

BIG PIVOTS

ENERGY and WATER *transitions in Colorado and beyond*

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On the brink of yes for nearly \$2 billion for transmission in eastern Colorado

by Allen Best

Transmission that will be critical to delivering wind and other energy from farms and ranches in eastern Colorado to electrical consumers along the Front Range was tentatively approved by the Public Utilities Commission on Feb. 11.

The PUC commissioners will again take up the proposal by Xcel Energy on Feb. 23 to work through more details of what will likely produce \$1.7 billion of transmission in a gigantic, 560-mile loop around eastern Colorado called Pathway Project. Slightly less certain is approval of a 90-mile extension to wind-rich Baca County in the state's southeastern corner. The cost tag of that extension is \$250 million.

Some testimony had been filed with the PUC arguing that not all parts of the massive investment were needed for Xcel to achieve its mandated carbon-reduction goals of 80% by 2030 as compared to 2005. PUC commissioners were not persuaded. They quickly concluded that Xcel had

indeed delivered the evidence that the proposed 345-kV double-circuit transmission line will be needed—and soon.

“Time is of the essence. We don't know what impediments might creep up as the project proceeds,” said John Gavan, one of the three commissioners.

“I also think it's important to realize that this project will support generation beyond our planning with the current electric resource plan,” he added, referring to Xcel's separate but concurrent proposal for new wind and solar projects, as well as natural gas plants and storage.

The PUC's two other commissioners shared similar thoughts about urgency.

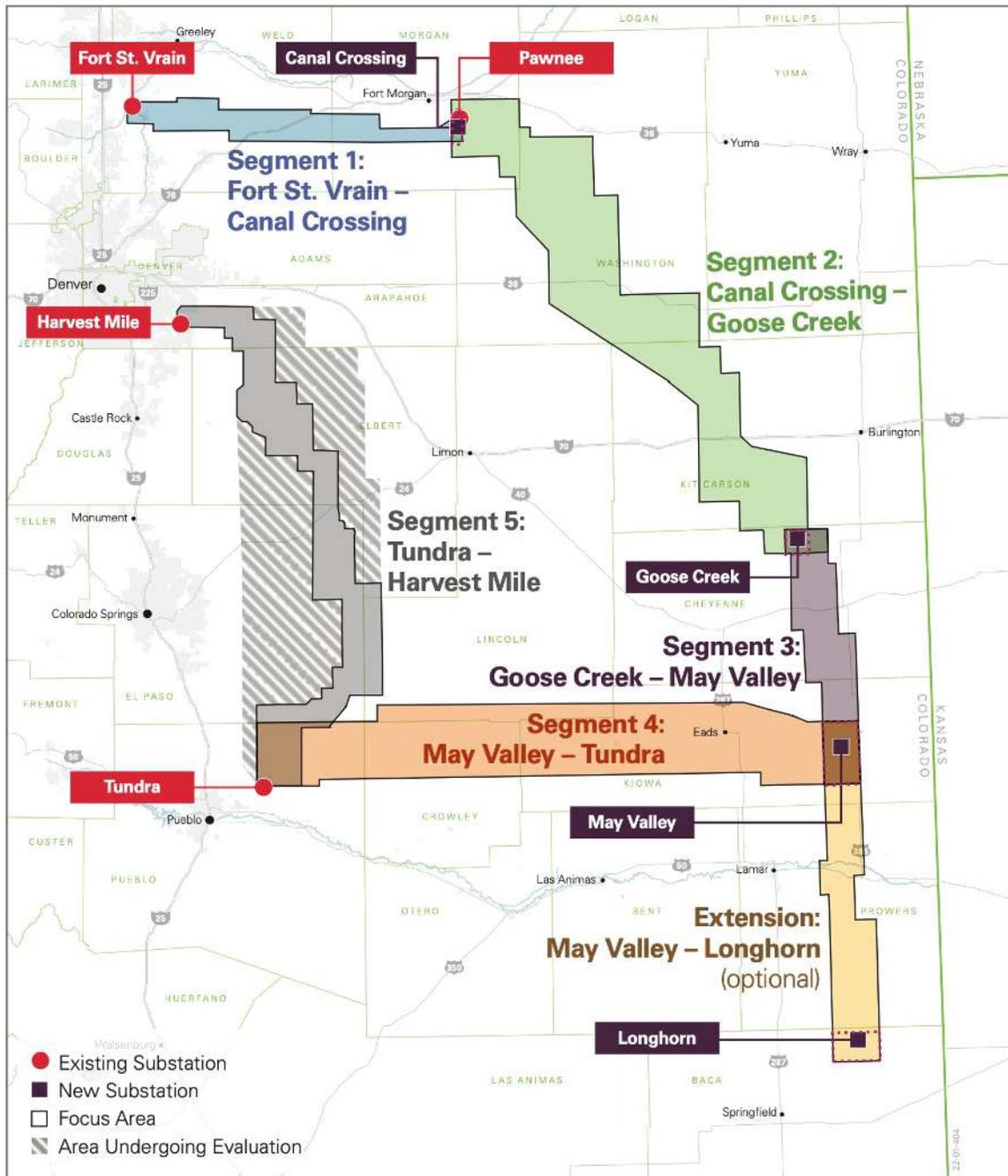
“They've met their burden (of proof) here,” said Megan Gilman. “I don't want perfect to be the enemy of the good,” said Eric Blank, the commission chairman.

Xcel's plans for transmission coupled

with a concurrent proposal for new wind, solar, and other resources could deliver investments approaching \$9 billion in coming years. This will allow Colorado's largest electrical utility to close coal plants and likely will slow rate increases or possibly halt them altogether. Some utilities have actually been able to lower rates as they have pivoted to renewables.

“A really big moment in my career,” says Mark Detsky, an attorney who represents the Colorado Independent

**It looks like the chicken—
or maybe it's the egg—of
Xcel Energy's giant
renewables pivot will go
forward substantially as
proposed**



For detailed profiles of Xcel’s routing ideas, go to [Xcel’s Power Pathway website](#).

Energy Association, an organization of wind and other energy developers.

Many states have struggled to build the transmission infrastructure necessary to more fully develop renewable resources. Texas and California have been exceptions, and Colorado will join them, says Detsky.

“There have been many, many studies that have shown that this is what the United States needs to do to meaningfully decarbonize,” he says.

“It has to have massive transmission infrastructure that maximizes the wind and solar resources across a wide geographic range.”

If Xcel's plans get approved as proposed, the company's renewable generation portfolio will double by 2030 as compared to the growth in renewables in the previous 17 years.

To pull the trigger on that generation, though, the company needs transmission. In the past, both in Colorado and elsewhere, the two have gone forward on almost entirely separate paths. In this case, they're separate but concurrent.

"It is one of the first times in Colorado, if not nationally, that this chicken-and-egg transmission problem has hopefully been addressed," said Ellen Howard Kutzer, a senior staff attorney with Western Resource Advocates, an advocacy organization that participates in most utility cases before the PUC.

"We are being thoughtful about the needs of the next 5 to 10 years but also building transmission for future needs as well," she said. "That's something that I heard in the deliberations."

The proposal for Colorado's Pathway Project was submitted to the PUC in March 2021. Xcel was bolstered by a non-unanimous but comprehensive settlement agreement filed in November by a variety of environmental, labor, and state agencies, including the staff of the PUC. That agreement indicated broad support for Xcel's plans.

Tri-State Generation and Transmission, Colorado's second largest utility, which is also proposing a sharp pivot in its generation, filed testimony with the PUC that showed that in every case its own plans for more renewable generation will benefit from the new transmission in eastern Colorado.

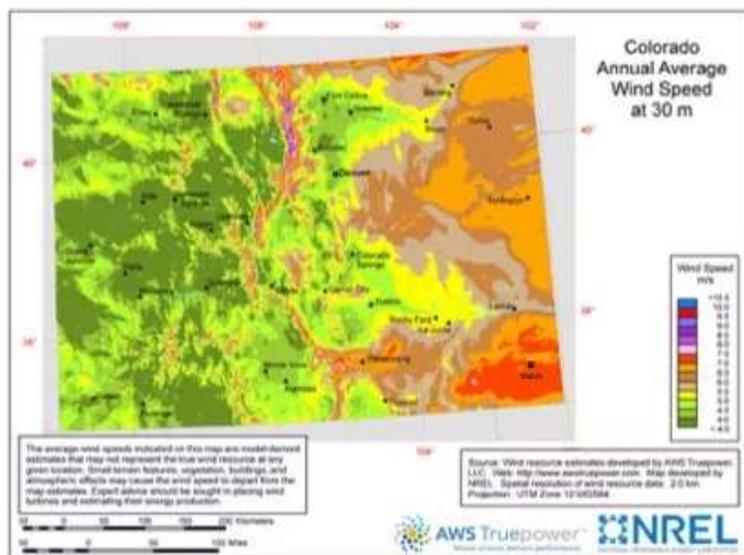
Consumer groups had different advice: Go slower. The Colorado Office of the

Utility Consumer Advocate and others argued that only one of the five segments proposed by Xcel, the 160-mile leg from Brush to the Burlington area, could be justified at this time, as it would deliver nearly the same benefits but at a fraction of the costs.

The PUC commissioners agreed only to the extent that they want to see that segment and another shorter segment to a substation north of Lamar, a total of 225 miles, get done first. This will allow the wind projects to get federal tax credits that are scheduled to end, although such tax credits have been extended many times in the past. The three other segments closer to the Front Range have slightly less pressing need.

Uncertainty about the future of federal tax credits, both production and investment, also has the PUC commissioners fretting about what to do about the 90-mile extension to Baca County.

Studies by the National Renewable Energy Laboratory have shown southeastern Colorado to have the steadiest, strongest winds in all of Colorado. That should perhaps not be a surprise, as it was at the heart of the Dust Bowl during



the 1930s. Xcel has proposed the \$250 million extension from its Colorado's Pathway Project loop. And consumer groups, if skeptical about other segments, are willing to see conditional approval.

The most resistant voice to approving the extension is perhaps the individual in the proceedings who knows most about the plentitude of wind in the Springfield area. As a wind developer in 2007, said Blank, he had investigated development opportunities in Baca County. He knows the potential, he said.

As an attorney, though, he worries about procedure if the PUC approves the May Valley-Longhorn extension into Baca County. Xcel, he said, had failed to document the benefits. "They didn't even try," he said. "There's nothing in this record to quantify the benefit."

Gavan pushed back. He said the extension from May Valley will be a "building block for the future." He said he will support a conditional approval—and it needs to be understood as an approval that can save Xcel customers money in the long run. An earlier, rather than later, conditional approval helps open the door for development aided by the federal tax credits.

The federal tax credits are set to expire late this year. If Congress does not renew them, then the projects that are bid later will come in at a higher cost.

The three commissioners will be working this over hard with the aid of PUC staff members before their Feb. 23 meeting.

They'll also be working over what are called performance-incentive mechanisms, or PIMs. Most people would call this the bag of carrots and sticks. The goal is to get the transmission built without unnecessary cost.

Transmission at a recent conference was described as difficult but doable. "Transmission is hard to

build on one hand, and on the other hand it's really not," said Mark Gabriel, the chief executive of United Power, Colorado's second largest electrical cooperative. It costs a "ton of money," he explained, and "permitting is a pain in the butt." That said, it can get done.

In this case, the scale matters. PUC staff member Dan Greenberg told the commissioners that Xcel will have to work with 700 landowners as it puts together the transmission segments that go on-line, the first segments in 2025 and the remaining three segments by the end of 2027. There will be environmental issues, such as habitat of the lesser prairie chicken, uncertainty over price of materials—and more.

All three commissioners have backgrounds in business, with Blank and Gilman both having careers in renewable generation and Gavan in information technology prior to their appointments. They sometimes drew on personal experience in balancing bonuses and penalties so that Xcel gets the transmission built in time for Colorado to meet its decarbonization goals without wasting money along the way. There is much talk about avoiding "cliffs." Speed bumps and flying lights weren't discussed, but you get the idea.



Another decision, but this one without footnotes, is about undergrounding. Lots of people would like to see transmission lines go underground, but Xcel had testified that the cost would increase 20-fold. That persuaded the PUC commissioners.

Undergrounding, however, might conceivably be involved some day in exporting electricity generated by solar panels in the San Luis Valley, Colorado's richest area for solar. The commissioners are receptive to opening a miscellaneous proceeding late this year. That means nothing will necessarily happen, although it does represent a victory for the Colorado Solar and Storage Association.

The final major issue decided at least tentatively by the PUC commissioners was how much stock to put into the testimony of Larry Miloshevich, a Lafayette resident who has been conducting a deep investigation of evolving technology for electrical transmission. In the acronym-rife discussion, it was called ATT, or advanced transmission technologies.

Gavan gushed about the promise of such technologies, particularly one called carbon-core conduits that he said could eliminate upwards of 500 transmission towers. He pointed out that North Dakota-based Basin Electric used the technology on a 27-mile, 230-kV transmission line. If Basin, a distinctly conservative generation and transmission association, could embrace the technology, he argued, then certainly Xcel Energy with its reputation for being one of the nation's most progressive utilities should do the same.

Blank, the chairman and an attorney, was resistant. He wanted stronger evidence



A turbine on a farm east of Burlington, near the Kansas border.

for the record before he was willing to make it a conditional requirement of approval.

This most certainly will be discussed again. "I strongly support that it could really transform this world, but we just want to be careful about creating a (legal) mess," said Blank.

Afterward, Miloshevich said he was pleased with the interest shown in his studies about advanced transmission technology, especially the use of advanced carbon-core conductors as a superior alternative to traditional aluminum-conductor steel-reinforced models.

"The carbon-core conductor (technology) in general has a 20-year history and a solid performance record," aside from fragility issues during installation, which have now been addressed," he wrote in an email.

Miloshevich said he believes a more careful combing of his testimony will demonstrate to the satisfaction of PUC commissioners that there is sufficient evidence to justify making ATT a requirement.

Like this story? Perhaps you will want to forward it to somebody you know—and urge them to "subscribe."

New questions about future of Comanche 3 after yet more down time for coal plant

Troubled operations at Comanche 3, Colorado's newest coal plant will be reviewed again by the Colorado Public Utilities Commission.

John Gavan, a PUC commissioner, proposed at the weekly meeting of the commissioners on Feb. 16 to require Xcel Energy, the operator and primary owner of the coal plant in Pueblo, to prepare a report about a "generator casualty" on Feb. 3.

The unit has been idle since then.

Other commissioners agreed to the order, although Eric Blank, the chair of the commission, noted that Xcel was required to submit reports monthly anyway.

Later in the day, Xcel issued a statement:

"The Comanche Generation Station's unit 3 is offline so an equipment issue can be repaired. Crews are currently working to assess the extent of the issue and begin the repairs needed. The company will cover the potential incremental costs of any additional replacement energy needed to serve our retail customers. As work progresses, we'll continue providing our customers with reliable, safe and affordable energy."

The company provided no estimate of how long the coal plant will be out of commission.

Comanche 3 has had frequent operating troubles. Most notable were those of 2020, when it was closed for most of the year for repairs.



PUC commissioners on Wednesday received a recommendation from an administrative law judge that calls for Xcel to absorb the \$14 million it cost to buy replacement power in 2020 instead of passing along the cost to its customers. The company's response on Wednesday anticipates that issue.

Comanche 3 began operations in 2010 and was originally projected to continue operations until 2070. As the cost of renewables plummeted, utilities figured out how to integrate renewables without

sacrificing reliability. Too, climate scientists have elevated their warnings about the risk of climate change.

Xcel, in its electric resource plan submitted to the PUC in 2021, called for the plant to close by 2040.

An agreement between Xcel and various other groups that was filed with state regulators in November pushed the scheduled closing to the end of 2034 but to be operated with more restraint beginning in 2022. By 2029,

according to the plan, it essentially would become a summer-only plant, to meet air conditioning demands.

This latest news would seem to undercut that schedule as the key argument for continued operations was the presumed reliability of coal generation.

Major environmental groups have called for the plant to be retired by 2029 or even 2027.

Xcel owns 66% of the coal unit, Colorado's largest with a generating capacity of 750 megawatts.

CORE Electric Cooperative owns 25% and Holy Cross Energy 8%.

The first two units of Comanche, their smokestacks painted red and white, are to be retired by 2025. Xcel has agreed to pay property taxes on the third unit through 2040.

Nuclear study bill goes nowhere in Legislature

A bill that would have allocated \$250,000 to study the potential for using new small-modular nuclear reactors in Colorado was killed by a legislative committee on Feb. 17 on a party-line vote.

Several Democrats on the committee cited the high cost of nuclear power in explaining why they would oppose the appropriation. Sen. Sonya Jaquez Lewis cited U.S. Energy Information Administration data that showed nuclear power more than twice as expensive than solar.

As originally proposed by State Sen. Bob Rankin, a Republican from Carbondale, SB22-073 would have required the state's economic development agency to commission a study at a cost of \$500,000 to be completed by July 2024. He offered amendments to move the study to the Colorado Energy Office and cut the cost in half.

Rankin described nuclear energy as a way to help Colorado meet its goals of emissions reductions while also helping Craig and Hayden, two communities he represents, transition economically after the coal plants close later in this decade.

"This bill is about achieving the state's energy goals," Rankin told members of the Senate State, Veterans, and Military Affairs Committee. He said it's unclear how electric utilities can decarbonize with wind and solar beyond 80%.

"If we consider climate change to be an existential threat, then we need to consider all options," he said. Nuclear modular reactors would help bridge the political divide, he added.

"We cannot solve all the problems of the energy transition with the focus (exclusively) on solar and wind," he said.

New nuclear generation technology perhaps can be adapted to make use of

existing coal-fired infrastructure, most definitely including transmission lines, Rankin said, while providing continued economic stability for currently coal-dependent communities.

Craig Generating Station paid \$10.84 million in property taxes this year while Hayden paid \$4.98 million.

"We need to take advantage of those existing facilities and the economies of those towns which are struggling with this transition," he said.

Three states and one U.S. territory are pursuing nuclear, he said, citing Wyoming, Utah, Washington, and Puerto Rico. "Why should Colorado not be part of that?"

Small modular nuclear reactors—the technology being pursued by Bill Gates and others at Kemmerer, Wyo.—are safe, and "the economics are changing daily."

While Rankin later expressed annoyance that opponents seemed ready to kill nuclear bereft of study, supporters of the study bill who testified on Feb. 15 were just as ready to proclaim nuclear an answer to reliable baseload generation.

"We believe small modular reactors are part of the solution and should be incentivized," said Tim Coleman, testifying on behalf of the Colorado Rural Electric Association.

Others, such as Madison Hilly, founder of an organization called Campaign for a Green Nuclear Deal, emphasized climate benefits. Eric Meyer, an individual who identified himself as active in Democratic affairs, emphasized that supporters of nuclear energy cross party lines.

If outnumbered, opponents were just as passionate.

"Our primary goal should be to solve climate-related issues for future generations and not create more complex and hazardous ones," said Claire O'Brien of the Rocky Mountain Peace and Justice Center.

Several brought up cost. "Cheap dreams, expensive reality," said one. Jan

Rose, representing Colorado Coalition for a Livable Climate, described a nuclear plant as a \$4 billion expense that was unnecessary and should not be put on the back of Xcel Energy ratepayers.

Many comments referenced Rocky Flats, where plutonium triggers for nuclear warheads has been manufactured, creating an environmental mess that arguably remains even now, but also Pueblo. There county commissioners have shown an interest in seeing nuclear power as a replacement to the Comanche coal units.

Rankin said partly he initially chose the economic development agency because he saw nuclear energy as an economic development strategy.

“Not to be too critical, but the energy office has not shown interest in nuclear,” he said. They have been focused on wind and solar.”

The bill was laid over until Thursday, Feb. 17. If it survives, it may have an interesting encounter with another Colorado state senator who actually has a degree in nuclear engineering. Sen. Chris Hansen earned a bachelor’s degree at Kansas State after marveling at a nuclear reactor when still a high school junior. Later, he veered his studies to economics. Asked by a Logan County commissioner in 2019 why the state didn’t consider nuclear, he replied authoritatively: because of the high cost.

Poll finds Pueblans favor renewables over nuclear

A poll commissioned by a renewable energy group has found that residents of Pueblo County strongly favor renewables over other energy choices, including nuclear.

The poll commissioned by Renewable Energy Owners Coalition of America, a local group, asked voters in Pueblo County to choose their top one or two sources of

energy production. As first reported by KOAA, a television station in Colorado Springs, 60% favor solar and 47% favor wind. Natural gas was favored by 24%, nuclear 19% and coal 17%.

The polling conducted by New Bridge Strategies also found that 65% said they strongly support replacing the energy produced at the Comanche Generating Station with renewables, compared to 34% who strongly opposed the switch.

Lori Weigel, the principal of the polling firm, said the very clear preference for wind and solar was “evident with most key subgroups.”

Ken Danti, president of the group that commissioned the polling, suggested to the TV station that the results were not surprising. “Pueblo is an educated town,” he said. “They’re smart people, and if you dug into the disadvantages of nuclear over renewables, I think you’d come to want renewables.”

Pueblo is an odd place in that it is supplied by Black Hills Energy but is home base, more or less, for Xcel Energy. Most of the electricity produced at the Generating Comanche Station is exported north to metropolitan Denver.

As Xcel winds down Comanche, the big question is what will provide the reliability that coal, at least in theory, also provided. For Pueblo County, there’s also the question of tax base. What will take the place of the property taxes collected from Xcel beyond 2040?

Garrison Ortiz, chair of the Pueblo County Commission, has emphasized that the county—Comanche is also in the city — must be kept whole. He testified in October that closure of Comanche Station will cause Pueblo to lose \$31 million a year in property tax revenue. Ortiz had promoted the idea of new nuclear energy technology called small modular reactors, such as is being planned in Wyoming.

A first in Boulder—and the nation: composting in an all-electric way

We're going to have to start readjusting our mental landscapes. Colorado last fall gained the world's first (mostly) solar-powered steel mill.

And now it has the nation's first commercial-scale electric powered collection truck for compostable discards.

It is, by the way, a Mack truck. So banish the thought of black clouds of diesel exhaust puffing up from exhaust pipes. It won't always be that way.

"Eco-Cycle is proud to be pioneering the first commercial-scale electric-powered collection truck for compostables to help lead the transition of commercial-fleet electrification, meeting our mission of zero waste with zero emissions for a more climate-resilient future," said Suzanne Jones, the executive director of Eco-Cycle.

Transportation has become the single largest sector for greenhouse gas emissions in Colorado. The Regional Air Quality Council has found that each garbage or trash truck displaced by an electric vehicle would roughly reduce emissions of volatile organic compounds by 31 pounds a year, nitrous oxide by 1,895 pounds per year, carbon dioxide by 132 pounds per year.

The truck will travel an estimated 15,000 miles annually.

This fits in with Colorado Greenhouse Gas Pollution Roadmap, and that's one reason the unveiling of the new truck was attended by Gov. Jared Polis.

Afterward, [Electrek summarized](#) the advantages:

- Waste trucks typically have a defined daily route, so energy use is predictable

day-to-day, making range of little concern. Trucks typically return to a depot where they can be charged overnight to be ready for the next day. Eco-Cycle has installed a 75kW charger for this purpose, though the Mack LR is capable of 150kW charging.

- Routes include a lot of stop-and-go and need lots of low-end torque to get a truck up and running when fully loaded, two situations where electric motors shine.



- Regenerative braking means less energy loss for a truck that needs to stop several times per block.
- They're much quieter and less smelly, which is great for neighborhoods—especially now that so many people are working from home.

The Mack truck was significantly more expensive than standard diesel trucks. Some of the funding for the truck came from Colorado's [VW's Dieselgate settlement funds](#). The same fund helped pay for compressed natural gas trucks; this is the first electric.

EcoCycle expects lower cost over the long range, as it true of electric vehicles altogether.

As for the composting, it diverts organic waste that would otherwise go into landfills, breaking the materials into biodegradable materials with oxygen and water, instead of producing methane.

Batteries at Aspen Skiing Co.'s headquarters not at a mountain-top location

Aspen Skiing Co has proclaimed a first in the ski industry. It has installed a Tesla battery in a building adjacent to its headquarters.

It's part of a gradual creation of a new electrical system in the Aspen and Vail areas. There, Holy Cross Energy has a goal of 100% emissions-free energy by 2030. Battery storage at dispersed locations is part of the plan for storing electricity when it is plentiful for use later, especially during evening hours, when there's more demand.

Batteries can also provide backup when power fails, as occurred for 2.5 hours one evening recently in the Aspen area.

"Storage is tremendously useful to us," said Jenna Weatherred, the vice president of community relations at Holy Cross.

In 2021, Holy Cross began soliciting interest in its residential members deploying storage. Just a handful of people have now installed the Tesla Powerwall 2 batteries in their homes, but about 150 others have indicated interest. Slowing their installation in the program called Power+ have been supply chain issues but also a

shortage of workers able to do such installations.

In the case of the Aspen Skiing Co., the battery installation was provoked by Pitkin County's Renewable Energy Mitigation. The program launched more than 20 years and was designed to mitigate the emissions caused by their electrical demand. For example, a heated driveway was permitted but had to be offset by some alternative, such as solar panels on the roof or, more common at first, payment into a fund that produced such good deeds.

In this case the ski company installed a snowmelt system at the Sundeck Restaurant. Instead of installing the batteries there, it made more sense to install the battery in a place that gets year-round use.

"The resulting grid flexibility from these batteries will help Holy Cross Energy more cost-effectively achieve our 'journey to 100%' goal of providing 100% clean energy to our members by 2030," said Bryan Hannegan, the utility's chief executive.

Cindy Houben, director of community development for Pitkin County, said batteries lessen the need for expanded electrical infrastructure in rural areas.

A big tourism idea in Craig fails to get onto runway

The Craig Press reports that a plan to create a tourist attraction in an abandoned shopping mall has died only months after getting approval to receive tax-increment financing.

Frank Moe, a former Moffat County commissioner, and his wife, Kerry, hoped to convert old Centennial Mall into something called the Yampa Valley Adventure Center and Colorado Great Outdoors Experience Museum & Hall of Fame.

"After analysis of the most recent business modeling and financing projections presented to me and because of family health reasons, I have made the difficult



decisions to terminate my efforts to develop the project,” Frank Moe wrote in an e-mail to the Craig Press.

The mall is part of the Craig Urban Renewal Authority’s area of concern. The Craig Press explains that the proposed adventure center was the first project approved to receive tax-increment financing funds. That decision by the city council and representatives of other taxing district would have allowed the Moes to secure a private loan from a local bank and, in increments, get \$7.6 million in financing.

The mall was built in the late 1970s, during the construction of the trio of coal-fired power plants just outside of Craig. Also developed about the same time was a Village Inn, which is to close down operations Feb. 17. The Craig Press reports that the manager confided that the reason for the closure was that the restaurant wasn’t bringing in enough business.

Pueblo County nixes idea of a 750-foot solar buffer

County commissioners in Pueblo County on Feb. 8 adopted regulations governing solar projects.

In a Dec. 9 story, the Pueblo Chieftain had characterized the controversy as a “classic rural and urban divide.”

“On the rural side, Pueblo County ranchers said they are hoping to scratch out a living with land leases to solar farm developments. On the urban side, residents of housing developments indicated they don’t want solar panels blocking their views.”

The newspaper identified the particular friction arising on the city’s southern border, near where a major new solar development called Sun Mountain Solar is being erected. It is about the same size as the Bighorn Solar project that was completed last November. Both will be able to produce about 300 megawatts of electricity.

In February deliberations, the commissioners rejected the proposed 750-foot buffer between solar projects and property containing at least one residence. Garrison Ortiz, the chair of the county commission, said the restriction was more trouble than it was worth. However, he also indicated that the county will try to strike a balance as it reviews individual projects.

“Quite frankly, we want Pueblo County to be open for solar, but we do not want them (solar companies) to build as much as possible near residential areas,” where property owners have invested a lot of money in the beautification of their home sites, Ortiz said, according to the Chieftain account.

Anybody care to respond? Green energy is unreliable and expensive electricity

Cities, states and nations are locked in a green energy arms race, competing to implement the strongest environmental policies to try to fight climate change. Even Routt County, population 26,000, has a climate action plan.

Yet policy makers largely overlook the losers of this emissions competition: ordinary Americans who face unreliable and expensive electricity as a result. These consequences must be included in energy and environmental policy discussions to help determine whether the benefits of green regulations outweigh the drawbacks.”

– From [op-ed in Grand Junction Sentinel](#) by Jennifer Schubert-Akin, plumping an upcoming conference in Steamboat Springs featuring Bjorn Lomborg and others.

Why La Plata Electric thinks a 50-50 deal is best with Tri-State

by Allen Best

Tim Wheeler may have had the best line among the directors of La Plata Electric Association after they unanimously approved a resolution that firmly puts them on a path to a half-a-loaf arrangement with their current electrical provider, Tri-State Generation and Transmission.

Even in the 1990s, he explained, he had begun asking why they couldn't provide more electrical generation locally in a way that could lead to a lower cost and with a greater benefit to the existing climate.

"I am very mindful of people who told me along the way for 25 years that this couldn't be done," he said. "I want to thank them for being wrong."

The case for the new arrangement was laid out in a video-conference town hall held by La Plata last week.

La Plata's existing contract with Tri-State allows the Durango-based cooperative to generate just 5% of its own power. Under a new contract approved conceptually in October 2020 by Tri-State's members, individual members will be able to provide up to 50% of their own electricity, either through their own generation or purchases from others.

In this case, La Plata plans a contract with Crossover Energy Partners, a relatively new energy supplier financed by the Wall Street firm KKR. Crossover would provide 71 megawatts of generation and Tri-State 71 megawatts.

Dan Harms, the vice president of grid solutions for La Plata, said the cooperative and Tri-State have agreed to a final partial contract payment arrangement that will be

submitted to the Federal Energy Regulatory Commission for approval. Because of the sensitivity of the negotiations, he said, details could not be divulged.

La Plata hopes to enter this new 50-50 future beginning January 2024, he said. If this happens—the deal still isn't final—then La Plata will immediately reduce its carbon footprint 50%.

Why a partial-requirements contract instead of a full buyout? Harms cited several reasons. It meets La Plata's climate goal, which is to decarbonize 50% by 2030 as compared to 2018. It also uses Tri-State's

transmission infrastructure that will allow La Plata to tap Tri-State's more regional generational resources.

By staying with Tri-State on a half-time basis, though, La Plata avoids some of the headaches of being a solo operator, he said, if not in quite as many words. A full buy-out would require La Plata to cover costs of regulatory compliance, transmission access, and other elements.

"With partial buyout, we still have access to a lot of the benefits and services that Tri-State provides," he said.

The most compelling evidence in the hour-long session was a chart showing costs of a full vs. a partial buyout. That chart showed much larger savings from the partial requirements.

The partial requirements contract will save La Plata \$7 million a year.

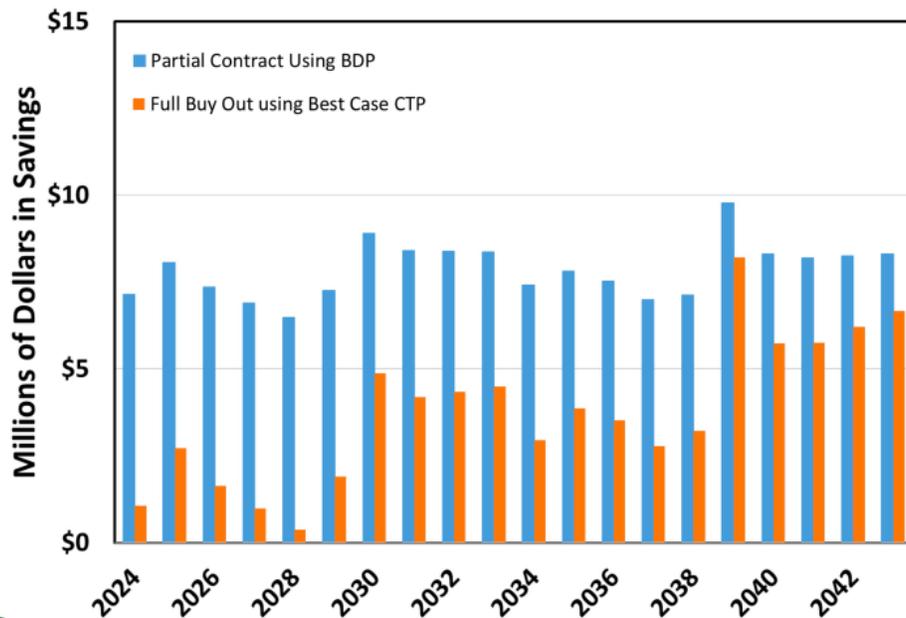
Given that La Plata currently spends \$68 million buying electricity, even a 1% cut can make a big difference, Harms said.

None of the options are off the table permanently. It can go to a full exit later, said Harms.

The coop's existing all-requirements contract was approved in 2006, a time when most coop directors could not envision the rapid dive of renewable prices.

"Monumental," says one director of electrical cooperative

Savings – Partial Contract Vs Full Buy Out



La Plata Electric

La Plata began showing discontent with its contract with Tri-State in 2017. In early 2018 it began investigating its alternatives. It formally notified Tri-State later that year what it was up to and also asked what it would cost to get out of its contract.

Kit Carson Electric, a member in New Mexico, had left in 2016 after paying \$37 million. Delta-Montrose Electric, a Colorado member, was then negotiating with Tri-State for its exit, which later was tabulated at \$62 million. And United Power had also indicated it wanted to explore options.

The Colorado Public Utilities Commission likely would have determined the exit fee for La Plata had not Tri-State, by then under the leadership of Duane Highley, used a legal strategy to move such deliberations to FERC, the federal agency in Washington D.C. Much of this legal shuffling occurred during the dark of the covid lockdowns in 2020.

Tri-State has submitted methodologies for determining both buy-downs and buy-outs. They're called buy-down payments (PDPs) and contract-

termination payments (CTP). FERC has not yet approved either methodology.

Mark Pearson, of the Durango-based San Juan Citizens Alliance, called the partial buy-out "a great step forward."

"It's a great way for us to accelerate our transition to a much less carbon-intensive electricity supply, and hopefully all 50% of La Plata's generation will be local renewable energy," he said. He also sees value in exploring the benefits of a full buyout, once that methodology has been approved by FERC.

Lee Boughey, communications officer for Tri-State, said he expects FERC to conduct a hearing on the contract termination methodology in May. "Our board will not need to take any additional actions for these processes to continue, and the Tri-State board will ultimately approve the partial requirements contracts before these are filed with FERC."

Last year Tri-State announced a pool of 300 megawatts of generation available to its 42 member cooperatives. Three of the coops bid in what Tri-State calls the open season, La Plata among them. The other

two were not identified. Tri-State will extend its open season in May. So far, 203 of the 300 megawatts have been allocated to three members, including La Plata.

Tri-State looks like a very different electrical supplier than it was in 2017. Then, it was still dragging its feet on embracing changes. La Plata was itching to make them.

After Duane Highley became chief executive in April 2019, Tri-State set a goal of 70% renewables in the electricity its members consume by 2030. In Colorado, it is targeting an 80% reduction in greenhouse gas emissions compared to 2005 levels.

The wholesale provider has also stopped raising rates and is now lowering them, 2% last year with another 2% reduction scheduled for this fall. It is working with La Plata to install a 2-megawatt community solar project.

At the same time, it has failed to placate its single largest member, Brighton-based United Power, which has 105,000 members, nearly twice as many as La Plata. In December, United announced it had made up its mind. It wants out—and Mark Gabriel, the chief executive, said at a recent conference that he’s counting the days.

The precise numbers of this partial buy-down have not been revealed, which is likely what directors and chief executives at other cooperatives will want to see. At least six others have indicated they are studying their options.

What’s in this for Tri-State? Even after Highley arrived, the wholesale provider seemed to be desperate to hold onto members. The initial buy-out numbers provided to La Plata and United Power were preposterous.

Pat Bridges, a senior vice president and chief financial officer at Tri-State, said at the town hall meeting last week that this agreement will be a win-win for Tri-State

because the 50% contract will help it pivot from coal plants to renewables.

It will “actually allow us to move faster in that regard,” he said. There are upfront costs in the energy transition, he added.

Win-win was also a phrase frequently used by board members in Durango on Wednesday.

Bob Lynch, a board member, called it a “monumental thing.” The board’s approval brings it “as close as you get without hooking up new power.”

Lynch also pointed to the changed leadership, both in the chief executives of La Plata and Tri-State, in moving the discussion along. “We have the right leaders in place.”

He also credited a former board member, Jeff Berman, with “starting the discussion and starting the argument” about green power.

Berman, who led the board 5 years ago, told Big Pivots that he listened for a couple of years during his 12 years on the board before he started asking basic questions about power sources, costs, and alternatives. “It’s a shame it took 17 years, but better to move forward now and do it right,” he said.

He remains in Durango, having become a licensed engineer and is now “laser focused on actually building solar power and battery storage.”

Rachel Landis, a board member, pointed out that despite the national division and diversities among the directors themselves, they had thought critically about how to keep the best interests of La Plata customers in mind.

Joe Lewandowski shared that as recently as a year and a half ago, even after Tri-State had new leadership, he was discouraged. “It just didn’t look like we were going anywhere with Tri-State.” He, too, called it a win-win.

“It will actually allow us to move faster in that regard.”

**Pat Bridges
Tri-State G&T**

Carbon capture? Colorado panel says time to lay the legal groundwork

Colorado's pathway to deep, deep economy wide decarbonization may require the state to go underground, a task force has concluded.

In a report completed in January, the Carbon Capture, Utilization and Storage Task Force calls for state actions that will enable fossil fuels to be burned without polluting the atmosphere.

"It is important that CCUS be both enabled and appropriately regulated to ensure long-term storage of carbon dioxide and be deployed in ways that address equity and community concerns," the report says.

This could potentially yield "firm zero-carbon electricity generation to complement a primarily renewable grid, industrial decarbonization, and the potential use of direct air capture," the report adds.

The report recommends state legislators:

- Enable the Colorado Oil and Gas Conservation Committee to seek authority from the U.S. Environmental Protection agency for state regulation of Class 6 CO₂ injection wells.
- Clarify the property rights for CO₂ storage;
- Address state authority of siting for CO₂ pipelines; and
- Create a process for long-term stewardship of CO₂ sites.
- Clarify pore space ownership, and in determining the extent of pore space rights, consider whether pore space in saline aquifers should be a public good.

The report also finds that incentives may be necessary to push along the technology for use in hard-to-decarbonize sectors.

"As Colorado looks to decarbonize across all sectors of the state's economy, the focus of incentives for adoption or implementation of CCUS should be in sectors that may be hard to decarbonize without it."

The task force consisted of 7 individuals from state agencies, 6 from businesses and trade groups, 3 from environmental organizations, 2 from labor, 2 from electrical utilities, plus an expert from the Colorado School of Mines and a representative of the EPA.

Members of the task force found three key areas where CCUS may play a role going forward:

Emission-free electricity

The task force sees a potential role for carbon capture in helping utilities completely reduce emission from electrical generation. Colorado utilities have clear ideas about how to achieve 80 to 85 % penetration of renewables, and some thinking that they can get north of 90%. But all agree that the solutions to complete decarbonization aren't completely clear.

"This role of helping to complement a primarily renewable electricity system, as part of that last 10% to 15% of generation, is the potential role we see for CCUS in the electricity system."

Industry

Industrial emissions, primarily from cement plants and steel mills, rank fifth as a source of greenhouse gas emissions in Colorado. Multiple technologies may play a role in meeting the need to reduce emissions; carbon capture could be one.

Direct air capture

The Intergovernmental Panel on Climate Change has identified this still new technology as important for mitigating atmospheric pollution.



United Power announces plan to leverage energy from oil-and-gas wells

A press release distributed by United Power this week describes a new agreement as ground-breaking.

That cliché truly applies in this case as the Brighton based electrical cooperative and a company called Transitional Energy have signed a letter of intent to develop geothermal resources among some of the thousands of oil and gas wells in the service territory of United Power north and east of Denver.

Many oil and gas operators use electricity to power drilling rigs and other well-pad equipment. In this pilot project, owners-operators of wells in the Wattenberg field north of Denver—both working and abandoned—will be able to tap the warmth of the wells to generate electricity. In this way, they can offset their electricity purchase from United while reducing their greenhouse gas footprints.

“Reuse of existing wells and infrastructure is a capital-efficient way to use the heat beneath our feet,” the press release said.

The [website for Transitional Energy](#) says the technology has a payback period of 5 years.

Transitional Energy was launched with a \$500,000 grant from the Colorado Office of Economic Development and International Trade in 2020. It has an office on 17th Street in Denver.

In January the company also received a \$2.4 million grant from the US. Department of Energy’s Geothermal Technologies Office, [according to the company’s website](#). That grant is to be used to develop up to one megawatt of electrical generation from the Blackburn Oilfield in Nevada.

United has also distinguished itself as an innovator in other ways. In 2019, it put into operation a 4-megawatt battery storage complex, still the largest in Colorado.

“United Power is excited to work on this innovative pilot project,” stated Dean Hubbuck, United Power’s chief energy

resources officer. “Utilizing clean, economical geothermal energy to provide local power that can be dispatched when needed is a critical component of our growing energy portfolio. Geothermal energy represents a huge untapped renewable resource that can reduce our reliance on power from other traditional sources.”

Nearly half of oil/gas wells in Colorado classified as marginal producers

“Of the 52,000 total wells in Colorado, 20,349 based on state data, produced less than the equivalent of 2 barrels (BOE) of oil and gas per day in 2020—an amount considered uneconomical to operate. The (Colorado Oil and Gas Conservation) commission has used production of 5 BOE a day as a marker for “relatively unprofitable assets” that pose heightened risk of becoming orphaned if transferred in large volumes. ... The COGCC estimates it costs an average \$92,700 to properly plug and abandon a well in its orphaned-well program.”

– Colorado Sun story, “Some fear the transfer of wells to smaller operators increase the risk they will be orphaned,” Jan. 24, 2022.

Eagle County sees no good from crude oil trains

Eagle County is willing to go to court in an effort to prevent trains carrying crude oil from Utah going through Eagle County.

As first reported by RealVail, the U.S. Transportation Board in December approved an application for a new 85-mile rail line to run from the oil fields in the Uintah Basin of Utah through Colorado.

Oil from the basin around Vernal is currently trucked to railroads or refineries. It is too heavy to be pumped through pipelines. The amount of oil being eyed for extraction could not readily be shipped by truck.

The Salt Lake Tribune in December said that the Uinta Basin Railway is projected to cost \$1.4 billion and be financed and operated by private firms. Under a public-private partnership, Rio Grande Pacific Corp would operate the line.

The Ute Indian tribe, which relies on oil and gas production as a revenue source, is expected to become an equity partner, the Tribune reported.

Eagle County had appealed the decision by the Surface Transportation Board in January 2021. Eagle County was concerned about the oil being shipped across a revitalized Tennessee Pass line. Freight trains stopped using that route between Dotsero and Canon City in 1996. The federal board—the governing agencies for railroad routes—denied that and another request in September 2021.

The most recent twist is that the Eagle County commissioners have decided they are willing to challenge the federal agency’s decision on the basis of “procedural errors.” Matt Scherr, a county commissioner, said the county is concerned that the federal agency would allow use of The Tennessee Pass line without the necessary broader review.

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How electricity today is like Colorado's road system 100 years ago

by Allen Best

Imagine life in Colorado before direct flights to ski towns, before the interstate highways or even two-lane paved highways. In 1922, the most expedient way to drive from Denver to Grand Junction was through Buena Vista. In winter, even that was impossible. No Continental Divide crossings were plowed until Berthoud Pass in 1930.

Construction of roads came in increments. In the late 1930s, New Deal programs improved a primitive road across Loveland Pass and also replaced a horse trail with the first road over what is now called Vail Pass. The 1970s produced the four lanes of Interstate 70.

In electricity, something similar has begun, but the steps promise to be more rapid. Three Colorado utilities, including the state's largest, Xcel Energy, announced in January they will join something called an energy imbalance market in April 2023. Colorado's second largest electrical provider, Tri-State Generation & Transmission, and other utilities had previously joined the same market in 2021.

Directly or indirectly, nearly every energy consumer in Colorado is impacted by these first small steps toward sharing electricity across broader geographic areas. Details can induce yawns, but the big idea should interest anybody who wants reduced emissions while maintaining reliability and reducing costs.

Bryan Hannegan, chief executive of Holy Cross Energy, the cooperative serving Vail,

Aspen and other areas along I-70, puts it succinctly.

"We have a really ambitious and some would say impossible goal of 100% renewable energy by 2030," he said at the recent Colorado Solar and Storage Association conference. "A broader regional market is an absolutely critical part of our strategy."

The existing electrical system in Colorado and other western states is best understood as a bunch of semi-isolated valleys or islands. By one measure, there are 18 such islands, connected but with little easy flow of electricity between them. Think toll roads.

This new energy imbalance market is like a beginner ski slope. It provides some benefits, only the easiest tentative steps. The prize will be an organized market that efficiently matches supplies with demands across a broad geographic area. A common market mechanism is called a regional transmission organization or RTO.

Building new transmission will be expensive and siting difficult. "But if you like clean energy, you have to love transmission," said Hannegan.

Hannegan talked about being able to optimize the value of solar energy produced in the Roaring Fork Valley while also



drawing on hydro power from the Pacific Northwest. Others think fondly of solar power in the desert Southwest even as Colorado cranks up production of wind on its eastern plains.

Colorado in 2019 ordered a study, now complete, that conservatively found ratepayers will save 4% to 5% if utilities join an RTO. A 2021 law says utilities must join an RTO by 2030 or have a good reason why not.

Jeff Baudier, the chief executive of CORE Electric Cooperative, the state's largest, with 165,000 members in Castle Rock and surrounding areas, wants this wholesale market to happen soon. It will be studied forever if we let the utilities study it forever," he said. "If you give utilities mandates, they will honor it. They may not like it at first, but we will figure out a way to make it work and protect the best interests of our customers."

The chief executive of United Power, the state's second largest cooperative, also wants to see Colorado utilities become part of an RTO sooner, not later. "This is a Nike moment," said Mark Gabriel. "Just do it."

The cooperative serves metro Denver's fast-growing northern fringe as well as portions of the Wattenberg oil-and-gas patch. It currently gets wholesale power from Westminster-based Tri-State, but in December announced plans to leave that family to explore the world as a single. Gabriel, the chief executive, likened the utility's changed status to somebody contemplating divorce who changes his or her relationship status on Facebook from "married" to "it's complicated."

Complicated is also how almost everybody describes the task of joining or forming an RTO or some other large wholesale market. Gabriel wants a more hurried pace than Colorado law provides.



But there are major questions about which path to take. States have varied interests. Colorado wants no emissions, while Wyoming wants to burn coal. Another issue is governance. One opportunity is California's CAISO. But even if

Colorado under Democrats thinks much like California, it won't want to accept CAISO as currently governed. California must allow the organization independence.

How about looking east? Colorado utilities are now dancing with the Arkansas-based Southwest Power Pool's energy imbalance market. But getting married in an RTO is complicated by an important seam. Colorado and other mountain states are on different grids from Great Plains states, with only a few, narrow portals among them.

Why not a third option, a new wholesale market that can still balance diverse resources and demands across a broad geographic area, asks Alice Jackson, the chief executive of Xcel's Energy's Colorado division.

Vijay Satyal, who looks after regional markets for Western Resource Advocates, says Western states have room for two RTOs, but probably not more.

Whatever the answer, the owner of the Climax Molybdenum Mine near Leadville, for many decades one of Colorado's two largest electrical consumers, is ready for utility suppliers to join or create a broad, wholesale market.

Failure to efficiently integrate supplies to meet demand represents a market failure, said Johnny Key, the company's director of energy and power solutions, "and these market failures are just costing us money." Absence of wholesale markets, he added, is costing everybody money.

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