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ISRAELI BREAKTHROUGH WITH CO₂ TO FUEL TECHNOLOGY

- NewCO₂Fuels in Israel (NCF) completes stage 1 testing, proving the technologies commercial excess heat configuration
- NCF on track for stage 2 testing proving the 100% renewable solar driven configuration
- The NCF team's ongoing technical accomplishments have resulted in order of magnitude improvements in the cost efficiency of the NCF technology
- NCF gears up to move onto the development of commercial-scale reactors and systems in the coming months

Greenearth Energy Ltd is pleased to announce that in the final weeks of December 2013 the team at NewCO₂Fuels in Israel (NCF) completed stage 1 testing of the proof of concept system. In passing the Stage 1 testing, NCF now has demonstrated the technology that successfully, and effectively, dissociates CO₂ into CO and oxygen in a heating environment, simulating the industrial waste heat sources that will be used as one of two energy sources in the commercial product.

Importantly, the dissociation rate of the system was increased by a factor of 200 and the cost was reduced by a factor of 34, relative to the original dissociation apparatus demonstrated in 2010 at the laboratories of the Weizmann Institute of Science in Israel.

The dissociation system is based on an innovative design and constructed using readily manufacturable state-of-the-art components and materials.

During January and February of 2014, the stage 2 testing, which encompasses two additional targets, is on track to further establish the final proof of concept:

- increasing the dissociation rate by a factor of 4, an 800 fold increase in the dissociating rate **and**
- **driving the system using a solar based heat source (100% renewable).**

The completion of Stage 1 of the proof of concept is a major milestone, proving the feasibility of the technology and its associated engineering. Subsequently, it defines a clear path to commercial product and economic viability of the company. Upon completion of Stage 2 testing, NCF will have proven both paths to the commercial product.

Based on the developments to date, management of NCF is confident the team will achieve Stage 2 testing and quickly move onto the development of commercial-scale reactors and systems in the coming months.

CEO of NewCO₂Fuels, David Banitt said; "Taking a brand new technology from the academic laboratories and an embryonic system concept and bringing them into an operational, multidisciplinary instrument is a complicated and delicate process. It involves innovation, competence and experience in a large number of disciplines such as materials, mechanics, heat and mass transfer, physics, chemistry and more. It also requires highly coordinated work and managerial proficiency to make them operate in concert with complicated tradeoffs involving technical, cost and time aspects.

"Taking all these into consideration, one can value the magnitude and significance of the accomplishment of Stage 1 of the proof of concept. It proves not only the viability of the technology but also the capabilities and competencies of the company's staff.

"This accomplishment is the apex of a long list of cutting edge achievements made by the company. The staff and the knowledge gained from developing the technology form the exclusive knowhow of NCF that shall enable them to overcome any further challenges it may face to bring the product to the market.

"Since the very beginning of its activity, the company has built awareness and presented its product to a large number of prospective customers and partners around the globe who are enthusiastic about NCF's potential. We are now more confident than ever before that with our staff and partners, the path to a profitable product is clear and sound".

Managing Director of Greenerth Energy, Samuel Marks, said; "This is an extremely exciting step towards our final goal of not only proving the science behind the CO₂ disassociation process at scale, but also its financial viability. This now proven concept has the potential to create, quite literally, a paradigm shift in the way society views and deals with our global CO₂ challenges.

"The effort of the team at NCF, led by David Banitt, along with the ongoing research under the supervision of Professor Jacob Karni at the Weizmann Institute, should be commended. To complete this enormous task in such a relatively short period of time, overcoming difficult technical challenges never faced before, while delivering results superior to original estimations, is a great achievement.

"We would also like to take this time to acknowledge the late Dr Les Erdi, whose vision to support both Greenerth and NCF in the early stages of this product was a major factor in its success to-date.

"We are very pleased with these results and look forward to seeing the completion of the Stage 2 Solar testing in the coming months."



Samuel Marks
Managing Director
Greenerth Energy Limited

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From challenge to opportunity

About NewCO2Fuels

NewCO2Fuels(NCF) is an Israeli start-up company which was formed in 2011 by a group of scientists and entrepreneurs with the support of Greenerth Energy Ltd and the Erdi Group. NCF was formed to develop and commercialize an innovative system to profitably produce fuels from CO₂ and water, using renewable high temperature heat from solar or excess heat from industry. The system is based on a technology previously developed at the Weizmann Institute of Science and exclusively licensed to NCF.

Review video at the attached link for further information -
http://www.youtube.com/watch?v=vH-YZdqB_SE

NewCO2 Fuels Website - <http://newco2fuels.co.il/>

About Greenerth Energy Ltd

Greenerth Energy Limited is a diversified Australian-based renewable energy company with interests in technology-focussed solutions in the energy efficiency and CO₂ to fuel conversion markets as well as conventional geothermal resources in Australia and the wider Pacific Rim.

In 2011 Greenerth Energy secured an exclusive worldwide Research and License Agreement via NCF for a revolutionary technology that has the ability to convert CO₂ emissions to fuel. The group's investment is represented by a 50% ownership in NewCO₂ Fuels Ltd (Israel). As described in the June 2012 and June 2013 annual reports, an option deed has been entered into which grants Erdi Fuels Pty Ltd the right to acquire the group's 50% ownership of NewCO₂ Fuels Ltd. The group retains an ongoing royalty stream. The current ownership structure of this investment is currently in negotiations.

Greenerth Energy Ltd - <http://www.greenerthenergy.com.au>



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