



Guaranteeing Operational Savings and Securing Power for Remote Mines

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Operational results from islanded grids will go a long way in informing the mining sector's energy evolution for remote sites. SIEMENS' hybrid solution will soon be in operation in Wilpoldsried, a small German town which has decided to go completely off-grid with the cooperation of its local utility.

SIEMENS is developing a customized hybrid solution that combines solar, wind, biogas and biofuel sources to supply reliable power and ancillary services to the community. "We consider this as a good testing case for the SIEMENS hybrid solution since it incorporates all the relevant elements needed for a mining environment," reports Andreas Boes, Sales Manager, SIEMENS.



Andreas Boes
Sales Manager,
SIEMENS

In this week's Industry Q&A, Boes provides insight on the latest developments in remote power solutions, fuel-savings options, financing structures and unlocking the true potential for mining and renewables partnerships in South America.

Q At what stage in a mine's life does it make the most sense to consider renewables integration?

A It makes most sense to analyze the integration of renewables in the generation matrix of mines at the feasibility stage of the mining site development. This is the phase when all options can be studied in the required depth and the best solution can be cho-

sen. When the mine is already in operation, you have to look at the remaining life of mine to understand the ROI of integrating renewables.

Q Project finance can be a major challenge for moving renewable hybrid projects forward. Is the market adapting to overcome investment hurdles for new projects?

A The financing side still needs to improve for hybrid plants. Since hybrids are perceived as a new technology, traditional investors tend to shy away from this market. New investors with different focuses and risk profiles are needed to open the way for more traditional renewable energy lenders to invest.

Many mining companies do not want to find themselves in a position of having renewable assets on their balance sheet and having to service them. They want to concentrate on the business of mining which is very sound approach. So new players need to come in to fill the gap and take over ownership of these assets. We're happy to see that happen with some new players coming in with attractive financing options. But this process needs to gain more momentum in order for renewables to be deployed on a broad scale in the mining sector.

Q What do you think needs to happen to unlock the potential for renewables solutions for mines in Chile and across South America?

A Firstly, the mining sector needs to acquire knowledge on the options available for integrating renewables into the power supply. This can be done by gaining their own expertise or by seeking consultancy support. However it's important to point out that not much expertise is currently available for assessing hybrid options which is why technol-



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Chilean mines are actively seeking new energy solutions to reduce and secure energy costs for grid-connected and off-grid operations. With energy accounting for 20-40% of operating costs, reducing electricity expenditure is now a major operational and strategic goal for Chile's mining leaders and renewables is set to play a significant role in meeting this aim for remote and grid-tied mines

Following sell-out events in Toronto and Johannesburg, the 4th Renewables and Mining Summit & Exhibition will showcase the latest renewables-mining projects from Chile and address the key challenges for additional projects including innovative finance solutions.

Join representatives from mines and the renewable industry including:



Visit www.energyandmines.com/chile for full details, or call +1 613 627 2787



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– **Andreas Boes**
Sales Manager, SIEMENS

ogy partnerships with suppliers are necessary. SIEMENS has developed a comprehensive toolbox of consultancy services in this specific area ranging from initial studies to full-fledged feasibility studies for hybrid power plants.

Secondly, mines should be looking for turnkey EPC solutions when integrating a hybrid plant into its power supply. Because there is limited knowledge of hybrid solutions, especially with high penetration plants, it is best to work with a specialized and experienced EPC supplier with strong financial backing to ensure project success.

🕒 **One of the key concerns for Chilean mines is the intermittent nature of wind and solar – how are you addressing this concern with your hybrid solution?**

Ⓐ SIEMENS has developed a performance guarantee solution which gives the mine the security that not only each of the components of the plant operate as specified, but also that the overall plant de-

livers the required results by securing a stable grid operation and power supply at a minimum cost – 24/7. This is the SIEMENS Hybrid Power Plant Guarantee.

🕒 **What sort of fuel-savings can mines expect from renewables integration for remote sites today?**

Ⓐ The fuel savings from renewables integration in a high peak penetration solution can be considerable, but depends ultimately from the available resource. Chile has the best solar resource on the planet, so around 30-35% is possible with solar PV today at acceptable power generation costs. With a good wind resource, renewables generation can go well beyond 40%. With wind and solar, you can push well beyond 60% in some cases at acceptable power costs with a good ROI.

With SIEMENS hybrid solution, we can reach these levels without compromising reliability of supply, which is essential for a mining operation.