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ENERGY JUMPS OUT OF THE GATES

Renewables Entrepreneurs point out the investment potential of green technology, writes Ben Potter.

SMALL IS THE NEW BIG

Inspired by Bill Gates and friends' decision to plunge \$US1 billion into clean energy? Well don't be put off by the Turnbull government's December backflip on carbon emissions policy.

Good technologies have global markets says Simon Hackett, the Internode founder, Tesla electric vehicle collector and now, chief executive and shareholder of battery developer Redflow.

Australia is also a great test-bed for solar and wind energy. "It's not necessarily the end of the world if the Australian environment is not consistent in its support for investments in this space," Hackett says.

He adds that there is a rising number of investors like him who "in the face of desperate disappointment with government policies in this realm are trying to make whatever difference they can".

Gates' Breakthrough Energy Ventures is backed by Amazon founder Jeff Bezos, Virgin founder Richard Branson and Alibaba founder Jack Ma - that's a huge vote of wealth and business acumen. It's clear from the group's website they want to invest in fundamental, breakthrough science. That's where the big wins - the "10xers" - come from, says Hackett, referring to investments that get you 10 times your money.

But anyone aspiring to follow in their footsteps might have to wait a long time for the jackpot. They must also adhere to basics.

Regardless of the sector, there is not much point investing in a business unless it has a good chance of succeeding. It must have a good management team. And it must address a real market need, Hackett says.

Mike Fitzpatrick, AFL chairman, investment manager and - like Hackett - Tesla owner, has pursued "sustainable" investments since selling his Hastings Fund Management a decade ago.

Fitzpatrick says he is motivated by a desire to make a difference, and is dismayed that "a minority in a party which has a narrow majority" can hijack climate policy "in

the face of science".

He strives to do his bit to fill the gap in support for commercialisation of research in Australia through 88 Green Ventures, a family investment vehicle.

Investors in technology have a choice, he says. They can either research their targets

"really heavily", or they can take a statistical approach and invest across a range of companies in the hope a few will succeed and more than pay for the rest. The rule of thumb is that of 10 investments, if two really work they'll make your money, two or three will break even and the rest will go to zero.

That means you must either have investment expertise bordering on the professional; enough money to buy professional advice; or buy 10 companies and spread your risk. Historically, it's been hard to find enough of them in Australia to do that.

That's changing. But many tech start-ups are only open to wealthy investors in large licks. Fitzpatrick has had a couple go sour. Ceramic Fuel Cells wanted to commercialise CSIRO hydrogen fuel cell technology but its BlueGen units were expensive, their use of gas cut off access to subsidies, and power companies weren't interested. It went into administration. Enviromission is suspended from ASX trading, needing up to \$2 billion to verify the science behind its solar tower technology, which it wanted to trial in Mildura.

He has high hopes for Proterra, an electric bus company based in California and South Carolina with "world-leading battery technology". Other shareholders include

top Silicon Valley venture capital firm Kleiner Perkins Caufield & Byers, General Motors and Japan's Mitsui. It has buses in use in a dozen US states with an order backlog of 320 and is just becoming popular after "eight or nine years' gestation", he says. 88 Green Ventures is also the largest shareholder in Carnegie Clean Energy. The Fremantle company is embarking on a commercial trial of its wave energy techno-

logy off the coast of Cornwall, England, and has bought a solar-battery micro grid integration business as a cash cow. Its shares are about 5¢. "I think this one now has got enough diversity to do well. It's just a matter of execution," Fitzpatrick says.

He also has investments in sustainable agriculture, wind farms, digital firms including online car sales in Latin America, and paperless concierges for hotels. Independent Products is commercialising technology that can make airconditioners 40 per cent more energy efficient.

Hackett has investments in software, IT and batteries, and a shareholding in Nano-Nouvelle, a Queensland firm that has found a much more efficient way to make current collectors in lithium ion batteries using nanotechnology to coat a porous polymer wafer with copper. They're much lighter than solid copper collectors, boosting battery capacity by half. His big bet is Redflow.

The company has developed zinc bromide flow batteries - which charge by electroplating electrodes with zinc taken from a solution, and discharge by doing the opposite - for household and industrial uses. They're more durable and less fire-prone than established lithium ion batteries, and can be charged and discharged almost completely, but cost more. Redflow's challenge is to show it can make them at scale and get the cost down. "I think there's a decent chance that we can," he says. But many battery companies have fallen by the wayside and it remains high risk.

"We are still in the process of proving to the world that we can make a better mousetrap." ■



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