014
  http://israelnewtech.com/2014/04/new-co2-fuels-transforms-water-fuels/
- THE JERUSALEM POST - Israeli startup aims to transform CO2, water into fuel - April 29, 2014
  http://www.jpost.com/Enviro-Tech/Israeli-startup-aims-to-harness-excess-industrial-heat-to-transform-CO2-water-into-fuel-350788
- ISRAEL NEWTECH - Israeli Cleantech Companies Head to U.S. for Investment Roadshow - March 10, 2014
  http://israelnewtech.com/2014/03/israeli-cleantech-companies-head-u-s-investment-roadshow/
- TERUTALK - NCF Completes Stage 1 Proof of Concept to Convert CO2 to Fuels - January 20, 2014
  http://www.terutalk.com/January-2014.html#0113-1
- CLEANTECHNICA - NewCO2Fuels Uses Sunlight To Make New Fuels From Old Emissions - January 20, 2014
  http://cleantechnica.com/2014/01/20/newco2fuels-uses-sunlight-for-carbon-capture/
- REUTERS - Israel's new motor fuels strategy leans on gas - December 24, 2013
  http://www.reuters.com/article/2013/12/24/us-israel-cars-fuels-idUSBRE9BN0BC20131224



Meeting of the tech team at NCF's headquarter

Promo video shooting at NCF's headquarter

News Around the World

Obama to unveil historic climate change plan to cut US carbon pollution

President Barack Obama will unveil a plan that will cut carbon pollution from power plants and promote cap-and-trade, undertaking the most significant action on climate change in American history.
http://www.theguardian.com/environment/2014/may/29/obama-unveil-historic-climate-plan-carbon-pollution

China to scrap millions of cars to ease pollution

The Chinese government has announced plans to take up to 6 million vehicles that don't meet emission standards off the roads by the end of the year, in a bid to reduce the country's air pollution problems. http://www.theguardian.com/environment/chinas-choice/2014/may/27/china-scrap-millions-cars-reduce-air-pollution

Germany Hits Historic High, Gets 74 Percent Of Energy From Renewables

Germany's impressive streak of renewable energy milestones continued, with renewable energy generation surging to a record portion — nearly 75 percent — of the country's overall electricity demand. With wind and solar in particular filling such a huge portion of the country's power demand, electricity prices actually dipped into the negative for much of the afternoon
http://oilprice.com/Alternative-Energy/Renewable-Energy/Germany-Hits-Historic-High-Gets-74-Percent-Of-Energy-From-Renewables.html

China to limit carbon emissions for first time, climate adviser claims

China, the world's biggest greenhouse gas emitter, will limit its total emissions for the first time by the end of this decade, according to a top government advisor.
http://www.theguardian.com/environment/2014/jun/03/china-pledges-limit-carbon-emissions

CONFERENCES AND EVENTS

2014 Pittsburgh Coal Conference
Pittsburg, U.S.A.
6 - 9 October 2014
http://www.engineering.pitt.edu/PCC.aspx?id=2147488856

Global Cleantech 100 Week 2014
Washington DC, U.S.A.
6 - 7 October 2014
events.cleantech.com/sanfrancisco

Eilat-Eilot Green Energy
Eilat, Israel
7 - 9 December 2014
http://www.eilatenergy.org/

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