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What a \$2B Texas project says about U.S. quest for CO2-free grid

By Edward Klump, Peter Behr | 10/28/2021 06:15 AM EST



Millions of Texas customers lost electricity during a winter storm in February as the state faced a shortage of available generation. A proposal called Southern Cross Transmission, if built, could help connect Texas' main power grid to the U.S. Southeast. Matthew T Rader/Wikipedia

After a dozen years, multiple energy crises, regulatory delays and political turnover, construction of a novel 400-mile power line connecting Texas to the Southeast is finally within sight.

The progress is welcome news for clean energy advocates who believe Southern Cross Transmission and similar long-haul projects are critical to a future in which Texas and the U.S. grid move immense amounts of wind and solar energy to decarbonize the nation's electric infrastructure.

But the \$2 billion project, proposed by Pattern Energy Group LP, likely won't be ready until 2026 at the earliest, if construction starts in 2023.

That means Southern Cross may take about 17 years from conception to completion, a symbol of the long delays that challenge high-voltage power line projects and cast doubts on a carbon-cutting grid transformation sought by President Biden and Democratic leaders in Congress. Even Texas, where state regulators have oversight of transmission line construction, didn't ensure that Southern Cross could be built quickly. Then blackouts devastated the state in February.

"We had not considered pulling the plug" on Southern Cross, Glen Hodges, vice president of business development at Pattern Energy, told E&E News recently. "We understand that projects of this magnitude — transmission projects — have a very long timeline and you have to have patience, perseverance, capital to support them through that. And so that's what we've been doing."

Princeton University's "Net-Zero America" report, based on extensive computer modeling, estimated how much new power line capacity would be needed to meet the Biden goals of a carbon-free grid by 2035 and a near-decarbonized economy with high renewables by midcentury, at the least cost to consumers. High-voltage line capacity would have to leap by 60 percent in just nine years to get on a path to success and triple by midcentury, the study authors reported.

The U.S. has barely left the starting gate toward that future, analysts agree. "With very few exceptions, the United States has not developed large-scale interregional transmission since the [Pacific DC Intertie] between California and the Pacific Northwest was completed 50 years ago," a report from the American Council on Renewable Energy (ACORE) and Grid Strategies LLC stated.

CEO Bob Blue of Virginia-based Dominion Energy Inc. said there's a need to permit electric transmission to deliver renewable energy to where people live. "We're not talking about relaxed standards. We're just talking about timeliness," Blue said during a recent Climate Leadership Conference webcast.

The debate is particularly fervent in Texas, which has the most installed wind energy capacity in the nation and solar numbers that are climbing. But experts say it may need projects like Southern Cross as it juggles renewables, electric reliability and the effects of climate change.

Southern Cross, for now, has wind at its back as Texas looks to bolster its main power grid after blackouts during a February freeze.

The direct current line's capacity to send energy in or out of Texas would help the state import electricity in emergencies. Southern Cross' capacity — about 2,000 megawatts — would have merely dented the state's power shortfall at the peak of the February crisis. But the extra power could have kept the lights on for some 400,000 homes and saved electricity customers nearly \$1 billion by holding down some of the price spikes during the emergency, according to a [report \(https://acore.org/wp-content/uploads/2021/07/GS_Resilient-Transmission_proof.pdf\)](https://acore.org/wp-content/uploads/2021/07/GS_Resilient-Transmission_proof.pdf) from ACORE and Grid Strategies.

At the same time, the Southeast is home to big energy consumers who may be interested in the renewable energy the project could deliver much of the time. That combination has Pattern Energy exuding confidence that Southern Cross will be built.

The potential development arrives at a crossroads for the U.S. power sector. Regulators and consumers are demanding access to cleaner energy — but also improved reliability and resilience without killing affordability. It's a tall order for an industry that relies on the blessing of state and federal regulators and often seeks a regulated rate of return. That last part doesn't apply to Southern Cross, which is a merchant development whose backers will seek to nail down parties willing to pay for the power it plans to transport.

The idea for Southern Cross is straightforward: Southeastern customers, especially large commercial and industrial ones, could soak up excess Texas wind and solar energy during much of the year. Then, when conditions in Texas' main region are tight, Southern Cross could send power to the Texas grid from the Southeast.

Alex Hoffer, a director of business development at Pattern Energy, said the company expects to build flexibility into contracts that sell power in the Southeast.

"We'll have optionality to be able to interrupt delivery, basically, to the Southeast for up to 'X' hours [a] year, which we will set at the level that provides us enough headroom to be able to turn around" and send electricity to Texas, Hoffer said.

'Significant pressure'

Pattern Energy, based in San Francisco, said a process on Southern Cross managed by the Electric Reliability Council of Texas (ERCOT), the state's primary grid operator, could be largely wrapped up in 2022. ERCOT is working through a [list](http://www.ercot.com/mktrules/puctDirectives/southernCross/report/all) (<http://www.ercot.com/mktrules/puctDirectives/southernCross/report/all>) of conditions issued by Texas regulators several years ago in connection with an approval of the project.

Mississippi also has an ongoing proceeding tied to the case. It's not certain what process may be needed in Louisiana. If all goes as planned, though, construction could begin in 2023, according to Pattern Energy. In 2016, the company [touted](https://www.prnewswire.com/news-releases/southern-cross-transmission-project-estimates-39-billion-in-positive-impact-to-louisiana-and-mississippi-economies-300380829.html) (<https://www.prnewswire.com/news-releases/southern-cross-transmission-project-estimates-39-billion-in-positive-impact-to-louisiana-and-mississippi-economies-300380829.html>) a report on the project showing the potential for billions of dollars of combined benefits for Louisiana and Mississippi.

Besides reliability, Southern Cross offers Texas a way to have a stronger market for existing power producers in the ERCOT region. That's because excess electricity can help bring down power prices to low or even negative levels. With Southern Cross, some of that power could be routed to markets in the Southeast.

"You need to keep those other generators in the game so that you don't end up in scarcity positions as often," Hoffer said. "And overall that little bit of price support to them nets out as a win to ratepayers." The project also could bring 2,000 MW to ERCOT's region and help lower prices when they are high, he added.

Hodges, the vice president at Pattern Energy, said the Federal Power Act lays out a road map for a line like Southern Cross to connect to the Texas grid without affecting the state's exemption from full FERC regulation. "We followed that road map and obtained an interconnection [order](https://subscriber.politicopro.com/f/eenews/?id=0000017c-7b16-d47e-ab7e-ff36610d0000) (<https://subscriber.politicopro.com/f/eenews/?id=0000017c-7b16-d47e-ab7e-ff36610d0000>) from the FERC," he said.

In a statement, ERCOT said it continues to work to address issues outlined by the Public Utility Commission of Texas in 2017 "to ensure the reliable integration" of Southern Cross to the main Texas grid. Members of the PUC have discussed Southern Cross publicly this year, and ERCOT filed a [status update](http://interchange.puc.texas.gov/Documents/46304_15_1152669.PDF) (http://interchange.puc.texas.gov/Documents/46304_15_1152669.PDF) on the project in September.

Today, Texas' unique status as a state whose primary grid operator is largely independent from federal regulation remains a political point of contention. ERCOT has few notable connections to other electric grids — just four direct current ties, according to an ERCOT [dashboard](https://mis.ercot.com/public/dashboards/dctieflows). (<https://mis.ercot.com/public/dashboards/dctieflows>) To critics of that go-it-alone approach, Texas has set itself up for failure during periods of stress on the system.

FERC Chair Richard Glick said during a Sept. 23 agency meeting that "ERCOT is essentially an island" in part because of Texas' unwillingness to accept FERC regulation of the grid.

That is like "cutting off your nose to spite your face," he added. "To me, this isn't about jurisdiction, it's about saving lives."

FERC recently closed a public comment period on a comprehensive inquiry into the planning and financing of new high-voltage lines, and the challenges of connecting wind and solar generation to the grid. Power line advocates hope a FERC rulemaking leads to an order that breaks through historic barriers to expanding grid infrastructure across the country.

There's also a push for legislation. Under the budget reconciliation process, Democrats have proposed a 30 percent investment tax credit for long-distance lines.

Southern Cross is one of 22 planned high-voltage transmission projects in the continental U.S. that if completed would create paths to enough new wind and solar projects to increase the nation's renewable energy output by about 50 percent, according to a [report](https://cleanenergygrid.org/wp-content/uploads/2019/04/Transmission-Projects-Ready-to-Go-Final.pdf) (<https://cleanenergygrid.org/wp-content/uploads/2019/04/Transmission-Projects-Ready-to-Go-Final.pdf>) by Americans for a Clean Energy Grid (ACEG) and Grid Strategies.

More than a dozen technical analyses in the past several years have made the same case for transmission, including one released this

month (*Energywire* (<https://subscriber.politicopro.com/article/eenews/2021/10/12/transmission-for-renewables-heres-a-ferc-road-map-281793>), Oct. 12).

Alison Silverstein, a Texas-based grid consultant and contributor to several recent grid strategy studies, said the shock of the February outage may be great enough to overcome customary obstacles to new power lines and Texas authorities' concerns about new grid links to neighbors.

"ERCOT is under significant pressure from the [Texas PUC], the governor and Legislature to remove barriers to competition. It will be very difficult for the usual levels of opposition and slow rolling of transmission [projects]," she said.

More competition?

In addition to the strong opposition from residents with "not in my backyard" objections and disputes among state officials about who should pay for big new power lines, some projects also are opposed by existing electricity providers. Incumbent utilities that don't welcome competition from distant, lower-cost wind and solar energy remain influential in the grid planning process, a recent report from Grid Strategies and the Brattle Group concluded.

"No one in the market today wants more competition," Silverstein said. "They'll all say the right things about welcoming competition on a level playing field," she added, but act otherwise.

Completing the Southern Cross project could show that the transmission logjam can be broken, she said.

Pattern Energy needs to finalize land issues and permits. It also will likely use debt financing to enable construction. An earlier Texas docket (<http://interchange.puc.texas.gov/search/filings/?UtilityType=A&ControlNumber=45624&ItemMatch=Equal&DocumentType=ALL&SortOrder=Ascending>) included a number of complaints about the proposed line, but ultimately a certificate was approved by the PUC with conditions. A different Texas docket (<http://interchange.puc.texas.gov/search/filings/?UtilityType=A&ControlNumber=46304&ItemMatch=Equal&DocumentType=ALL&SortOrder=Ascending>) is keeping track of progress at this point.

The Southern Cross developer also is hoping to sign up customers, at least for some of the power headed to the Southeast. The company has suggested Southern Cross could tie into systems associated with Southern Co., Entergy Corp. and the Tennessee Valley Authority, but it's not clear how actively Pattern Energy is talking with utilities in the Southeast.

In a statement, New Orleans-based Entergy said the Southern Cross project "does not propose to connect to the Entergy transmission system." Entergy is in the region managed by the Midcontinent Independent System Operator, which said Pattern Energy hasn't requested to interconnect any merchant high-voltage, direct current transmissions lines with it.

"To date, we have not seen any analysis of this project's effects on the transmission flows in MISO's region or on our customers," Entergy said in an emailed statement. "We would want to review such a study first before determining whether we have a position on the project."

Atlanta-based Southern Co. said it's aware of the Southern Cross project.

"We are always evaluating and seeking innovative opportunities to provide clean, safe, reliable and affordable energy to our customers," Southern said in a statement.

Scott Fiedler, TVA spokesperson, said in an emailed response to questions on Southern Cross that TVA was contacted several years ago by Pattern Energy about its [interconnect](https://www.tva.com/energy/transmission) (<https://www.tva.com/energy/transmission>) process.

"TVA performed preliminary studies, but no action was taken by Pattern at that time," he said. "Pattern has not contacted TVA since the initial interaction."

Fiedler noted that an interconnection with TVA can't happen without going through a formal process. "Then TVA would conduct formal studies to ensure any interconnect does not interfere with our transmission system and it complies with our statutory

responsibilities to provide an ample supply of power to the TVA area at the lowest feasible cost in accordance with the TVA Act,” Fiedler said.

With the Texas energy crisis in February as a tragic case in point, Silverstein said a bigger, more versatile interstate power grid is also a vital strategy for defending customers and communities from extreme weather assaults.

“The idea that we’ve got enough transmission to assure reliability under a worsening climate threat is demonstrably wrong,” Silverstein said. “We need to be building transmission with a much bigger holistic lens about what’s needed and why.”

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