

From the *Alberta Venture*

Canadian Control Works Inc. is being blocked from selling an innovative product

FORTIS ALBERTA REFUSED TO WORK WITH THE EDMONTON-BASED COMPANY

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The familiar nod of a pumpjack is a fact of life in Alberta. Drive down a secondary highway and, whether you're near High Level or Lethbridge, the odds are pretty good you'll see at least one old reliable reciprocating piston pump.



David Gray, president of CCW,* looks at a pumpjack and sees potential energy – and the potential to make money.

A pumpjack is a lot like an iceberg, in that what's under the surface dwarfs what's visible to the naked eye. There could be two to four kilometres of steel pipe underground drawing a mixture of oil and water to the surface. With hundreds of thousands of pumpjacks across the world, that means millions of tonnes of steel going up and down every day.

In the eyes of most energy companies, pumpjacks and the mature oilfields upon which they toil are the equivalent of leftovers. Sure, there's a bit of nutritional value to be had, but your mind is already

wandering towards what you're going to cook up next. That's certainly how it is in the oil and gas industry, where interest in finding new reserves far outstrips any efforts to get oil out of older ones. But David Gray looks at this worldwide forest of swaying steel and sees something other than monotony and boredom. He sees potential, and lots of it.

Gray is the president of Canadian Control Works Inc.,* a small Edmonton-based company that makes the most interesting pumpjack controller you've never heard of.

CCW manufactures and sells a re-generative pumpjack controller called the Enersaver that turns the kinetic energy from the downward stroke of a pumpjack into electricity that can be sold back to the grid. It's analogous to the regenerative braking in a hybrid or electric car, which turns waste heat into a charge for batteries.

As it stands right now, half of the motion on a pumpjack is pure waste. The down stroke is simply a heavy piece of metal obeying the laws of gravity, and in a regular pumpjack that energy is lost as heat. By generating electricity from their pumpjacks and selling it back to the grid, energy companies can address one of their biggest operational costs – electricity. A pumpjack could end up using 10 to 30 per cent less electricity using an Enersaver, and with an average 100 horsepower pump costing about \$35 a day to operate, those savings would add up quickly. Better still, not only do the oil companies get lower bills, but the electricity they'd generate by using the Enersaver would be clean, hospital grade power. "It makes everything around it better," Gray says. "We make the whole grid sing in key."

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- Number Of Pumpjacks In Alberta: **150,000**
 - Number of new pumpjacks Installed in Alberta each year: **8,000**
 - Number of pumpjacks in the United States: **600,000**
 - With an **Enersaver** a 100 horsepower pumpjack uses 280 kilowatt hours a day, or **8,400 kilowatt hours a month**
 - An **average** 100 horsepower pumpjack uses 323 kilowatt hours a day, or **9,690 kilowatt hours a month**
 - An **Enersaver** on a 100 horsepower pumpjack regenerates 53 kilowatt hours a day, or **1,540 kilowatt hours a month**
 - An **Enersaver** equipped pumpjack **draws 68% less current** during peak demand
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To see how this works, [click here](#).

At just four years old, CCW is an ambitious company that's in the process of expanding. It has an upcoming joint venture with Italian inverter manufacturer Santerno to mass-produce both their regenerative and conventional motor drive systems, a distribution agreement with Tarpon Energy Services, a leading supplier in the space, and interest from ConocoPhillips. CCW is well on its way to making the difficult transition from a research and development focused outfit to a viable, medium-sized oil and gas business with an innovative product that's in demand around the world.

Or, at least it was, until it ran into a company called Fortis Alberta.

Fortis Alberta is the provincial arm of Fortis Inc., an international electric-utility holding company. In Alberta, after the electricity system was deregulated, the distribution system was carved into territories since it's expensive to have competing sets of power lines running across the province. As a result, Atco Electric, Fortis Alberta, Epcor, Enmax, several municipalities and several rural electrification associations share ownership of the wires. Only two of those companies, Fortis Alberta and Atco Electric, are privately owned, and only one of them isn't based in Alberta. But, as it happens, it's that one company – Fortis – that stood in the way of CCW and its potentially groundbreaking technology.

In September of 2011, Fortis Alberta issued a disconnect order to ARC Resources, an Alberta energy company and CCW customer that had installed an Enersaver. The reason? Fortis claimed that it was unable to provide bi-directional metering in compliance with Measurement Canada requirements.

The team at CCW had never run into this problem anywhere else in the world, but they couldn't have been too surprised. After all, this wasn't the first time that it had run afoul of Fortis Alberta. In a 2010 submission to the Alberta Utilities Commission, Fortis Alberta argued that the Enersaver didn't qualify as a micro-generator. The AUC disagreed.

After CCW received what it believed to be an improper disconnect notice, the company applied to have the case go to the AUC for a ruling, but ARC Resources removed itself from the complaint process. It's not clear why, and ARC Resources wouldn't comment on its decision for this story. But once ARC Resources pulled out, the AUC was forced to rule that since the customer had withdrawn from the case, there was no case to adjudicate. Not surprisingly, Gray wasn't happy with the decision. "My biggest problem with the AUC decision is that it was just lazy," he says. "Their decision was the least helpful they could render."

Fortis Alberta refused to comment for this story, but in a March 2011 interview spokesperson Jennifer MacGowan brushed off its dealings with CCW as a minor inconvenience. "What it came down to was that we weren't satisfied with data collected in the pilot project," she said. "We weren't satisfied because the data didn't meet Measurement Canada requirements and as a result we were compelled to end the project." When asked if Fortis Alberta objected to the Enersaver because it could reduce demand for the electricity Fortis sells to its customers, MacGowan said, "We participated fully in this project."

Gray certainly doesn't see it that way. "What galls me at the end of the day is that we had them dead to rights," he says. "We had a meter test and they tested three different meters with the Enersaver and they all came out to exactly the same net energy results. For Fortis to say that they can't measure our customers' electricity is ridiculous."

But while Fortis Alberta wouldn't sanction the use of the Enersaver, the other for-profit utility in Alberta's electricity distribution market did. In a field near Valleyview in northern Alberta, which is located in Atco Electric's territory, there's an Enersaver quietly churning away and reducing its customer's electricity bill in the process. It's not an anomaly, either, since there's another that's being set up there.

The good news is that, unlike so many of these kinds of stories, there's actually a happy ending to this one. In August, after months of pressure from CCW, Fortis Alberta decided to relent, and will now allow the installation of CCW Enersavers in its coverage area. Gray, for his part, is happy with the decision, and the fact that it will allow his company to deploy the technology where it was invented. "We wanted to get back home," he says. "It's where we got started and it was frustrating to have those roadblocks. But all's well that ends well."

**David Gray is no longer with CCW. The new leadership at CCW is working with Fortis Alberta toward a solution to their dispute.*