

CLEANER ENERGY AT STABLE PRICES: **THE VALUE PROPOSITION OF SOLAR FOR MINES**

Published by **ENERGYANDMINES**

part of  CANADIAN CLEAN Energy Conference

www.energyandmines.com/toronto



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Michelle Chislett
Vice President and
Country Manager
SUNEDISON

Michelle Chislett, SunEdison's Vice President and Country Manager, Canada, describes an evolution in the solar market over the past five years that is making this form of renewable energy far more attractive to mining companies today.

Q: How do you see the market for solar projects for mines evolving?

A: We see a large opportunity. The costs for solar energy are declining globally, and when you compare the costs of solar to other forms of generation that mines use, such as diesel, solar is not only cleaner, it's less expensive. So, it's really a no brainer.

Over the last five years, the cost of solar has gone down by more than 50 percent, primarily due to the decrease in module costs and efficiencies in the construction process. SunEdison expects similar declines in cost to occur in the coming years. In fact, it is SunEdison's goal to have 400-watt modules priced at \$0.40 per watt within the next five years.

Solar is easy to deploy across the globe. Our con-

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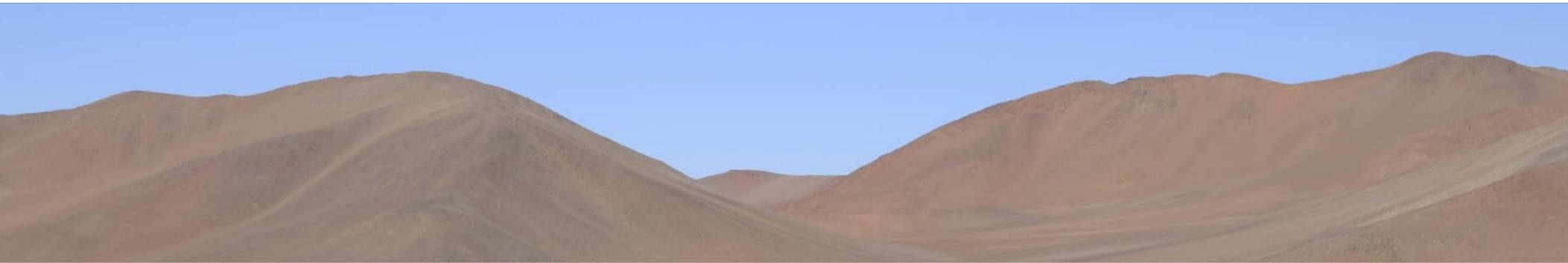
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“We also recently signed a second mine for a 69 MW project in Chile and that project is currently under construction. We plan to leverage this experience to service the global mining industry.”

struction timelines, coupled with our expert operations and maintenance team, make SunEdison a cost leader in the industry. Because of these various factors we’re going to see strong global growth in solar deployment in the mining sector.

Q: How is SunEdison positioning itself to deliver solar solutions for mines around the globe?

A: First and foremost SunEdison is present on every major continent and we’re well positioned to service global mining customers.

Secondly, SunEdison is a clean energy provider, and we’re capable of creating innovative solutions for mines across the world. Lastly, we’re not only strategically positioned to deliver solar for mines around the world, we’re already doing it with our 100-megawatt plant in Chile. We also recently signed a second mine for a 69 MW project in Chile and that project is currently under construction. We plan to leverage this experience to service the global mining industry.

Q: While we have seen a number of three-to-five megawatt projects, large-scale solar for mining off-takers is still fairly rare. Do you think this will change in the near term?

A: We’re already seeing that change with our 100-megawatt project. Many of the projects we see

“SunEdison is present on every major continent and we’re well positioned to service global mining customers..”

around the world are the smaller, three-to-five megawatt projects. The reason why we haven’t seen too many larger projects is land availability, or finding land close to the mine that isn’t already slated for future extraction. That’s a big constraint.

However, we are starting to see interest in the concept of wheeling power to mines. You could build [a solar plant] 50 kilometers away and wheel the power to the mine, which is a way around the land constraint problem. The wheeling of power is happening in two ways. First, renewable energy companies build where land is available, and then enter into a PPA off-take agreement with a mine to supply power at a certain rate. Another less common way to do this is to build wherever the land is available and then connect a dedicated, physical line or feeder to the mine.



“Some of the smaller mining companies that are more flexible in their approach may be quicker to take on new ideas and new technologies than the larger companies”



Q: When you look at the business development opportunity for solar for mines, where do you see the greatest opportunities?

A: Solar brings a big benefit for mines when they're off grid. That's really where there's a huge opportunity to offset diesel and drive down energy costs. We're also seeing development opportunities where grid reliability is an issue. A lot of regions don't have the power supply stability for their mines. And then there's the issue of pricing stability. With solar, you know the cost of your fuel is zero for years to come with just minor O&M costs.

Q: How would you describe the value proposition of solar to the CEO of a mining company?

A: Solar is beneficial in many ways. Solar is cleaner than diesel, and it helps decrease the energy costs for a mine, which not only increases profitability, but most significantly, extends the life of the mine. That's it in a nutshell.

Some of the biggest costs for mines are their energy costs. Energy constitutes their biggest project life-cycle cost and those costs have the greatest variabil-

ity. If you can decrease those costs - and provide a measure of stability - that in turn will increase the profitability of the mines and allow them to focus on what they do best: extraction of all sorts of natural resources. Energy costs are front and center. That's the essence of our message to mining companies.

Q: What do you think still needs to happen for solar to become a mainstream energy option for the global mining sector?

A: We talk about this a lot at SunEdison. We need to see costs continue to decrease. SunEdison is laser-focused globally on innovation; innovation is part of our culture and we devote a great deal of time focusing on it. And our innovation is not just targeted to technologies, but to decreasing costs and being more efficient. Over time, innovation and lowering costs will be the biggest catalysts for solar in mining applications. ■

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