GTHT - 1

NEWSPAPER ARTICLES

OPINION

CEO responds to Searchlight NM's geothermal article

John R. Moses, Farmington Daily Times Published 5:00 a.m. MT April 3, 2019

Nick Goodman *(Photo: Cyrc Energy/Carroll Strategies)*

It is rare to see a story written with such misleading statements, outright falsehoods, and shocking distortions of the truth. Unfortunately, that's exactly what you have in a syndicated story distributed to you by Searchlight NM about the geothermal energy industry in New Mexico.

There's a very positive story about the success of geothermal energy in this state, its low carbon footprint, its round the clock, 100% renewable energy, and its vital role in meeting the renewable energy standards for the state of New Mexico.

Instead, very irresponsibly, the story is outright wrong, with a strong bias against renewable energy, and a shocking disregard for what's true about the only utility-scale geothermal plant in our state.

The main contention of the story is that the Lightning Dock Geothermal plant near Lordsburg has damaged the local aquifer and contaminated the freshwater resources. Well, absolutely none of that is true and there is no evidence whatsoever that it is. Our system is closed loop, which means the water comes up, provides energy by extracting the heat, and goes back down. That's the beauty of geothermal.

Over the five years of continuous operation, the plant has consumed no water for energy, and there are no contaminants placed in the water. Never. Thus, the aquifer has not been damaged in any way and there has been no contamination.

A few egregious examples of getting the facts wrong. The story starts with an anecdote about a 10-foot geyser of a well near the plant. As it turns out, the well wasn't our well, had been out of compliance for years, there was no geyser that ever came to our attention, and we capped it as a favor to the landowner. It wasn't a geyser, but a trickle, and it was a faulty cap, not a geothermal blowout. We just did a good deed for a neighbor. There is also a separate monitoring well very close to this well.

The story stated that four tadpoles test "killed hundreds of thousands" of fish. In fact, no fish were killed. How can they say that hundreds of thousands of fingerlings (small fish) died when none did?

The story says that there is no regulatory oversight and no avenues of protest. Absolutely irresponsible. We are regulated by the state under the Energy, Minerals and Natural Resources Department and there is an easy and straightforward way to protest, as one of our neighbors did in 2015. The fact is that there have been relatively few protests in the past few years, because there is nothing to protest.

In addition, the story refers to the "geothermal toxins" that are contaminating the freshwater resources. However, since no water actually touches a chemical of any kind in our geothermal plant, there are no geothermal toxins introduced by the plant. Further, the geothermal brine at Lightning Dock meets New Mexico drinking water standards in all categories, except for Fluoride, which has been naturally high in the Animas Valley for millions of years.

We could go on with dozens of examples of such outright distortions, written in a biased manner, without consultation. On that subject, the reporter wrote, "Cyrq declined multiple interview requests and did not respond to email questions." What the writer did not say is that we offered her an exclusive to our story, with full cooperation, full access to the plant and all the managers when the plant celebrates its Re-Grand Opening this spring. She turned that down.

Geothermal energy is a great renewable energy that emits no carbon into the atmosphere, provides critical power around the clock and not just when the sun shines, has a very small footprint compared to wind or solar energy, and is an important component for reaching the renewable energy goals in the Governor's new renewable energy plan. We need to support it and cultivate it, not tear it down with outright wrong and misleading reporting. We look to the future, with clean, safe, responsible geothermal energy, here for the long run.

Nick Goodman is the CEO of Cyrq Energy, which runs the Lightning Dock Geothermal plant in Animas.

Independent Power and Renewable Electricity Producers Company Overview of Lightning Dock Geothermal HI-01, LLC

April 03, 2019 11:04 AM ET

Snapshot **People**

Company Overview

Lightning Dock Geothermal HI-01, LLC owns and operates a geothermal power plant. The company was incorporated in 2007 and is based in Provo, Utah. Lightning Dock Geothermal HI-01, LLC operates as a subsidiary of Cyrq Energy, Inc.

5152 Edgewood Drive # 375
Provo, UT 84604
United States

Founded in **2007**

Key Executives For Lightning Dock Geothermal HI-01, LLC

Lightning Dock Geothermal HI-01, LLC does not have any Key Executives recorded.

Lightning Dock Geothermal HI-01, LLC Key Developments

Third Amended Reorganization Plan Approved for Lightning Dock Geothermal HI-01, LLC

Sep 8 17

The US Bankruptcy Court approved the third amended plan of reorganization of Lightning Dock Geothermal HI-01, LLC on September 8, 2017. As per the approved plan, Administrative Claims, Professional Claims and Priority Tax Claims will be paid in full in cash. DIP Facility Claims of $32.5 million will be paid from the Exit Facility of the same amount. Other Priority Claims will be paid in full in cash. Kaishan Secured Claim of $11 million shall receive the Scheduled Payment Note of $9 million, the Revenue Note of up to $2 million and turnover on the collateral property. The other secured claims of $0.02 million, Convenience claims of $0.45 million will be paid in full in cash. General Unsecured Claims against Los Lobos of $3.01 million will receive no distribution under the plan. The Cyrq Energy Subordinated debt claims of $10.04 million will be paid 100% of the new equity of reorganized debtor and new subordinated intercompany notes of $10.03 million. On the Effective Date, the Allowed Interests in Lightning Dock shall be cancelled and the holder(s) of such Interests shall receive no property or distribution under the Plan on account of such Interests. The plan will be funded from cash in hand, issuance of new equity, Exit facility of $36 million and issuance of new subordinated intercompany debt of $10.03 million.

Third Amended Reorganization Plan and Disclosure Statement Filed by Lightning Dock Geothermal HI-01, LLC

Aug 18 17

Lightning Dock Geothermal HI-01, LLC filed a third amended plan of reorganization and related disclosure statement in the US Bankruptcy Court on August 18, 2017. As per the amended plan filed, Kaishan Secured Claim of $10 million will be paid in combination of cash and debt. Other Secured Claims of $0.15 million will be paid in cash. General Unsecured Claims against Lightning Dock of $0.75 million will be paid in full in cash. General Unsecured Claims against Los Lobos of $3.01 million will receive no distribution under the plan. New Subordinated Intercompany Note will be issued for an amount of $10.03 million. There is no change in treatment of other various claimant classes. Debtor filed a limited changes plan in the Court on August 23, 2017. As per the plan, there is no changes in treatment of various claimant classes.

Second Amended Reorganization Plan and Disclosure Statement Filed by Lightning Dock Geothermal HI-01, LLC

Aug 4 17

Lightning Dock Geothermal HI-01, LLC filed a second amended plan of reorganization and related disclosure statement in the US Bankruptcy Court on August 4, 2017. As per the amended plan filed, Kaishan Secured Claim of $11 million shall receive the Scheduled Payment Note of $9 million, the Revenue Note of up to $2 million and turnover on the collateral property. General Unsecured Claims of $0.75 shall be paid in full in cash. The Cyrq Energy Subordinated debt claims of $10.04 million will be paid 100% of the new equity of reorganized debtor and new subordinated intercompany notes of $9.94 million. The plan will be funded from cash in hand, issuance of new equity, Exit facility of $36 million and issuance of new subordinated intercompany debt of $9.94 million. There is no change in the treatment of other classes of claims.

Similar Private Companies By Industry

Recent Private Companies Transactions

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2COR9 LLC	United States
8minutenergy Renewables, LLC	United States
8point3 Energy Partners LP	United States
8point3 Operating Company, LLC	United States

Type Date	Target
No transactions available in the past 12 months.	

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In hot water: The dangerous side of a renewable energy project

By  **Lauren Villagran, Reporter** | March 26, 2019

Don J Usner / Searchlight New Mexico

Cyrq Energy's Lightning Dock power plant in New Mexico's Animas Valley has ramped up electricity production using equipment made by Turboden, a subsidiary of Mitsubishi Heavy Industries. The plant is located in New Mexico's southwestern Hidalgo County.

ANIMAS VALLEY — Riding his horse through cattle pasture of brush and brittle mesquite, Randy Walter spotted a steaming, 10-foot geyser spewing from a well that had been capped and padlocked for 12 years. It was March 2016, and Walter had ranched the dry terrain of New Mexico's Bootheel for as long as he could remember.

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Two miles away, a Utah company called Cyrq Energy had erected a $43 million geothermal electricity plant in 2013. Its green pipes and rectangular pods of turbines rose like stacks of giant Legos in the desert.

The Lightning Dock power plant was supplying the state's largest power provider, Public Service Company of New Mexico, with about four megawatts toward the state's renewable energy goals — roughly enough to power 1,400 houses for a year.

From the outset, local residents had questioned Cyrq's assertion that it could pump geothermal water from thousands of feet down and reinject it at similar depths without tainting the shallow, freshwater aquifer. Like many places in New Mexico, the health of the local farm and ranch economy is rooted to the water. So are the lives of the scattered people who live in the Animas Basin.

"The valley has been productive through the years and it has sustained a rural community," said Stan Jones, chairman of the locally elected Hidalgo Soil and Water Conservation District. "That geothermal water is not water that can be used to farm or ranch with. That is why we are so adamant: That's our livelihood they're messing with."

Don J. Usner / Searchlight New Mexico

By the time Walter stumbled on the blown well, the spillage had soaked roughly an acre. The landowners — his in-laws, the McCants family — immediately demanded an investigation by the Office of the State Engineer, the agency historically responsible for managing water in New Mexico.

But the state didn't investigate.

Instead, with the State Engineer's blessing, Cyrq plugged the well with cement and welded it shut — permanently.

Water at risk

The dark side of renewable energy is that every form of production carries its own environmental baggage. Without an ecological review, wind farms can put native and migratory birds at risk. Solar farms can interrupt ecosystems by fencing off and shading swaths of desert acreage. And geothermal energy, which has some advantages over wind and solar, can jeopardize freshwater resources.

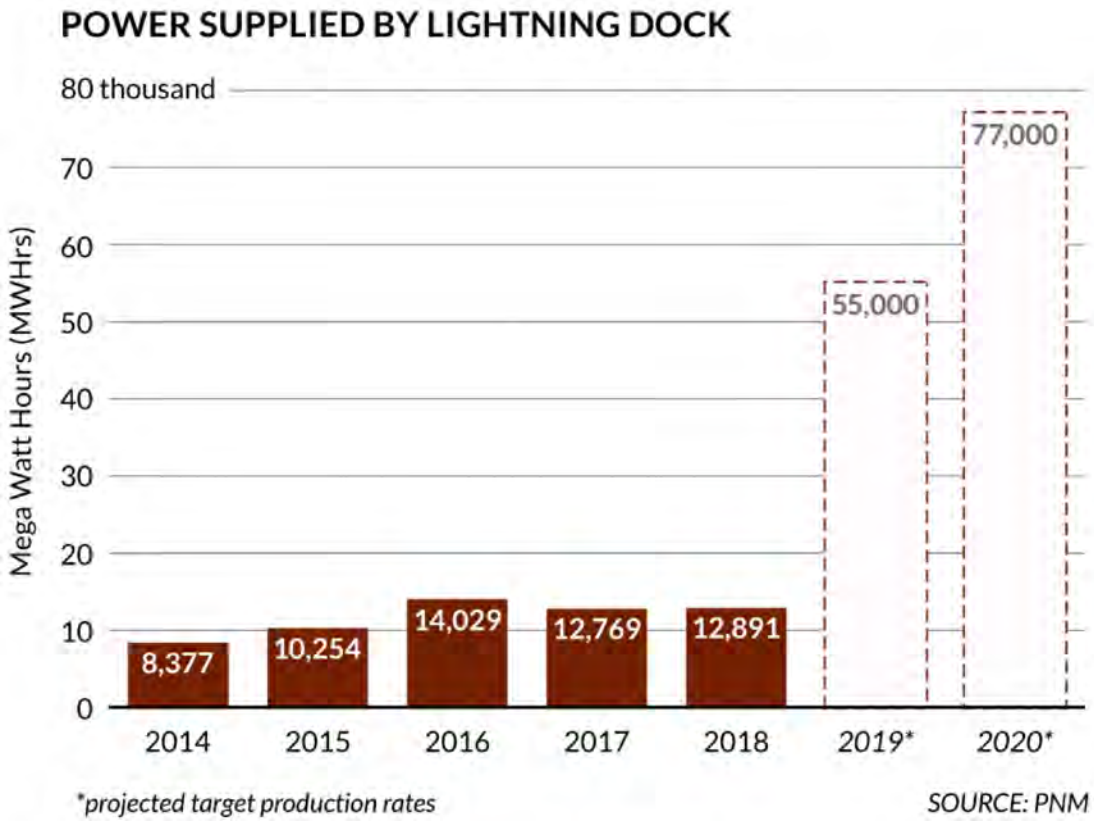
Pipes run 250-plus-degree geothermal water to Cyrq Energy's Lightning Dock power plant in the Animas Valley of New Mexico's Hidalgo County.

In Hidalgo County, the deep geothermal water is dirty with naturally occurring contaminants — especially high levels of fluoride, a mineral that, when consumed in excess, is dangerous to bone health.

"Geothermal isn't terribly new; we just don't have a regulatory framework for most of this stuff," said Ben Shelton, legislative director of Conservation Voters New Mexico, an environmental lobbying group based in Santa Fe. "If it seems lacking in New Mexico, it's because it is lacking."

On the positive side, geothermal plants typically take up far less acreage than solar or wind farms, leaving a smaller environmental footprint on the surface. The energy, extracted from dry heat or hot water deep underground, generates power around the clock and isn't subject to changes in the weather.

Nationwide, electricity generated from geothermal grew about 9 percent between 2007 and 2017, according to the Energy Information Administration. Lightning Dock is New Mexico's only utility-scale geothermal power plant.



Graphic by Aliya Mood / Searchlight New Mexico

Cyrq, formerly known as Raser Technologies, retooled its business model in 2007 to exploit the growing market for geothermal energy. But it has a checkered past, including two bankruptcies, a retreat from the New York Stock Exchange back into private hands, a falling-out with Chinese creditors and ongoing litigation with an Animas Valley tilapia farm.

Though Cyrq declined multiple interview requests and did not respond to emailed questions, Searchlight's report is based on hundreds of pages of public testimony, official correspondence, Securities and Exchange Commission filings, and state and federal litigation.

The company's operating premise in the Animas Valley was for a "closed loop" system: Lightning Dock would pump 250-plus-degree water from the valley's geothermal resource, pipe it through a plant to generate electricity, then re-inject the hot water back where it came from without consuming it or contaminating the shallow aquifer.

Locals worried that the state, in its zeal to promote renewable energy, was willing to risk their water for a green energy project.

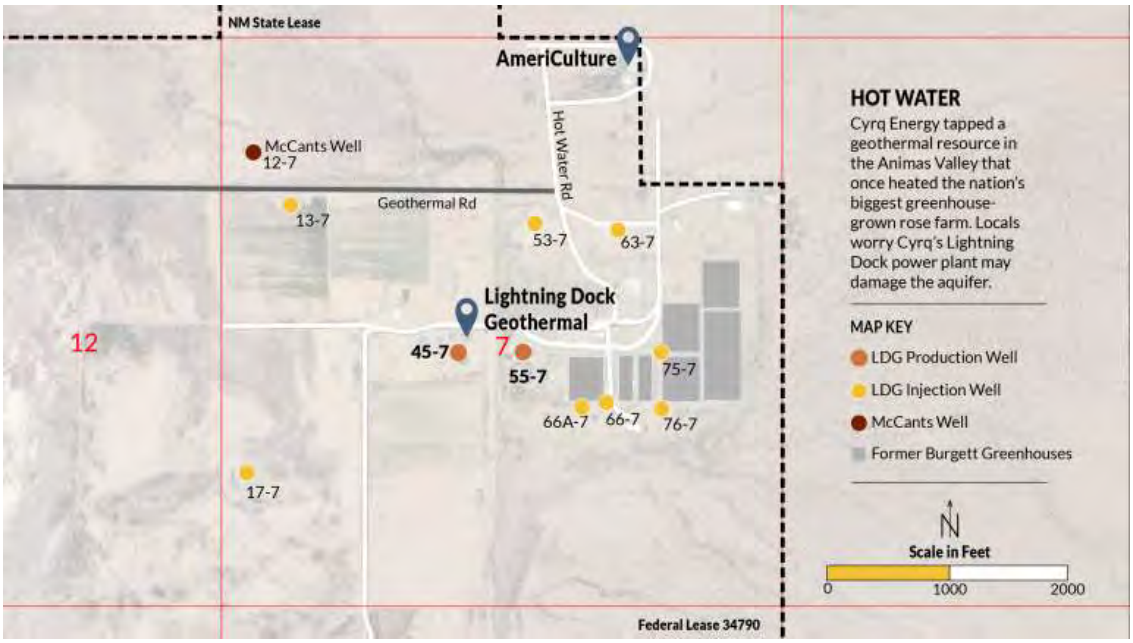
"Not all of the questions are answered," said Carl Chavez, an environmental engineer with the Oil Conservation Division, at the plant's grand opening in 2013. "They are proceeding at some risk if there are any water quality issues, any water drawdown issues."

PNM gambled on the project in part because it had to: The utility was subject to a "diversity" rule that forced it to buy renewable energy from a source other than wind or solar.

"While the plant has had some production shortfalls and a bankruptcy, PNM is committed to this renewable generation," said spokeswoman Kelly-Renae Huber. "As part of that commitment, we were able to avoid canceling their contract until they were able to improve the efficiency of the project."

Even before the McCants' well blew, there were signs that the hydrogeology of the valley was neither cut nor dry.

A hot spot for investment



Graphic by Aliya Mood / Searchlight New Mexico

The first person to tap the hot water of the Animas Valley on a grand scale was Dale Burgett. The maverick rose farmer poked holes around the valley in the 1970s, often without state permission, looking for the hottest spot. He found it near what is now the intersection of Geothermal and Hot Water roads, about two miles east of where the well blowout occurred. That's where the 312-degree water of a geothermal plume swells toward the surface.

The unique hydrogeology of the Animas Valley can be imagined from above like a dartboard where that bullseye is the hottest spot. The hot water — with a chemical makeup that makes it not suitable for consumption by humans or livestock — naturally seeps into the surrounding freshwater aquifer at a rate of 300 gallons per minute. The water flows north underground and becomes progressively cooler and cleaner as it moves away from the center.

Burgett piped the geothermal water through football-field-size greenhouses to warm his rose bushes and, in doing so, became the nation's largest rose producer. By the early 2000s, Burgett Geothermal Greenhouses was shipping 25 million roses annually — until Latin America captured his market share and his business went south. Burgett died in 2013 at age 88.

Cyrq, meanwhile, acquired $4.9 million in federal and other leases to develop geothermal resources where Burgett's hulking, dilapidated greenhouses still loom. Hundreds of thousands of his rose bushes still stand in perfect rows, moribund in their buckets.

Across from the rose farm, near the McCants property, Damon Seawright — an entrepreneur with a doctorate in fisheries science — founded a warm-water aquaculture farm in the 1990s called AmeriCulture Inc. He and his wife Libby home-schooled two boys there while building AmeriCulture into one of the largest tilapia hatcheries in North America.

Don J. Usner / Searchlight New Mexico

The dilapidated remnants of Burgett Geothermal Greenhouses loom near Cyrq Energy's Lightning Dock power plant. Rose farmer Dale Burgett, deceased, was the first to tap the geothermal water of the Animas Valley on a commercial scale.

When Cyrq ran a red tracer dye through wells to test water flow in 2012, the Seawrights' tilapia turned the color of carnations. AmeriCulture says that hundreds of thousands of fingerlings died. Before that incident, dozens of locals were already protesting the project at the Office of the State Engineer.

So the state simply eliminated the path of protest. During the 2012 legislative session, before the tilapia turned pink, southern New Mexico Democrats Sen. John Arthur Smith and Rep. Rudy Martinez co-sponsored a bill that took jurisdiction over 250-plus-degree water from the Office of the State Engineer and placed it in the hands of the Oil Conservation Division.

In other words, the hot water was no longer considered water, but energy. The agency historically tasked with managing water in New Mexico was stripped of its authority over the project.

Nor could residents seek relief from the federal government. Federal regulations place geothermal injection wells in the same category as septic tanks: They are allowed to degrade groundwater.

Hydrology 101

"We get along with everybody in the community," said Tom Carroll, whose Albuquerque firm handles public relations for Cyrq.

The community's reluctance to talk candidly about the company suggests otherwise.

Damon Seawright refused to be interviewed, citing ongoing litigation with Cyrq over water issues. The McCants family didn't return phone or email messages, while state engineers familiar with the project spoke only on condition of anonymity.

One of the people unafraid to speak out is Meira Gault, a 69-year-old cattle rancher who once served in intelligence in the Israeli Army and has been a Hidalgo conservation district official for 11 years.

Gault said she views the well blow-out as the surest sign that the geothermal water simply isn't going where Cyrq promised it would go.

"It's the feeling that something is wrong that is bigger than the problems of this or that individual," she said.

To understand how the well blow-out happened, locals refer back to Cyrq's 2015 application to drill three new, shallow injection wells. Lightning Dock at the time still wasn't meeting expectations. Its "closed loop" scheme had proved inadequate to producing the 12 to 15 megawatts, as promised.

When the state approved the new wells, it did so on the condition that they be drilled below "a silicified layer" — a hard rock barrier — to protect the shallow aquifer. Cyrq was then allowed to re-inject hot water far from the central plume, not far from the McCants well.

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As of January 2018, new state rules govern the development of geothermal projects, and Lightning Dock will be required to apply for new permits by 2023.

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That goal may not be cause for celebration for residents of the Animas Valley, however. It signifies that the plant is re-injecting the geothermal water at a much higher rate, since all the water that comes up must go back down in the ground.

With the McCants well sealed and no monitoring wells north of the nearby injection site, Lightning Dock could contaminate the aquifer without anyone knowing until it's too late.

"I am not against green energy," Gault said. "But I'm not sure that it is safer or cleaner. The interest of the money people is not that different on the green side or the oil side."

Clarification: An earlier version of this story used imprecise language in several places and has been revised after communication from Cyrq.

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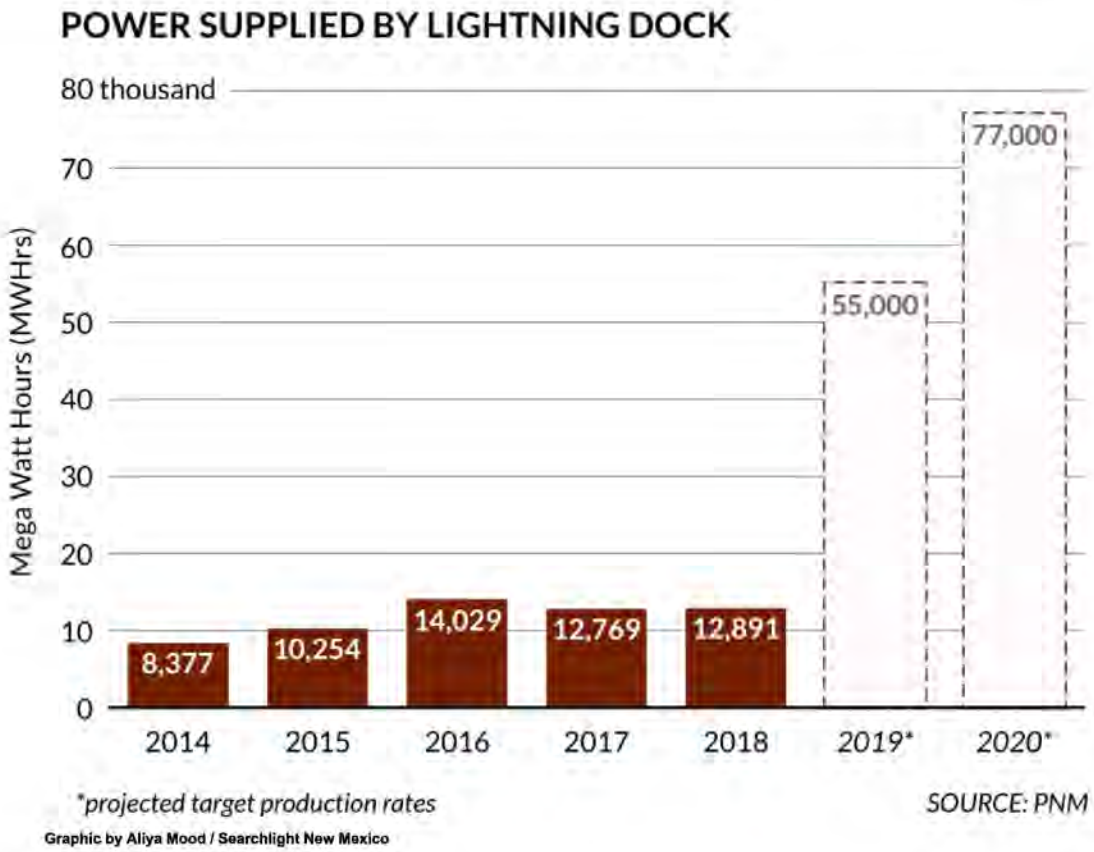

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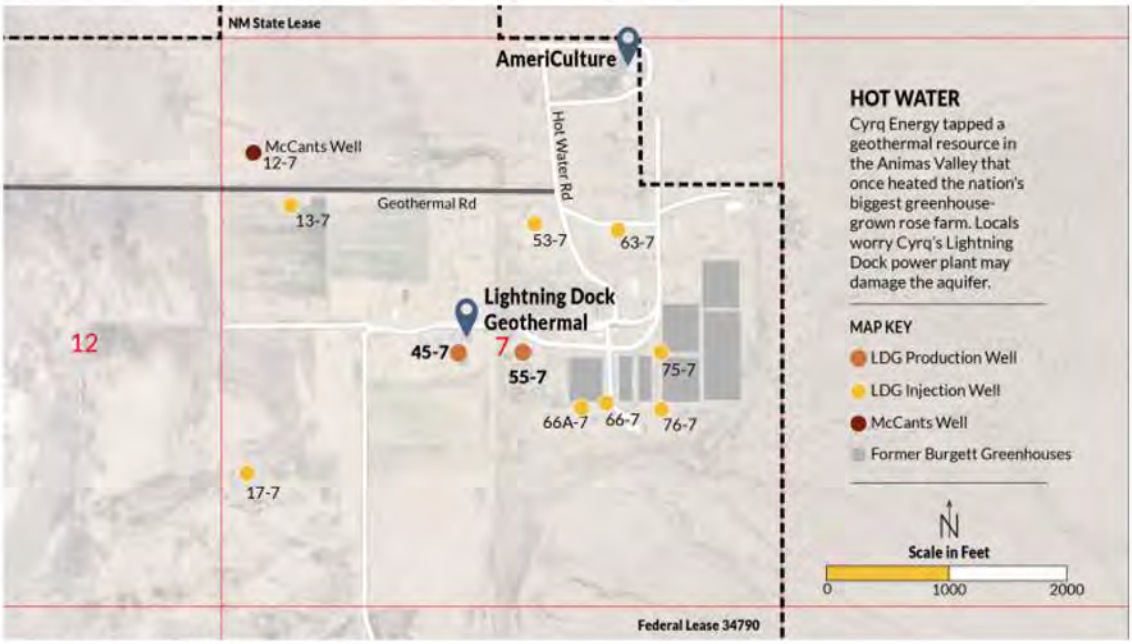

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That goal may not be cause for celebration for residents of the Animas Valley, however. It signifies that the plant is re-injecting the geothermal water at a much higher rate, since all the water that comes up must go back down in the ground.

With the McCants well sealed and no monitoring wells north of the nearby injection site, Lightning Dock could contaminate the aquifer without anyone knowing until it's too late.

"I am not against green energy," Gault said. "But I'm not sure that it is safer or cleaner. The interest of the money people is not that different on the green side or the oil side."

Geothermal plant expanding in Animas

Algernon D'Ammassa, The Deming Headlight Published 10:42 a.m. MT Sept. 26, 2017

Doubling capacity with promise of jobs

(Photo: Courtesy of Carroll Strategies)

ANIMAS – Plans for a $50 million expansion of the Dale Burgett Geothermal plant will move forward in October, per an announcement by Cyrq Energy last week.

The geothermal plant, also known as Lightning Dock, began operation in December 2013. The first utility-scale geothermal plant in New Mexico utilizes hot water from below ground to help operate a turbine that produces electricity. It currently generates 4 megawatts of power for the Public Service Company (PNM), and Cyrq announced that the expanded facility, operational in “about a year,” will generate 10 megawatts.

Cyrq also stated that "in the next few months" there would be announcements about employment and contracting opportunities at the facility.

“We are pleased to have this opportunity to improve the geothermal plant through another substantial investment,” said Nick Goodman, CEO of Utah-based Cyrq Energy, in the company’s statement.

Geothermal energy is part of PNM’s long-term Renewable Plan. An article on PNM’s website touts geothermal energy’s low emissions and constant availability: “Like wind and solar, geothermal energy emits no pollutants into the air; unlike wind and solar energy, it is available to serve customers around the clock.”

Plans to expand the plant were slowed by a bankruptcy case involving the provider of the plant’s original equipment, and local disputes over groundwater in the Animas valley and concerns about the impact of re-injected water from the plant.

The new technology will be supplied by the Italian firm Turboden, a company held by Mitsubishi Heavy Industries.

Algernon D'Ammassa can be reached at 575-546-2611 (ext. 2608) or adammassa@demingheadlight.com (mailto:adammassa@demingheadlight.com).

Global Geothermal News

Friday, September 15, 2017

USA, New Mexico: New 14 MW ORC Unit for Lightning Dock Geothermal Power Plant

Turboden First Geothermal Power Plant in the U.S. for Cyrq Energy Inc. (News Release)

Turboden supplies a 14 MWe geothermal ORC unit in New Mexico

Turboden, a group company of Mitsubishi Heavy Industries (MHI), leader in Organic Rankine Cycle (ORC) turbogenerators for distributed power generation employing renewable sources and waste heat, signed an order with Cyrq Energy Inc. for the supply of an ORC turbogenerator, that exploits geothermal brine from existing geothermal wells, for the production of electricity.

Lightning Dock Geothermal HI-01 is located in the Animas Valley of southwest New Mexico, in Hidalgo County.

The solution of a single axial turbine proposed by Turboden allows to increase the nominal output to 13.7 MWe and off design up to 15.2 MWe. The plant is currently under construction and it is planned to be in operation in the first quarter of 2019

Read More.....

Cyrq Energy is a Silver Level Sponsor of the GRC Annual Meeting & GEA GeoExpo+ being held October 1-4 at the Salt Palace Convention Center, Utah, USA.

Turboden and Mitsubishi Heavy Industries (MHI) will be exhibiting at the GRC Annual Meeting & GEA GeoExpo+ being held October 1-4 at the Salt Palace Convention Center, Utah, USA.

Posted by Geothermal Resources Council at 10:09 AM

Labels: energy, geothermal, geothermal plant, geothermal power, GRC, renewable
Location: Lightning Dock Geothermal Power Plant

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August 2015 (150)

July 2015 (152)

June 2015 (135)

May 2015 (155)

April 2015 (165)

March 2015 (140)

February 2015 (143)

January 2015 (132)

December 2014 (139)

November 2014 (133)

October 2014 (151)

September 2014 (171)

August 2014 (132)

July 2014 (121)

June 2014 (136)

May 2014 (127)

April 2014 (114)

March 2014 (115)

February 2014 (113)

January 2014 (120)

December 2013 (109)

November 2013 (124)

October 2013 (138)

September 2013 (123)

August 2013 (114)

July 2013 (120)

June 2013 (104)

May 2013 (138)

April 2013 (120)

March 2013 (102)

February 2013 (111)

January 2013 (155)

December 2012 (116)

November 2012 (111)

October 2012 (136)

September 2012 (96)

August 2012 (122)

July 2012 (95)

June 2012 (87)

May 2012 (133)

April 2012 (129)
March 2012 (139)
February 2012 (129)
January 2012 (113)
December 2011 (39)

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Dispute over New Mexico power plant's expansion resolved

By - *Associated Press - Saturday, October 17, 2015*

ALBUQUERQUE, N.M. (AP) - A dispute over a proposed expansion of a southern New Mexico power plant reached a tentative resolution this month.

The Oil Conservation Commission has approved expansion plans for the Lightning Dock geothermal power plant in the Animas Valley, but with conditions intended to address protests from a local fishery.

AmeriCulture Inc., a tilapia fish farm, and a local water conservation board have demonstrated against Cyrq Energy Inc. The fishery argues the plant would re-inject geothermal water at shallower injection wells under its expansion, potentially damaging groundwater quality. The fish farm and the $43 million plant are both situated close to the dry Animas Valley near Lordsburg. Both rely on that area as a water source. Both have been uncomfortably coexisting since the plant went into operation in 2014.

Cyrq Energy's plant is supposed to supply 10 MW of electricity for Public Service Company of New Mexico. The plant draws water from a 250-degree, deep geothermal source. It has only been able to produce 4 MW so far, according to officials. Cyrq requested Oil Conservation Division permits this summer to build new wells to re-direct the geothermal water at shallower intervals.

The commission held more than five days of hearings before approving three new injection wells Oct. 9, the Albuquerque Journal reported (https://bit.ly/1NLEsll). The approval came with the caveat that the plant drives its pipes at least 150 feet below the shallow water resource. Charles Lakins, the attorney representing AmeriCulture, said the commission's decision was "a major victory for protection of groundwater."

Meira Gault, a rancher and president of the Hidalgo County Soil and Water Conservation Commission, said there is a great deal of confusion about the geological issues surrounding the expansion.

“How are you going to protect us? What are the measures? By asking them to case it 150 feet below the alluvium, I think that will help,” Gault said.

The commission will issue a final order on the matter in the coming days. But Cyrq Energy is happy about the outcome so far, spokesman Tom Carroll said.

“They are going to meet the conditions of the permit,” Carroll said. “They are not going to be injecting into the shallow drinking water aquifer.”

Two lawsuits between the two entities, however, remain ongoing. A Cyrq subsidiary filed a lawsuit against AmeriCulture and its owner in federal court in Santa Fe in June. AmeriCulture filed an amended complaint against Cyrq in state district court in Hildago County earlier this month.

—

Information from: Albuquerque Journal, https://www.abqjournal.com

Geothermal water dispute settled — for now

By Lauren Villagran / Journal Staff Writer - Las Cruces Bureau

Published: Thursday, October 15th, 2015 at 2:08pm
Updated: Friday, October 16th, 2015 at 6:10pm

COURTESY PHOTO Cyrq Energy Inc. operates the Lightning Dock geothermal power plant in southern New Mexico, shown here. The state Oil Conservation Commission has resolved a dispute over the plants intended expansion.

The Oil Conservation Commission has resolved — for now — a dispute over use of a geothermal water resource in the remote Animas Valley of southern New Mexico.

AmeriCulture Inc., a desert fishery that raises tilapia fingerlings, and a local water conservation board protested a plan by Cyrq Energy Inc. to expand its geothermal power plant, which has a deal to produce electricity for Public Service Company of New Mexico.

The three-member OCC has OK'd Cyrq's plan, with conditions that seem to have appeased all parties, but at least two lawsuits could keep the issue simmering for some time.

The tilapia fish farm and $43 million Lightning Dock power plant are a stone's throw from each other in the dry Animas Valley near Lordsburg. Both draw water in the area: the fishery from a shallow water source and the power plant from a 250-plus-degree, deep geothermal source.

The two businesses have been coexisting somewhat uncomfortably since the Lightning Dock plant began producing power in 2014 under a deal to supply Public Service Co. of New Mexico with 10 MW of electricity — part of PNM's long-term plan to meet renewable energy goals. PNM had earlier estimated that Lightning Dock would supply enough electricity for nearly 6,000 average homes.

So far the plant has been able to produce only 4 MW through its "closed loop" scheme of pulling up deep, geothermal water, running it through turbines to produce electricty and re-injecting the water back into the deep resource.

Under its initial operating permits, Lightning Dock was to reinject t
where it came, without letting it mix with groundwater used for don

This summer, Cyrq requested Oil Conservation Division permits to
apparently couldn't inject hundreds of thousands of gallons of wate
goal.

The local Soil and Water Conservation Commission joined AmeriC
proposed shallow injection wells.

After more than five days of hearings, the OCC on Oct. 9 approved
at least 150 feet below the shallow water resource.

AmeriCulture attorney Charles Lakins called the decision "a major

"There is a lot of confusion about this issue, geologically," said Mei
Conservation District. "How are you going to protect us? What are
help."

The commission's final order on the matter is expected in the coming days.

"Cyrq Energy is very happy," said spokesman Tom Carroll. "They are going to meet the conditions of the permit. They are not going to be injecting into the shallow drinking water acquifer."

This particular dispute may have been resolved, but the feud between the two companies continues.

A subsidiary of Cyrq sued AmeriCulture and owner Damon Seawright in federal court in Santa Fe in June; AmeriCulture filed an amended complaint against Cyrq in state district court in Hidalgo County earlier this month.

"They are not the friendly neighbors who have decided to mutually coexist," Lakins said.

Contact the writer.

Auto Racing

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Geothermal generation is clean, renewable, and cost-effective over the long term, and the U.S. has vast untapped geothermal resources. So why is it still operating on the sidelines?

For the U.S. geothermal energy industry, 2013 ended on a positive note. Cyrq Energy's Dale Burgett geothermal plant, a 4-MW unit in southwest New Mexico, began operating in December, the first geothermal project in a state with plenty of potential to generate electricity from the heat of the depths of the earth (Figure 1).

(https://cdn.powermag.com/wp-content/uploads/2014/09/PWR_0914_Geothermal_fig1.jpg)

1. Groundbreaker. The 4-MW Dale Burgett plant is the first geothermal project in New Mexico. *Courtesy: Cyrq Energy*

A 6-MW expansion is already under way, said the company, which has a contract for sale of electricity from the plant in the Lightning Dock geothermal area to Public Service of New Mexico (PNM). PNM will pay $97.97/MWh over 20 years, with a 2.75% annual escalator.

But the commissioning of the plant had a bittersweet taste. It marked the end of a year that saw little growth for the domestic U.S. geothermal industry, while the rest of the world was enjoying the best geothermal year in memory. International prospects are for continued solid growth, while the U.S. faces a less-promising future.

According to the Geothermal Energy Association (GEA), the U.S. industry's Washington lobbying group, "The international geothermal power market is booming, growing at a sustained rate of 4% to 5%. Almost 700 geothermal projects are under development in 76 countries. Many countries anticipating the threats caused by climate change realize the values of geothermal power as a base load and sometimes flexible source of renewable energy."

Some 530 MW of geothermal capacity came online around the world in 2013, "The most geothermal megawatts to become operational in one year since 1997." GEA reports some 12 GW in the development pipeline, and about 1,900 MW under construction in 15 countries (see sidebar "The International Scene").

The International Scene The U.S. has long been the world leader in geothermal energy, with most projects located in the tectonically active Rocky Mountain West. The U.S. has some 3,442 MW of geothermal general capacity, far above that of any other country. The Philippines is next with about 1,904 MW, followed by Indonesia with 1,333 MW. However, the country with the highest geothermal penetration is Iceland (see "Iceland's Uniqueness Extends to Electricity (http://bit.ly/TEyZD2)" in the POWERblog), which gets 30% of its power from hot rocks and high-temperature steam. By contrast, U.S. geothermal generation accounts for about 0.3%.Other countries, growing faster than the U.S., are gaining on Uncle Sam. According to the Geothermal Energy Association "2014 Annual U.S. & Global Power Production Report," "Some countries are growing so quickly there could be a time in the near future when the United States is no longer the world leader in geothermal power, despite its vast supply of geothermal resources."Among the international highlights:

■ Indonesia has 63 projects planned, representing 4,400 MW of capacity. Whether the country, which faces serious bureaucratic and business obstacles, can actually bring all these projects into service is an open question. But the potential is there.

■ In energy-poor Chile, the government has scrapped a controversial 2,750-MW planned hydro project in the remote and beautiful Patagonia region after environmental groups raised objections. Instead, the government is looking at increased liquefied natural gas imports, efficiency measures, wind and solar in the Atacama Desert, and geothermal. The GEA estimates that Chile is looking at 54 "early-stage projects or prospects."

■ Africa is a largely untapped geothermal play, particularly in the tectonically active Rift Valley region. According to the GEA, "Kenya and Ethiopia are building power plants greater than 100 MW." By contrast, the average U.S. geothermal plant is around 25 MW. Kenya has 18 projects planned, with total capacity of about 800 MW, while Ethiopia has eight projects planned, with capacity of just over 1,000 MW.

■ The Philippines has 29 geothermal projects under development, with a total capacity of about 750 MW. According to the International Geothermal Association, the Philippines privatized its previously government-owned geothermal system five years ago.

By contrast, while the U.S. has the largest number of planned geothermal generating projects in the pipeline, at a total of 124, the total capacity of those projects is just 1,000 MW, demonstrating that smaller projects dominate in the U.S. geothermal market.

Cloudy Future in the U.S.

The picture is clouded in the U.S., the GEA reports, where "in 2013 the U.S. market was a quieter place to do business." U.S. geothermal growth was flat compared to 2012, said the organization, with about 85 MW of new capacity during the year. Says GEA, "This number is about 40% lower than the capacity additions (148 MW) of 2012 and reflective of the difficulty in building a new power plant in the U.S. right now due to a number of policy barriers.... Simply put, the U.S. geothermal industry is trending opposite of the international market, which is growing at a steady 4% to 5% per year."

Flexible Operation of Nuclear Power Plants Ramps Up (https://www.powermag.com/flexible-operation-of-nuclear-power-plants-ramps-up/?mypower)

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VIDEOS & INFOGRAPHICS

AN ICONIC NUCLEAR PLANT SHUTS DOWN

The Oyster Creek Nuclear Generating Station in New Jersey, the oldest operating nuclear plant in the U.S., was shut down on September 17, 2018.

For more, see "**Oldest U.S. Nuclear Plant Shuts Down** (https://www.powermag.com/oldest-u-s-nuclear-plant-shuts-down/)."

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UPCOMING EVENTS

- ESA's Annual Energy Storage Conference & Expo, 04/16 - 04/18 (http://esacon.energystorage-events.org/)
- ELECTRIC POWER, PRESENTED BY POWER MAGAZINE – 21st ANNUAL, 04/23 - 04/26 (http://www.electricpowerexpo.com)
- CTOTF Spring 2019 Conference, 04/28 - 05/02 (http://www.ctotf.org/)
- AWEA WINDPOWER 2019 Conference & Exhibition, 05/20 - 05/23 (https://www.windpowerexpo.org/)
- ARC's 17th India Forum: Driving Digital Transformation in Industry and Cities, 07/04 - 07/05 (https://www.arcweb.com/events/arc-industry-forum-india)
- POWER WEEK ASIA, 11/11 - 11/15 (www.power-week.com/Asia)
- 2020 IEEE PES Transmission & Distribution Conference & Exhibition, 04/20 - 04/23 (https://www.ieeet-d.org/?utm_source=PowerMag&utm_medium=EventListing)

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Raser Technologies Begins Drilling Its First Production Well at Its Lightning Dock, New Mexico Project

Early Exploration Surveys Of The Lightning Dock Project Provide Promising Data

raser TECHNOLOGIES

NEWS PROVIDED BY
Raser Technologies, Inc. →
Jan 13, 2011, 08:00 ET

PROVO, Utah, Jan. 13, 2011 /PRNewswire/ -- Raser Technologies, Inc. (OTC Bulletin Board: RZTI), a renewable energy company, announced today that it has begun drilling its first production well at the Company's second geothermal power project, Lightning Dock, NM. Once complete, Raser expects the Lightning Dock project will produce 15 MW available for sale.

(Logo: http://photos.prnewswire.com/prnh/20110113/LA29571LOGO)

Director of Project Development, Mike Hayter said, "We are excited to move forward with our development plans for Lightning Dock, a joint venture between FE Clean Energy Group and Raser Technologies. We have spent the last several months studying data from a well we recently re-entered and from several additional surveys, including a magnetotellurics (MT) survey, which is an electromagnetic geophysical method used to image the Earth's subsurface. We feel confident that the data collected thus far indicates a promising geothermal resource."

Raser recently announced that its subsidiary project company, Lightning Dock Geothermal No. 1, HI-01, LLC, signed an agreement with Evergreen-FE Lightning Dock, LLC, a collaboration between the FE Clean Energy Group and Evergreen Clean Energy, LLC to fund the development of the project and a term sheet with Ormat Nevada, Inc., a subsidiary of Ormat Technologies, Inc. (NYSE: ORA), to provide the Engineering, Procurement and Construction (EPC) services to the Lightning Dock geothermal project.

Section 1705 of the American Recovery & Reinvestment Act as an option for long term financing of the Lightning Dock project.

About Raser Technologies

Raser Technologies (**OTCBB: RZTI**) is a renewable energy company focused primarily on geothermal power development. Raser develops clean, renewable geothermal electric power plants with one operating plant in southern Utah and eight active and early stage projects in four western United States: Utah, New Mexico, Nevada and Oregon, as well as a concession for 100,000 acres in Indonesia. Raser is also exploring the development of solar and wind power on its existing land portfolio. Further information on Raser may be found at: www.rasertech.com.

Cautionary Note Regarding Forward-Looking Statements

This press release contains certain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934, including, but not limited to, statements regarding; our beliefs about the proposed Lightning Dock geothermal power project; our believes about the Lightning Dock geothermal resource and our ability to develop a commercially viable project; our beliefs about the strength and enforceability of our agreements; our belief about our ability to obtain financing and develop future geothermal projects and the geothermal industry in general. These forward-looking statements involve certain risks and uncertainties that could cause actual results to differ, including, without limitation, the competitive environment and our ability to compete in the industry; our ability to attract, train and retain key personnel; and such other risks as identified in our quarterly report on Form 10-Q for the quarter ended September 30, 2010, as filed with the Securities and Exchange Commission, and all subsequent filings.

All forward-looking statements in this press release are based on information available to us as of the date hereof, and we undertake no obligation to update forward-looking statements to reflect events or circumstances occurring after the date of this press release.

Raser Technologies, Inc.
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SOURCE Raser Technologies, Inc.

Utah Firm To Build Geothermal Plant in N.M.

By Associated Press

Published: Tuesday, November 29th, 2011 at 5:19am
Updated: Tuesday, November 29th, 2011 at 5:20am

ANIMAS (AP) — A Utah-based clean energy firm is one step closer to building a geothermal power plant in southern New Mexico.

Cyrq Energy Inc. subsidiary Lightning Dock Geothermal has signed a $65 million engineering, procurement and construction contract with Ormat Nevada Inc. to build the binary plant near Animas.

In addition to building the plant, Ormat will provide construction financing.

Officials with the project say the Lightning Dock plant is expected to come online by the end of 2013. Early engineering will start as soon as the basic well field characteristics are confirmed.

Cyrq Energy emerged as a restructured company following the bankruptcy of Raser Technologies. Cyrq has one operating geothermal power plant in southern Utah in addition to geothermal interests in other states and Indonesia.

Ormat signs EPC contract with Lightning Dock Geothermal/ Cyrq Energy

Ormat Technologies via Ormat Nevada Inc. signs EPC contract for the Lightning Dock geothermal project in New Mexico with Cyrq Energy (formerly Raser Technologies).

In a release by Ormat Technologies, the company announces that its its wholly-owned subsidiary Ormat Nevada Inc., "signed a $65 million engineering, procurement and construction (EPC) contract and a credit agreement with Lightning Dock Geothermal HI-01, LLC (LDG), a subsidiary of Cyrq Energy, Inc., in connection with the construction of LDG's geothermal project in New Mexico."

Cyrq Energy is the new name for Raser Technologies, that was recently restructured under bankruptcy proceedings in the United States.

"The EPC contract work is scheduled to be released in stages based on LDG's progress in the well field drilling and development necessary to support the project. Early engineering will be released as soon as the basic well field characteristics are confirmed in order to maintain the project schedule. Further work will be released based on the progress of the well field development. Under the credit agreement Ormat will provide financing in an aggregate principal amount not to exceed $66 million that will be used to finance the project construction costs under the EPC contract with LDG. The project is expected to come online by the end of 2013.

Yoram Bronicki, President and COO of Ormat Technologies, said, "The Lightning Dock project is an opportunity to match Ormat's execution capabilities with Cyrq Energy's front-end development that we hope will enable swift project execution. This project is part of a broader initiative between our two companies to co-develop projects at a fast pace, while adhering to the traditional risk distribution between Owner and Constructor."

Source: PR Newswire via Sacramento Bee (http://www.sacbee.com/2011/11/28/4084630/ormat-signs-an-epc-contract-with.html)

Ormat signs EPC contract with Lightning Dock Geothermal/ Cyrq Energy

Ormat Technologies via Ormat Nevada Inc. signs EPC contract for the Lightning Dock geothermal project in New Mexico with Cyrq Energy (formerly Raser Technologies).

In a release by Ormat Technologies, the company announces that its its wholly-owned subsidiary Ormat Nevada Inc., "signed a $65 million engineering, procurement and construction (EPC) contract and a credit agreement with Lightning Dock Geothermal HI-01, LLC (LDG), a subsidiary of Cyrq Energy, Inc., in connection with the construction of LDG's geothermal project in New Mexico."

Cyrq Energy is the new name for Raser Technologies, that was recently restructured under bankruptcy proceedings in the United States.

"The EPC contract work is scheduled to be released in stages based on LDG's progress in the well field drilling and development necessary to support the project. Early engineering will be released as soon as the basic well field characteristics are confirmed in order to maintain the project schedule. Further work will be released based on the progress of the well field development. Under the credit agreement Ormat will provide financing in an aggregate principal amount not to exceed $66 million that will be used to finance the project construction costs under the EPC contract with LDG. The project is expected to come online by the end of 2013.

Yoram Bronicki, President and COO of Ormat Technologies, said, "The Lightning Dock project is an opportunity to match Ormat's execution capabilities with Cyrq Energy's front-end development that we hope will enable swift project execution. This project is part of a broader initiative between our two companies to co-develop projects at a fast pace, while adhering to the traditional risk distribution between Owner and Constructor."

Source: PR Newswire via Sacramento Bee (http://www.sacbee.com/2011/11/28/4084630/ormat-signs-an-epc-contract-with.html)