

9-10-2012

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Inter-American Dialogue's Latin American Energy Advisor

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Recommended Citation

Inter-American Dialogue's Latin American Energy Advisor. "Will opposition to mega projects worsen Chile's energy woes?" (2012). https://digitalrepository.unm.edu/la_energy_dialog/15

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Q and A: Will Opposition to Mega Projects Worsen Chile's Energy Woes?

Citation: Inter-American Dialogue's Latin American Energy Advisor, September 10-14, 2012; pp. 1, 3, 6. Also online at www.thedialogue.org.

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Chile's Supreme Court last month unanimously rejected the \$5 billion Castilla power project, ruling that the 2,100-megawatt plant could "harm the constitutional guarantee that one can live in an environment free of pollution." Meanwhile, industry leaders, particularly in the mining sector, have warned that the country's shaky electrical grid is hampering growth and investment. Does the rejection of the Castilla plant represent a major blow to Chile's energy future? How serious are the country's energy woes? Will solar, wind and other cleaner energy sources become more prevalent and help make up some of the shortfall or are they too economically infeasible on a larger scale?

A: Craig Kelly, former U.S. ambassador to Chile and vice president of The Cohen Group in Washington:

"If there is any country that needs an 'all of the above' energy strategy, it is Chile. Endowed with few hydrocarbons, but facing rising energy needs driven by one of the region's most successful economies and a world-class but energy-thirsty mining sector, Chile has developed an energy strategy that calls for development of all practical sources. These include hydro (already a key part of Chile's electricity matrix), domestic and imported gas, increasing oil exploration in the southern region of Magallanes, geothermal, coal and increased non-hydro renewable energy. Several of these projects—especially large hydro and coal—have drawn criticism on environmental grounds. But critics who fault the Chilean government's plan on environmental grounds underestimate what Chile is already doing in renewables (including a successful renewable energy conference in Santiago last week and a growing array of solar and wind projects that draw on domestic and foreign expertise) and overestimate the capacity of non-hydro renewables to address the shortfall in Chile's power needs. Even under the most optimistic scenarios, non-hydro renewables will make up no more than 20 percent of Chile's electricity matrix by 2030. It is a mistake to view Chile's energy dilemma as a choice between the social goals of environmental stewardship and the economic goal of growth. Continued poverty alleviation and increased social inclusion are also vital social goals, and they require economic growth—and increased energy. To address multiple, overlapping and at times conflicting priorities, a national debate involving all stakeholders is valuable in achieving consensus that addresses all priorities and eschews false dichotomies. Chile's strong democratic institutions and vibrant press are well-suited to this debate."

A: Miguel Schloss, president of Surinvest in Santiago:

"The Supreme Court's decision is symptomatic of prevailing weaknesses in the power sector, and a solution will need to address its underlying problems. Chile has tended to react with the necessary gradual reforms when it has been jolted by crises. In the 1980s, it set up a fairly resilient and competitive power generating system that served the country well. The price signals, however, provided incentives aimed at minimizing costs, with limited attention to: first, energy security, which thus resulted in investments concentrated on a single source (low-cost natural gas); and second, environmental implications. The cancellation of gas export contracts from Argentina in 2007, combined with a significant drop in hydro flows, made the underlying vulnerability of the system evident. The crisis brought about further liberalization in pricing, which facilitated investments that diversified energy sources. The recent ruling against the Castilla project may well be the harbinger for much needed strengthening of the environmental framework, either on the regulatory or the pricing side. Until this is done, we will continue seeing the pulling and pushing between environmentalists and energy producers, which reflect institutional inability to reconcile such conflicts in an effective way. In any event, the current system has put the country under stress, and no amount of alternative energy can replace 2,100 MW in an affordable and technically reliable manner. Reliance on renewables would be desirable, but for now they represent only some 2 percent of global supply and are comparatively costly. If renewables are going to be a significant part of the solution to energy needs in Chile and around the world, their costs must be brought down. Accordingly, policymakers must focus on affordability and enabling conditions for environmentally friendly energy development, which cannot be established without assessment of their implications. Future efforts will inevitably have to be directed toward: (i) improving the use of existing technologies; (ii) introducing market-based instruments that price externalities and can change environmental behavior; (iii) providing funding and support for 'public goods' including R&D for technological development; and (iv) designing policies that factor implementation and enforcement."

A: Rodrigo Fernández Hirsch, project manager at Energética:

"The Supreme Court unanimously rejected the project last month. It is a strong verdict that changes the country's perception of future coal projects and will probably change the future development of the Central Interconnected System (SIC). There are still three coal fired plants with environmental approval that will likely be constructed; however the energy from these plants won't be enough to meet future demand. How Chile will meet energy demands is the question that haunts the electricity sector. Alternatives exist; however all of them imply higher energy prices than currently expected using coal. LNG looms as the most probable solution, but high gas prices necessarily will be translated to energy prices around \$130 per MWh for industrial consumers. Major mining projects are proposed, but they require competitive energy prices. Notwithstanding the supply situation and high prices, not everyone is upset. Non-conventional renewable energy (NCRE) developers see an opportunity for the sector. Wind and solar projects in Chile need energy prices around \$110- 120 per MWh to be constructed and it could be easier to achieve them without new coal-fired plants. Almost all big consumers that are asking for supply offers are receiving spot market pass-through schemes. Particularly in the third region (Atacama), due to transmission constraints, spot market energy prices are expected to be high for at least eight more years. Coincidentally, it is the best location for solar power. In this

scenario, solar power comes out as a good option for mining companies to put a cap on energy prices, at least to meet a part of their demand. The SIC will have to develop gas-fired combined-cycle units, making energy prices high. This situation is the perfect incentive for NCRE development because their prices are competitive and combined-cycle units are very flexible in their operation. This makes the operation of wind and solar power plants easier, so large scale NCRE plants (greater than 100MW) are more likely to be constructed."

A: Nelson Altamirano, associate professor of economics at the School of Business and Management at National University:

"The rejection of the Castilla project by the Supreme Court certainly delays a needed energy supply expansion, but we have to wait to know if this rejection killed the project or not. The Chilean government's objective is to double its energy generation capacity by 2020, and this is only possible with mega projects and small projects that combine traditional and non-traditional fuels and technologies. HidroAysén in the south and Castilla in the north would add 5,000 megawatts, but are facing local environmental challenges and major delays. I don't see how Chile would meet its energy goals by 2020 without these two mega projects, so I expect there will be additional efforts to meet environmental requirements and social demands. If Castilla is definitely terminated, it may open an opportunity for the Bolivian and Chilean governments to re-evaluate exporting natural gas to the northern part of Chile and create the conditions for a private mega project based on natural gas instead of coal. But given the current political and social conditions in both countries, it is more likely that institutions will prevail in Chile and Castilla will be modified to meet constitutional environmental rights."

The Energy Advisor welcomes responses to this Q&A. Readers can write editor Gene Kuleta at gkuleta@thedialogue.org with comments.