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Silicon Geyser: put your datacentres here

By [manek](#), 13 October, 2011 15:21

Is Iceland destined to be the new Silicon Valley? Or maybe Silicon Geyser might be more appropriate.

I spent some time at NetEvents in Frascati last week speaking to Verne Global, which has the Wellcome Trust as its majority investor and which has built a datacentre on that island of hot and cold. Verne is taking advantage of the country's unique infrastructure and topology to guarantee its energy bill for the next 20 years. Let me unpack.

Among the two biggest costs when setting up a datacentre are the cost of building it in the first place, and the cost of the energy needed to run it. Verne says it has reduced both of those significantly and, as a result, has set up a datacentre in Iceland, halfway between its two main customers, the UK and US.

On its own, this isn't terribly unusual, but the company claims it has a zero carbon footprint because it's fresh-air cooled, and because it buys its electricity from Icelandic companies that generate using geothermal and hydro-electric means. According to CEO Jeff Monroe, customers -- the first of whom is DataPipe -- save money because there's no premium for being green.

The climate is cool temperate, which means that it's not so cold that a huge amount of humidification is needed, but cool enough to allow fresh-air cooling to be achieved throughout the year. Verne also takes advantage of modern equipment's ability to run warmer without exceeding ASHRAE limitations. As a result, CTO Tate Cantrell reckoned the datacentre "can do better than a PUE of 1.21".

That's how energy saves opex. The other piece of the equation is building costs, and Verne keeps those low by using COLT's modular datacentre facilities. The telco last year set up a production line that allows it to deliver and install a 500 square-metre module in around four months, compared to the years it can take to build a complete facility.

"This is a 40 to 50 year investment so we think about things in long timescales," Monroe said. "We know what the cost of electricity will be in 20 years time and no-one else can do that. The price we pay for

electricity is -- all other things being equal -- under 50 percent of power costs in the UK."

And the reason why Verne can be so sure of its energy costs? Whatever happens to the oil price, aluminium smelting consumes 85 percent of the country's electricity production, according to Monroe. This demand is constant, so peaks and troughs caused by people turning on the kettle after the Icelandic equivalent of EastEnders are a small part of the whole, and the generators can run near peak load and high efficiency all the time. Verne was able to conclude a long-term energy contract as a result -- as long as there's demand for aluminium.

Given the costs of instantiating a datacentre, Verne has perhaps gone further than most to take advantage of geography, climate and new technologies to lower the costs of storing and processing data, both in terms of cash and climate damage.