Renewables, Becoming Cheaper, Are Suddenly Passé

Jonathan A. Lesser

In my two previous columns,[1] I discussed ways to compare the benefits and costs of energy development. In the first of those two columns, I remarked, "Whatever, wherever, and whenever a new development is announced, someone or some group will immediately denounce it as endangering something, somewhere, somehow."

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However, when I wrote that, I had not anticipated the catfight that has engulfed the Sunrise Power Link Transmission Project. Sunrise is a high-voltage transmission project proposed by San Diego Gas & Electric (SDG&E) specifically to develop wind, solar, and geothermal resources in southern California and the Baja Peninsula. Yet the battle lines have been drawn—and deeply—between environmentalists who are viscerally opposed to Sunrise and renewables advocates who see Sunrise as a key step in meeting California's renewable portfolio and greenhouse gas emission reduction goals.

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On October 31, 2008, an administrative law judge (ALJ) for the California Public Utilities Commission (CPUC) issued a proposed decision denying SDG&E the go-ahead to build the line.[2] The ALJ found, contrary to SDG&E's claims, (1) that the project was not needed to meet SDG&E's 20 percent renewable portfolio standard (RPS) obligation; (2) that a 20 percent RPS obligation was not, in any case, economic; (3) that the project would have "significant and [unmitigatable] impacts on the environment"; and (4) that there were cheaper and less environmentally harmful alternatives available to SDG&E to meet its reliability and renewable energy needs. Moreover, the ALJ found that building Sunrise could allow coal-fired electrons to sneak in, defeating the state's greenhouse gas reduction goals. Instead of Sunrise, the ALJ recommended that SDG&E pursue what were termed the "All-Source Generation Alternative" and the "In-Area Renewable Alternative." The All-Source Generation Alternative calls for the development of a mix of local gas-fired generation, renewable generation, and combined heat and power (CHP, or basically cogeneration). The In-Area Renewable Alternative calls for a combination of solar-thermal

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power consisting of over 200 megawatts of rooftop solar photovoltaics (about 60,000 homes), biomass, and wind power.

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On November 18, 2008, CPUC President Michael Peavey issued an Alternate Proposed Decision recommending approval of Sunrise.[3] President Peavey's decision found that, of the alternatives, Sunrise would (1) cause the least environmental impact, (2) provide ratepayer benefits, and (3) "deliver renewable generation that would otherwise remain unavailable." President Peavey also said that the project would "provide a number of desirable, but unquantifiable, reliability benefits—a more robust southern California transmission system, and provide insurance against unexpected high load growth in SDG&E's service area, among other things."[4]

ARE THERE "GOLDILOCKS" RENEWABLES?

How could the ALJ and President Peavey look at the same economic and environmental studies—including an 11,000-page Environmental Impact Statement—and come up with diametrically opposed conclusions regarding the benefits and costs of Sunrise? In fact, they could have done this quite easily, because the two decisions weighed the categories of economic and environmental impacts differently.

The ALJ weighed local environmental costs, as well as so-called community values, most heavily and concluded that those costs would outweigh the benefits of commercial-scale renewable resources. President Peavey weighed global climate change and the state's greenhouse gas emission reduction targets most heavily and concluded that the benefits of reduced greenhouse gas emissions afforded by commercial-scale renewable generation, and the lower costs of that generation relative to installing thousands of rooftop solar projects outweighed the local environmental impacts of building the line.

Which view is correct? Both, or neither, depending on how one ranks the relative importance of environmental and economic issues. For those who want the most renewable energy at the lowest cost, there really are no alternatives to Sunrise. Without it, or equivalent transmission originating in the Imperial Valley, the area's huge potential wind and solar resources cannot be usefully developed.[5] Nevertheless, there are those who believe that avoiding local environmental impacts is absolutely indispensable or essential for energy planning. For these benighted souls, building Sunrise or any transmission line that facilitates large-scale renewable development will be anathema, no matter what the additional cost.

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THINK GLOBALLY, ACT LOCALLY

One of the more colorful alternative proposals for meeting San Diego's reliability and renewable energy needs focused almost exclusively on local resources. The proposal, called San Diego Smart Energy 2020, emphasizes intensive conservation and rooftop photovoltaics (PV) rather than large-scale renewable generation development such as would be spurred by Sunrise.[6] According to the report, over 2,000 megawatts of rooftop solar PV can be installed in the San Diego area by 2020 with $1.5 billion in incentive payments.[7] (The report also relies on Department of Energy forecasts that PV will be cost-competitive with fossil-fuel generation by 2015; this begs the question as to why there will be a need for huge subsidies, but that is a small economic quibble.) Moreover, the proposal would require all new buildings to be "energy-neutral"—that is, equipped with enough solar PV to offset all of their energy use. Under the plan, San Diego would also reduce its electric consumption by 20 percent below 2003 levels and peak energy demand by 25 percent, using massive weatherization programs, "smart" meters, and a rebuilt "smart" power grid,[8] and direct load control of thermostats.

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details. For example, installing rooftop PV units is not as simple as screwing in compact fluorescent light bulbs. It will require significant work to ensure that the systems can be installed safely, that they will perform as expected, and that their presence on thousands of homes that intermittently feed power to the grid does not adversely affect voltage stability. (No doubt, the smart grid will have been educated sufficiently to deal with this, but even an Einstein can be wrong now and then.)

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Twenty years ago, the push for renewable generation of any kind was still in its infancy. Thus, it is ironic that, as the costs of commercial-scale renewables have dropped and the goal of cost parity has grown nearer, so too has the level of opposition to developing those resources and building the necessary transmission infrastructure to deliver their power. And so now a new and more expensive "local-only" renewable mantra has appeared. Perhaps, once the costs of "local" renewables have declined sufficiently, they, too, will fall from grace.

NOTES

1. (2008, October). Comparing the benefits and the costs of energy development. *Natural Gas & Electricity*, p. 31, and (2008, December). Measuring the costs and the benefits of energy development. *Natural Gas & Electricity*, p. 31.
2. Before the Public Utilities Commission of the State of California, *In the Matter of the Application of San Diego Gas & Electric Company (U 902 E) for a Certificate of Public Convenience and Necessity for the Sunrise Powerlink Transmission Project*. Application 06-08-010, Decision Denying a Certificate of Public Convenience and Necessity for the Sunrise Powerlink Transmission Project, October 31, 2008. Available at http://docs.cpuc.ca.gov/efile/PD/93071.pdf.
3. Before the Public Utilities Commission of the State of California, *In the Matter of the Application of San Diego Gas & Electric Company (U 902 E) for a Certificate of Public Convenience and Necessity for the Sunrise Powerlink Transmission Project*. Application 06-08-010, Alternate Proposed Decision of President Peavey, Decision Granting a Certificate of Public Convenience and Necessity for the Sunrise Powerlink Transmission Project, October 31, 2008. Available at http://docs.cpuc.ca.gov/efile/ALT/93956.pdf. A third Alternative Decision was issued on October 31, 2008, by Commissioner Gruenich. This decision approved the project but would require strict monitoring of electrons by SDG&E.
4. On December 18, 2008, the Commission voted 4–1 to adopt President Peavey's Alternate Decision. It remains to be seen whether this ends the legal wrangling over the proposed line.
5. Some environmentalists suggest the Comisíon Federal de Electricidad (CFE), Mexico's government-run electric utility, should upgrade its transmission system near the border to allow more renewable electricity to flow from Baja into the San Diego area. What these proponents apparently fail to understand is that, by doing so, CFE would incur significant costs but obtain no benefits for its Mexican ratepayers. However, building Sunrise would allow Mexico to develop wind and solar resources in the La Rumarosa region, just south of the California-Mexico border, thus benefiting both California and Mexican ratepayers.
6. Available at http://www.sdsmartenergy.org/11-oct-07_SD_Smart_Energy_2020_report_complete_FINAL1.pdf.
7. The report estimates the cost of installing rooftop solar with battery storage at $8,000/kW before all of the various tax credit and depreciation incentives—ultimately paid by someone else. Currently, utility-scale PV can be developed for under $4,000/kW, while concentrating solar (with storage) can be built for around $4,500–$5,000/kW.
8. There seems to be no one definition of a "smart" power grid. Apparently, it will include two-way communications to monitor and control appliances, real-time pricing, localized power storage, and loudspeakers in every home that tell you to turn the lights off. [There is a Wikipedia definition that, among other things, excludes the loudspeakers, but in the October 2008 issue of *Natural Gas & Electricity*, Stephen Chapel in his article "Smart Grid Economics: Three Stories Bring Up Issues" pretty well deconstructs that definition as "blatant advertising." That issue was a special issue about the smart grid. *Ed.*]

ERRATA

Due to an error in GAS 25-6, (January 2009) the final paragraph in the column by James J. Hoecker, *Dear Mr. President-Elect…* was not printed in its entirety. The final paragraph is printed below in its entirety.

It will be critical to adequately staff the agencies that will do the work while conforming their budgets and legal authority to new policies and priorities. Such major realignments have not occurred since the 1970s, despite the intervening changes in the energy economy. An overlay of new political management will not be sufficient to make the kind of transformative change the electorate has been encouraged to expect.

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