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Overseer's Undercurrent Money by Wire

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Among the many hurdles faced by would-be developers of electric transmission lines is the issue of economic viability. For simple people like myself, that amounts to answering the basic question, "Is this project worth more than it will cost?"

Answering that question is anything but simple, however.

Under the old, pre-restructured utility system in California, it used to be a whole lot easier to make such a calculation, but the results were not always to the benefit of the utility developer, its customers, or the state as a whole. In fact, there was often a mismatch between estimated costs and perceived benefits under a system that simplified the analysis to whether you could prove that building a new high-voltage transmission line that invariably crossed utility territories (or maybe even state lines) was cost-effective for the particular utility sponsoring the project.

A case in point: the infamous Path 15 upgrade, which was initially sought by Pacific Gas & Electric to resolve constraints between Northern and Southern California. But PG&E could not convince the California Public Utilities Commission that the benefits of the project outweighed the costs to utility customers north of the bottleneck - despite the fact that the congestion costs of moving power through the bottleneck amounted to far more than the costs of fixing the problem. Those costs were being borne broadly, so the benefits of avoiding the costs appeared diffuse.

Eventually, a third-party developer took on the project, successfully taking most of the economic analysis out of the state's hands - except for PG&E's substation upgrades to accommodate the line upgrade.

Subsequently, the CPUC changed its rules to better fit the now-understood fact that certain benefits accrue beyond a single territory and they might last a lot longer than the relatively short time span that was previously used for analysis.

We went for a very long time without needed upgrades to the transmission system as a consequence of the old regime. The energy crisis and the Eastern blackout of 2003 changed all that, and now several major projects are lined up - much like towers marching across the landscape.

But the CPUC, to its credit, continues to refine its way of analyzing the economics of new high-voltage transmission lines. The most significant changes occurred in a decision issued last November that set up both a new evaluation methodology and a substantive change in regulatory policy.

This was to afford the California Independent System Operator a prime role in performing the economic analysis, first by adopting much of CAISO's "Transmission Economic Assessment Methodology" (TEAM) approach and, perhaps even more importantly, by creating a "rebuttable presumption" in favor of an evaluation approved by CAISO.

That doesn't mean the grid operator has the final word on projects. A CAISO determination of economic value is not even a prerequisite to win certification from the CPUC. But it does go a long way toward resolving the conflict that had previously existed between policy and reality.

The project sponsor still is responsible for conducting its own analysis, and the CPUC wisely left room for alternatives proposed by intervenors or the utility - via consideration of factors that don't fit easily onto a spreadsheet. These include whether a project helps improve access to renewable resources or more fuel diversity and whether it provides operational flexibility or better system reliability, as well as environmental impacts not easily monetized, jobs creation or loss, and possible mitigation of market power.

The first full application of the new policy happened just last week, as the CPUC formally approved the $545 million Devers-Palo Verde line and the associated Devers-Valley No. 2 link sponsored by Southern California Edison.

Several parties, besides Edison and CAISO, entered economic evaluations for the project, with the consensus being that it showed significant economic benefits, will improve system reliability, and will increase operational flexibility. According to the CPUC decision, even ratepayer advocate The Utility Reform Network "finds comfort" in the varied economic analyses that showed the project to produce net benefits.

The next big case, San Diego Gas & Electric's Sunrise Powerlink, may not prove so cut and dried.

Already, the public at large (myself in particular) has been mightily confused by back-to-back revisions of SDG&E's own analysis for the $1.2 billion transmission line. An evaluation issued last year with the utility's amended application showed a positive energy benefit of $447 million for the project. But that assessment was riddled with errors and incorrect assumptions about natural gas prices and power plant heat rates, so SDG&E was told to revise the work.

When it did, the benefits dropped to $85 million per year. All of a sudden, Sunrise seemed to be setting. But that wasn't the only change in the works, and this past week, the utility brought out further revisions that appear to boost the annual benefits level to some $220 million averaged over the life of the project.

SDG&E explains that the difference came about because it was directed to use newer demand forecasts from the California Energy Commission that increased local peak power needs by about 100 MW - which tipped the equation by adding more value to the project and avoiding expensive reliability contracts. Also, the benefits analysis was extended for another five years through 2020, which raised the apparent gains compared to initial costs.

The utility's case was also bolstered by a new analysis from CAISO. Previously, the grid operator board had endorsed Sunrise as a package with the Green Path project being pursued by Citizens Energy - jointly called Sun Path - largely as a way to help SDG&E resolve its local reliability needs and access more renewable energy from the Imperial Valley. That assessment was sufficient for the CAISO board last July to approve Sun Path in concept and allow SDG&E and Citizens to proceed with permitting.

Now that the utility's portion is before the CPUC, a new and more thorough analysis is required. Although the grid operator has fallen behind in some of its scenario modeling, testimony presented this week refines and endorses the prior assessment, with a bottom line that the Sunrise project shows a benefit of about $250 million per year, largely based on reliability, energy benefits, and improved access to renewable power supplies needed to meet the state's renewables goals. Netting out the annual transmission operations cost of $163 million still leaves a net benefit of $87 million. This said, CAISO compares it favorably to two major alternatives, the Green Path alone or repowering local generation at South Bay, which otherwise would be retired from service.

According to CAISO vice-president of planning Armie Perez and other grid operator experts who sponsored this filing, "Sunrise appears to be the most cost-effective means for achieving access to renewable generation and reliability goals; . . . unless there is a feasible alternative with 10 percent lower net costs of renewable procurement, the Sunrise project has the largest net benefits of the alternatives considered to date."

A strong endorsement, particularly given the "rebuttable presumption" that will be given to the CAISO analysis if it is approved by the board. But, as I said, it isn't the final word.

Any economic analysis is wholly dependent on the assumptions that go into it. And for opponents of the Sunrise project, the old adage "garbage in, garbage out" would certainly seem to apply.

I asked Michael Shames of the ratepayer group the Utility Consumers' Action Network for his take on the revised analyses. Boy, did I get an earful. In short, he told me, SDG&E and CAISO "justify the line on three bases: renewables, reliability, and economics. All three are remarkably weak."

But since I've exceeded my allotted column space, I'll have to postpone going into details until next week.
- Arthur O'Donnell

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