The Pink Energizer Bunny is Going, Going ...Gone

Recent government announcements have shown it's beyond doubt we're in the middle of a dramatic **energy** storage revolution. The Tories have announced that the electricity market is going to be totally shaken up. This market reformation will permit domestic-scale demand management, and storage. Even the ever-so-sensible IKEA is now flogging home batteries.

In a decade or two, you can look forward to driving an electric car, which could have a two-way flow of energy to the grid (if Nissan gets its way). Your car will use its hefty battery to earn you cash, balancing the grid as it charges. Inside your house, your appliances will switch on and off, to take advantage of moment-by-moment fluctuations in energy prices.

You can play this batteries revolution – and today we're speaking to Scott McGregor of **redT energy**. It's a very interesting firm, because it's one of the only companies that I've had consistent pressure from readers to feature. When you couple this investor interest with the firm's interesting technology, and great timing, it suddenly looks like a very interesting investment opportunity. I'll hand you over to Scott, to explain more.

AL: Let's kick off with your personal story, Scott…

SMG: Before getting involved in the renewable energy space, I acquired an MBA from the London Business School; a Bachelor of Economics from Monash University, Australia; and qualified as a chartered accountant through PWC.

Before joining redT I worked across a number of sectors, including the environmental, mining, finance and technology industries. These roles have involved advising leading corporations in North America, Asia and Europe, and have included finance and development roles for Rio Tinto, Merrill Lynch and Skype.

In November 2015 we chose to change the name from Camco Clean Energy to redT energy, to reflect the company's core focus becoming the commercialisation of its energy storage product. I'd previously overseen the establishment of Camco's clean energy project business, focused on biogas and solar projects; the expansion of its carbon credits business; and led the development of the energy storage technology – now the focus of redT energy. In summary, I transformed the business, from just being Camco, to being a market leader in the energy storage space. Now, I'm CEO of redT energy.

AL: Please can you tell me a bit more about redT energy?

SMG: redT energy develops and supplies durable and robust energy storage machines. This is based on proprietary vanadium redox flow technology for on and off-grid applications. This technology is centred around vanadium's ability to hold different amounts of electrical charge. Pumps and membranes are utilised to separate or bring together differently charged vanadium solutions, charging or discharging electricity.

redT products are perfect for storage renewable energy, as they don't wear out. They earn money for their owners by providing grid services – such as energy trading, frequency response and generating additional revenue by selling electricity back to the local grid.

The technology has been developed over the last 17 years and now offers some of the lowest levelised cost of storage units on the market. We believe that levelised cost of storage is the best indicator of the cost of a technology, as it takes into account maintenance and depreciation of the asset, along with other relevant factors. The industry standard of benchmarking pricing using a $/kWh capacity figure does not tell the whole story.

We do not manufacture conventional batteries. Batteries (such as lead-acid and lithium) degrade over time and cannot be used heavily every day. Our energy storage machines are energy infrastructure with a 25+ year life – they are very different to the consumable, throwaway batteries that power our phones and laptops.

AL: What are the units typically used for?

SMG: Our machines are coupled with renewables, diesel generators, the grid – or a combination of all three.

Alongside renewables, they remove the problem of intermittency – creating reliable, on-demand green energy. This can then compete with conventional coal and gas generation.

Alongside diesel generators, the machines increase efficiency by allowing the generator to run at optimised loads, for a shorter period of time – rather like a hybrid car. By installing renewables alongside generators + storage, fuel costs can be reduced by up to 80% – or removed completely if the generator is no longer required.

Machines can also couple directly with the grid – infront of, or behind the meter. This provides flexibility for the grid – alongside energy trading and arbitrage opportunities.

redT's units are designed for use in a wide range of applications, from commercial and industrial scale, up to multi-megawatt grid/utility scale. Our machines are designed for heavy, industrial-scale use – not domestic applications.

Our energy storage machines have an asset life of 25+ years, and require minimal maintenance over this time. The system electrolyte never degrades, and should retain its value beyond the life of the asset.

To date, we have over 2MWh of machines deployed globally – from an eco-hotel in Johannesburg, to Cornwall's largest energy storage system.

AL: What specific markets and regions are you focusing on?

SMG: We're targeting on-grid connected renewables – largely focusing on the UK, European and Australian markets. We're utilising our machines to provide multiple "stacked" services. These increase site owners' ability to utilise their own renewable generation; and also create opportunities to make additional revenue, by providing balancing services back to the grid.

We're also into off-grid diesel optimisation. Here, we're targeting Sub-Saharan Africa, remote islands, and mining and resource extraction sites. Pairing our systems with a diesel generator will significantly reduce operational costs for asset owners – which is one of the largest costs for project developers in these regions.

AL: What are the benefits of vanadium over other charge-carriers, such as Lithium?

SMG: It's a case of selecting the right technology for your application. Lithium batteries are a good technology – well suited to short duration (less than one-hour discharge), occasional use applications (back-up, or frequency-response). Our energy storage machines are better suited to energy-focused, industrial applications – time-shifting renewable energy for example. Because our **technology** doesn't degrade like lithium batteries, our machines can be used for multiple "stacked" services – which means you can do more with a vanadium-flow machine, without having to worry about it degrading with increased use.

AL: What is the competitive landscape like for your technology?

SMG: There are a number of companies who are active within the flow-machine space, each having different chemistries and application focuses.

We have spent 17 years developing and validating our technology, and we have full confidence in our approach. We are a global market leader for this technology.

AL: How can redT's energy technology help support the UK's objective of energy independence?

SMG: UK energy independence is an important issue that needs to be addressed. We have an abundance of talent and technological expertise in this area, so at a time of heightened political uncertainty, we see our machines playing an increasingly significant role in the UK's energy security.

Recent policy announcements by the Department for Business, Energy %26 Industrial Strategy (BEIS) and Ofgem have also had a positive effect on the market environment, promoting the use of storage to provide greater flexibility.

Our machines could really help increase the amount of grid-connected renewables here in the UK. Without storage, renewable penetration cannot progress, owing to the strain that renewables without storage put on the grid. Storage balances the grid, helping to bring more renewables online.

AL: What do you see as the future for the off-grid market?

SMG: We believe the off-grid market presents a number of exciting opportunities for us, not only in Africa but also in the Middle

East, Asia and Australasia.

Given the strong financial case for operators to incorporate our energy storage machines into their off-grid set-ups, we believe that our units are perfectly suited to the off-grid market and particularly beneficial in remote locations.

AL: How can readers invest?

SMG: We are listed on London's AIM market (AIM:RED), so people are able to invest by buying shares in redT energy plc.

Let us know your thoughts. New energy is, after all, our favourite subject: **andrew@southbankresearch.com.**

Best,

Andrew Lockley
Exponential Investor

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