

Mining for heat: Saskatchewan's geothermal project

Kirsten Marcia is leading DEEP Geothermal's groundbreaking project

by **Jillian Clark**



Kirsten Marcia, P. Geo. President, CEO, Director, of DEEP Geothermal in her yard, where she spends a lot of time.

— Photo courtesy Kirsten Marcia

Kirsten Marcia is an outdoor advocate and resource entrepreneur who has recently transitioned to lead Saskatchewan's first geothermal project of its kind. The co-founding of DEEP Geothermal came at the perfect time in Marcia's career. As the president and CEO of the company, she is excited for the future of its first project.

Mining geothermal resources

DEEP Geothermal's project is located near Estevan, Saskatchewan. It is a hot sedimentary aquifer (HSA) more than 3,000 metres deep at the base of Williston Basin. DEEP and SaskPower signed a Power Purchase Agreement (PPA) in May 2017, committing to moving the project forward. The long-term goal is to build up to 200 megawatts of geothermal power-producing facilities to meet SaskPower's demand for renewable energy.

DEEP is using local technology and local expertise wherever possible to move the project forward. "It marries well with the world-class drilling expertise we have in the province," Marcia said. This geothermal project follows a similar timeline to traditional mining projects. "It's no different than diamonds or gold. We are approaching this renewable resource in the same way."

Marcia has always been interested in geology. "What I found interesting about geology is the blend of sciences," she said. "It's a combination of chemistry, physics and biology." In Marcia's case, her skills transfer seamlessly to DEEP's new project. "Think of it as heat mining, so it's not a big stretch from the type of mining projects that I've worked on previously,"

she said. "I thought it was a wonderful opportunity to apply my experience to a renewable project. It came at the perfect time in my life."

Renewable energy in Saskatchewan

Renewables are Saskatchewan's focus right now. If the province is going to meet its goals of 50 per cent renewables by 2030, it needs a resource with base load power to supplement the intermittent power of some renewable energy. "I think that everyone is excited about this project," Marcia said. "Geo-thermal is the only

renewable that can provide base load power.” Marcia said DEEP is fortunate to be developing this project in the province of Saskatchewan. “The environment is supportive. At the end of the day, it’s a fantastic resource we are developing.”

A first on many fronts

About a year ago, DEEP received Canada’s first-ever geothermal PPA. This is significant for the project because, as they move into construction, it’s a requirement of any institutional lender that they have a customer. SaskPower has committed to the project.

The next steps for the project will be drilling and completing the initial two production and injection wells. This will allow them to refine their resource assumptions to satisfy the requirements for the bank. Afterwards, they can complete the final stages of the design work and move into construction.

It will be about a year to complete the bankable feasibility study. Construction will be another 1.5 years.

DEEP Geothermal’s first project poses unique challenges. “It’s a challenge to do this for the first time, but the reward is we are developing a brand new renewable power option for the whole country,” Marcia said. “The reward of that is that barriers are broken and hopefully we will see geothermal power projects across Canada. At some point it won’t just be DEEP doing this. We are very supportive of other projects in Canada.” Perseverance will move the challenging industry forward. “Being first we are constantly breaking barriers to move ahead to develop what will be Canada’s first geothermal power generation facility,” Marcia said. “Fortunately, it’s paying off.”

Drilling down

Name

Kirsten Marcia

Company

DEEP Geothermal

Must reads

Harry Potter series by J.K. Rowling

Quotable

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