

BIG PIVOTS

Energy and water transitions in Colorado and beyond

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Assembling a map for a long road trip to decarbonization

Halving carbon emissions from Colorado's economy by 2030

by Allen Best

Colorado in May 2019 set out on a long road trip when Gov. Jared Polis, sitting at a table set up near a community solar garden in Arvada, signed [HB 19-1261](#), the Climate Action Plan to Reduce Pollution.

Spring sunshine, so full of promise and expectation, swathed the gathering of several hundred legislators, activists, and others who had turned out to celebrate Colorado's adoption of

greenhouse gas reduction targets. The targets were then and remain among the most ambitious in the nation.



Gov. Jared Polis

The law celebrated that day identified three key mileposts. The first comes in 2025, when Colorado is supposed to achieve 26% reductions in its emissions as compared to 2005 levels.

That sounds like a heavy lift, even frightening, except that Colorado since 2005 has already reduced emissions 18%. The reductions have much to do with the closing of several coal plants and operation of remaining plants at less than full capacity, their relative idleness enforced by the emergence of lower-cost renewables.

The 2030 goal might cause some fidgeting, though. By then, Colorado must wring 50% of the emissions from its economy.

Then there's the 2050 goal of 90% reductions. But who can think that far ahead?

Unlike the clustering under blue skies in Arvada a year ago, the shaping of the roadmap for the next decade and beyond has moved indoors and, because of the ever-

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present threat of covid-19, physically distant. It's wonky and, if tedious to follow, is the stuff of big, important ambitions.

Another state law, [SB 19-096](#), Collect Long-term Climate Change Data, required a statewide inventory of greenhouse gas emissions. For this it delegated primary authority to the Air Quality Control Commission. The AQCC is associated with the Colorado Department of Public Health and Environment.

But legislators also explicitly recognized the central role of electricity in reducing emissions as was reflected in both [SB19-236](#) and HB 1261 and instructed the PUC to achieve 80% reduction in emissions from electrical generation by 2030 in those utilities over which it has jurisdiction. Separately, the AQCC has authority over municipal utilities and electrical cooperatives.

The Colorado Energy Office, or CEO, has been in the middle of this design of a roadmap. Also involved in lesser roles have been the departments of agriculture, natural resources, and transportation.

On a recent Monday, Will Toor, the CEO director, and representatives of the health and environmental department, shared with the PUC commissioners what this roadmap looks like so far. In the time of covid, it was an unusual meeting in that there were no dogs barking in the background. This meeting went in the other direction. Will Toor, who directs the energy office, confided jokingly that it was the first time in a month that he had worn a tie. He didn't confide whether he was wearing shorts or perhaps pajama bottoms.

Colorado wants to first get a strong handle on what is producing the emissions now and, because the baseline for measuring progress is 2005, what emissions were then. Like a low-resolution photo tripled in size, Colorado currently has a relatively blurry picture of the emissions.

Some sectors of the economy will deliver crisper images than others. Toor said it may be impossible to get a handle on emissions from the oil and gas sector in 2005. Indeed, some of the current regulatory efforts underway in Colorado seek to better identify methane leaks from pipelines and other hydrocarbon infrastructure. Methane is a primary constituent of natural gas and a powerful if relatively short-lived greenhouse gas.

Measuring carbon dioxide emitted by the electrical sector will be relatively easy. Colorado has 7 coal-generating stations (some with multiple units) and 18 gas-fired plants. [See Wikipedia lists](#). Even so, some mathematical detective work will be required. How much power generated by Colorado power plants gets exported outside Colorado? Xcel Energy says 0.2 % of all its electricity generated in Colorado got exported in 2019.

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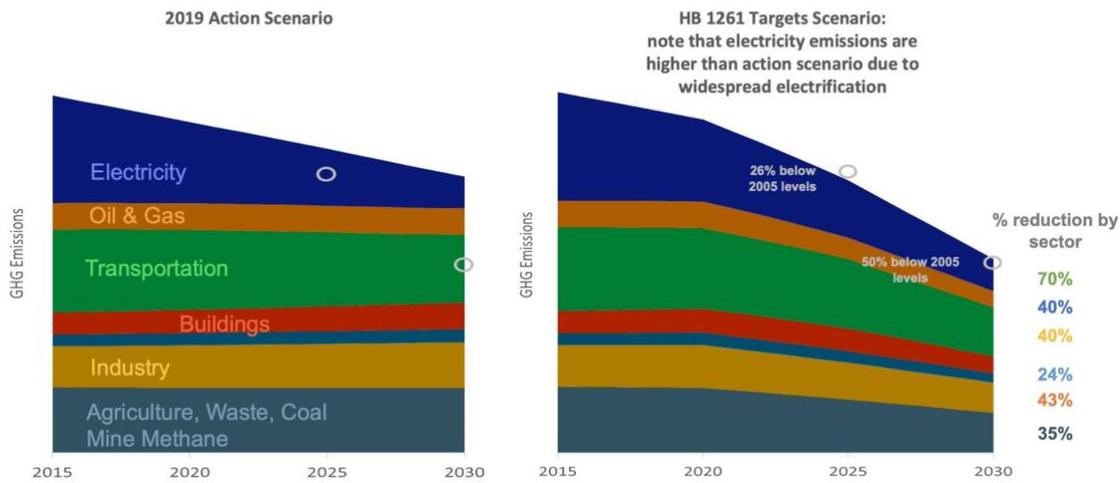
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View the agenda for the June 18, 2020 online event at <https://cossa.co/solstice/>

Tickets are \$25, with \$10 donated to the Food Bank of the Rockies to support their efforts during the COVID-19 Crisis



HB 1261 Targets - Example Emissions by Sector



More important, what is the carbon footprint of electricity imported into Colorado, as occurs with electricity generated by a power plant at Wheatland, Wyo.

These data will become far more important in the next two years as Colorado electrical utilities join imbalance markets, allowing more sharing of electrical supplies across broader regions. Even more powerful will be Colorado utilities joining into a regional transmission organization, which allows moving electrons on the grid at a relatively massive scale without regard to state borders and perhaps existing limitations of the Western electrical grid.

Colorado also gets energy imported from Canada and elsewhere to the Suncor refinery north of downtown Denver. It works the other way, too. Some of the natural gas produced in the Piceance Basin of Western Colorado gets exported north to Wyoming and the Rockies Express pipeline along I-80. Some oil from the Denver-Julesburg Basin of northeastern Colorado also gets exported.

Regulation 22, which was adopted unanimously by the Air Quality Control Commission on Friday after almost two days of testimony and discussion, will provide the platform for what will be needed.

Joshua Korth, who leads the technical analysis for climate change with the Colorado Department of Public Health and Environment, told the PUC commissioners that Regulation 22 will put fairly specific guardrails on what type of information will be collected. One intent is to limit reporting requirements of small energy providers who get their bulk supplies from others.

That was indeed what happened after about 16 hours of testimony and discussion at the Air Quality Control Committee meeting. More about that on page 4.

The state agencies creating this road map see electrical generation being crucial. The coal plant at Boulder has been closed, one in metro Denver converted to natural gas, and small plants near Grand Junction and Nucla have also been shuttered, too. Still more and bigger closures lie ahead at Pueblo and Craig during the next 10 years. Yet others—Hayden, Pawnee, and Comanche 3—are questionable.

This will occur even as electrical demand in Colorado grows to supply electric cars and other, larger vehicles, such as buses. Transportation has probably become the largest cause of greenhouse gases in Colorado. The state hopes to have 42% of cars in electrified by 2030 compared to just 2% or 3% now.

The state also sees expansion of electricity in the building sector, displacing natural gas, but with smaller gains as compared to transportation. Further decarbonization of electricity will have magnified impacts in these other sectors.

The state officials see several different paths to achieve the reduction targets, but they don't yet have a preference. What is abundantly clear—and was to legislators last year—is that all the paths involve going through the PUC chambers.

“What is really striking here is how much of it falls within the wheelhouse of the PUC,” Toor told the PUC commissioners.

The pathways, though, are still being defined. Toor said the roadmap should be complete by the fall, at which time the agencies will be coming forward with recommendations for administrative and regulatory policies and also legislation.

Toor also said that the state agencies believe a “fair amount” of hydrogen will be produced by 2030 in Colorado through electrolysis, using wind and solar energy to do so, and displacing fossil gas in that way.

Agriculture will necessarily be treated differently than pollution from power plants because it's difficult to measure and because there are so many dispersed farms, some large but many small. Dairies and the like also vary in dimensions. Too, SB19-096 specifically exempted agriculture for obligatory reporting unless there are major sources.

Instead, the state will seek voluntary reporting of emissions, the same approach as for smaller municipal solid-waste landfills and domestic wastewater treatment plants.

Toor pointed out that agriculture historically has been approached differently from other industries. “We would anticipate that the focus on the agricultural side would be on incentives as supposed to direct regulation.”

Rules now in place to gather emissions data. Has the time arrived to talk carbon pricing?

by Allen Best

Colorado now has rules guiding collection of greenhouse gas emissions. It's viewed as an elemental step for designing strategies for sharply ratcheting down greenhouse gas emissions during the next decade and beyond.

But whether Colorado is moving fast enough to honor the intent of legislative mandates from 2019 and the underlying climate change reality that spurred those laws is a question that will be explored more in depth when members of the Air Quality Control Commission gather virtually twice during June.

The commission on Friday, May 22, unanimously adopted Regulation 22, using language recommended by staff members at the Colorado Department of Public Health and Environment after a series of last-minute compromises over fine-tuning. The regulations have two parts: the data gathering and also a phasing out of hydrofluorocarbons, or HFCs, greenhouse gases that have 1,000 to 3,000 the warming capacity of carbon dioxide.

The phase out of HFCs is being done on the same page offered by the U.S. Climate Alliance. California, Washington, Vermont, and New Jersey are doing so beginning in 2020-21, while a handful of other coastal states and now Colorado will follow in 2021-22. The phaseout includes aerosols and foams, some of which are used in building materials, beginning in January, and refrigerants over a two-year time frame beginning in January, and air conditioners/chillers beginning January 1, 2024.

The commission approved an exemption for a manufacturer of chillers in Pueblo that employs 500 people.

The emissions reporting rules spurred more debate. There was some protest from the oil and gas sector, but on the edges. There were also protests of rural communities such as Garfield County closely aligned philosophically—and the representatives said economically, too—with oil and gas production.

But the legislative mandates underlying these new regulations made the protests mostly empty.

The more interesting debate was about whether the proposed reporting requirements went wide enough and deep enough.

There was no protest about the regulations governing collection of the electric sector data. Collection is relatively easily accomplished.

Transportation is more difficult. Colorado has one refinery, Suncor, located along the South Platte River north of downtown Denver. It accounts for roughly 40% of gasoline sold in Colorado. But what about the 60% of Colorado's liquid fossil fuels that arrive by truck, train tankers, or pipeline? The state can use various methods to get a bead on the emissions component using other databases, but the state doesn't want to immediately reach out to those many sources to begin direct reporting.

Two powerhouses, the Environmental Defense Fund and Western Resource Advocates, said the state was missing a big opportunity.

One reason for getting that information directly, said Pam Kiely, senior director of regulatory strategy for the EDF, is to begin building relationships, something that staff members of the state health department's climate division conceded they do not have.

Stacy Tellinghuisen, of Western Resource Advocates, said it was important to get the reporting right from the start

given the daunting work that lies ahead. If the commission can later revise the rules, there's no time to wait, she emphasized.

Instructively, though, three of the six commissioners who voted for the state agency's preferred compromise are from either the Boulder or Aspen areas. All lauded the state staff agency effort of the last few months. One of them, Auden Schendler, described it as "Ph.D-level plus."

But several of the commissioners—those from the Aspen and Boulder areas—also fretted that for all the diligence, it's just not fast enough.

"We are not reinventing the wheel. We need to make the wheel go faster," said Elise Jones, a Boulder County commissioner who is on the commission. She pointed to the work done by California and Oregon by E3, the consulting firm hired by Colorado to assist in roadmap planning.

Both Jones and Jana Milford, a professor at the University of Colorado-Boulder who is on the commission, pointed to the urgency expressed by House Speaker KC Becker at the outset of the hearing. She had played a crucial role in adoption of the legislation that sets the targets for emission reductions and the baseline measuring. She emphasized the need for "proposed draft rules by July 1, 2020, to cost-effectively allow the state to meet its greenhouse gas reductions goals," as the [bill summary of SB19-096](#) puts it.



House Speaker KC Becker

Garry Kaufman, director of the Air Pollution Control Division within the Colorado Department of Public Health and Environment, disagreed. He said he believed it was drafted with the intent of avoiding hard deadlines. "I don't agree that the statute is clear," he said.

The disagreement was not personal, he said. “We all care about these things. It’s just a how do we get from where we are to where we need to be.”

Milford agreed with Jones about the need to pick up the pace. She pointed to many menu options. “California is a good example of a state that has a lot of standards-based performance regulation but also a regulatory backstop that is enforceable,” she said. “I think it’s important to discuss this option.”

Several of the commissioners talked about the need to begin discussion of carbon pricing, whether directly with a tax such as has existed in British Columbia since 2008 or cap-and-trade regulations such as California has and were used by states in New England to lower emissions from the electric sector.

Schendler talked about using the opportunities presented by the covid-19 pandemic to accelerate action on climate change. He pointed to the March 23 issue of the [Economist magazine](#). “Following the pandemic is like watching the climate crisis with your finger jammed on the fast-forward button,” the magazine said.

“As we explain this week, the pandemic both reveals the size of the challenge ahead and also creates a unique chance to enact government policies that steer the economy away from carbon at a lower financial, social and political cost than might otherwise have been the case. Rock-bottom energy prices make it easier to cut subsidies for fossil fuels and to introduce a tax on carbon.”

Schendler also pointed to testimony at the outset of this and other hearings. Commenters don’t get into details of public policy, he said, but they make clear that they want action on climate change.



Vehicle electrification gets real with plans for charging infrastructure

Xcel wants to spend \$102 million

by Allen Best

Colorado will soon get serious about its pivot to electrical transportation. The state’s two investor-owned utilities have submitted plans to the Colorado Public Utilities Commission about how they intend to accommodate but also spur the widespread adoption of electric vehicles.

Xcel Energy says in its filing that it wants to spend \$102 million through various programs and infrastructure investments.

“The most important thing is the scale,” say Travis Madsen, transportation program manager at the Southwestern Energy Efficiency Program. “I think it is clear this is not a pilot program anymore. This is something that Xcel will really try to do at scale.”

He said Xcel’s program will be critical to Colorado achieving its goal of broad and deep penetration of electric vehicles, altogether 42% of sales within the next decade. Sales now are about 3%.

For Xcel’s service territory, this would mean a bump from 24,000 cars today to 450,000 cars in 2030. The company has more than 60% electrical market share in Colorado.

Xcel serves primarily metropolitan Denver, but also Summit County, Leadville, Fairway, Greeley, Sterling, Brush, Glenwood Springs, Battlement Mesa and several dozen more—including Raymer, a town of 110 people between Fort Collins and Sterling.

Black Hills Energy, which serves Pueblo and adjoining areas, also filed plans.

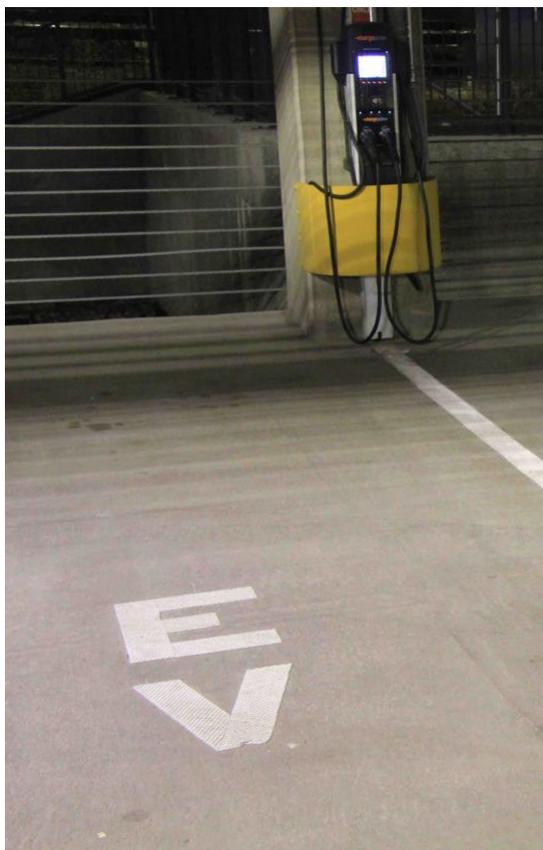
A law adopted last year, [SB19-077](#), authorizes Colorado’s two investor-owned

electrical utilities to provide charging ports as regulated services and allows cost recovery.

This electrified future is almost certain to look very different than the corner gas station of today. Likely most of the charging will occur at home in the dark of night, when surplus renewable energy most often is available.

Xcel wants to provide higher-speed Level 2 charging equipment to residential, multi-unit dwellings and work places in exchange for a fixed monthly charge that is included on electric bills of customers. The proposed rates vary between \$13.29 a month for a single-family house to \$55.38 maximum for fleet and workplace charging sites as well as some shared parking in multi-unit dwelling.

Also different will be price differentials. When you buy gasoline for your car, the rate is unlikely to change much. Week to week,



yes, or even day to day. But not hour to hour.

This differential is seen dramatically in the fast-charging stations Xcel proposes to build in places that private companies find financially unfeasible. There, Xcel proposes to charge 90 cents a minute normally but, about 60 hours a year, at \$3.75 a minute.

Steven Wishart, manager of pricing and planning for Xcel in Colorado, explained in testimony submitted to the PUC that charging during peaks in system demands could require the construction of new power generation and associated transmission limits. “Therefore, it is critically important to dissuade drivers from charging during peak events on our system,” he said.

The rates per minute—90 cents and \$3.75— compare with 26 cents a minute by Tesla, 58 cents a minute by Electrify America, and 30 cents a minute by EVgo.

Xcel says it proposes to subsidize the fast-charging stations with the monthly charges for other customers. “We are proposing to place these chargers to serve underserved lower-income and rural areas,” Wishart said.

An analysis of the benefit-cost of transportation was conducted by E3, a consultancy. That study supports the expectation that the expansion of electric vehicles will put downward pressure on electric rates, as charging of EVs will tend to be focused in off-peak hours. This will benefit all customers.

And then there’s the benefits of reduced air pollution.

But EVs don’t make sense everywhere, all the time. The study found that electric school buses, because they tend to travel relatively few miles on a daily basis and rarely on weekends and during summer, are not cost effective.

To see the filing at the PUC website, search for proceeding 20A-0204E for Xcel and 20a-0195E for Black Hills.



Might one of nation's youngest coal plants get early retirement?

by Allen Best

When Comanche 3 began producing electricity in 2010, the coal-burning unit at Pueblo, Colo., was projected to continue operations to 2070.

Now, it's an open question whether it will continue operations beyond 2030.

The Colorado Public Utilities Commission on May 13 decided to launch an investigatory docket about Comanche 3, Colorado's largest coal plant. The investigation, said PUC Chairman Jeff Ackermann, should include modifications of the unit and "even retiring options. I think that's putting it all on the table."

Colorado's PUC plans investigatory docket about future of Comanche 3

Comanche 3, at left, and Comanche 1 and 2 at right, on Christmas day in 2014.

Photo/Allen Best

Ackermann pointed to a presentation to the PUC commissioners earlier in the week by other state officials that identified further coal plant closures, beyond those already announced, as almost essential for Colorado to reduce its economy-wide emissions 50%, the target identified for 2030 in a state law adopted last year. That law, [HB19-1261](#), or the Climate Action Plan to Reduce Pollution, also identified an 80% reduction on carbon emissions by 2030 by electrical utilities relative to 2005 levels.

The PUC commissioners will have a full discussion about the scope and purpose of the investigation, likely in June, said Terry Bote, spokesman for the PUC.

Comanche 3, completed at a cost of \$1 billion, remains one of the newest and likely last coal plants in the United States to be

built. It has 766 megawatts of generating capacity, compared to a combined 660 megawatts by the two adjoining Comanche units, 1 and 2, which were completed in 1973 and 1975. Those two older units are scheduled to close in 2022 and 2025.

The story begins even before the Colorado PUC formally approved the plant in January 2005. In planning construction, Xcel chose to use a state-of-the-art design that included use of alloys in a component of Comanche 3 called the finishing superheater. Problems appeared within a year of operations. Because of multiple leaks, the original components were replaced by stainless steel tubes in 2015. There had been 15 outages of the plant because of the leaks plus a 79-day outage while the new superheater was installed.

The Sierra Club persuaded two of the three PUC commissioners in December to disallow \$11.7 million spent by Xcel to fix the problem from the rate base. The rate base is the value of property on which a public utility is permitted to earn a specified rate of return.

In March, Xcel asked for the PUC to reconsider this and other elements of its decision, all in the interest of allowing Xcel to earn more money. The PUC had authorized a return on equity, or REO, of 9.3%. This rate, said Xcel, significantly lagged the 9.63% that was the national average authorized REO for vertically integrated utilities such as Xcel. In Colorado, Xcel formally operates under the name Public Service Co. and delivers more than 60% of electricity consumed in Colorado.

“As established in the record and acknowledged by commissioners in deliberations, Public Service is a high performer in the electric utility industry—not only in the State of Colorado, but as compared to its peers at a national level—from rates to reliability to implementation of environmental objectives,” Xcel said in its

March 2 application to the PUC for a reconsideration of its decision about rates.

“Our customers enjoy bills well below the national average and a high level of reliability, and Public Service under the Xcel Energy umbrella is leading the clean energy transition not just here in Colorado but nationally.”

But, added the filing, the commissioners made repeated decisions “that deviated from the record, well-established principles of law, and sound policy.” Xcel pointed to 9 discrete issues, including the Comanche filing. Ackermann pointedly denied Xcel’s accusations.

Both Ackermann and John Gavan credited Xcel’s performance. Gavan called the company a “leader in the ESG (environmental, social and governance) space.” But Gavan also pointed to Xcel’s stock and individual performance, which he described as “stellar over the last decade.”

Ackermann was similarly complimentary. “I don’t want anything to be said today or throughout the long proceeding to be interpreted as lack of recognition or affirmation of Public Service company’s leadership in clean energy.”

But he later offered a mild rebuke of Xcel. In reducing emissions, he added, Public Service is merely complying with the law. “Public Service Co. seems to be advocating that compliance with the law should be the

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basis for an increased REO. And I don't think that argument makes sense."

Later in the discussion, Comanche 3 came up. The coal plant has "too many operational problems," said Gavan, and then cited "turbine blade erosion and other issues."

"I remain very concerned about the ongoing performance and operational problems with Comanche 3," he said. "I would like to open an investigatory docket to better understand the depth of this issue and the rate impacts these ongoing problems have imposed on ratepayers."

Ackermann agreed while pointing to a subtle distinction. Malfunction might be the wrong way to describe the problems. "Like debating the quality of the meal in a restaurant when the real issue is how well the kitchen is being run." He said the commissioners need to identify 4 or 5 discrete ideas about how to frame the Comanche 3 investigation.

The timing of this investigation will coincide with the planning by Xcel of how it intends to move forward in coming years. That electric resource plan is due to be submitted to the PUC in spring 2021.

Megan Gilman, the third PUC commissioner, did not participate or vote in the weekly meeting discussion. She was appointed to the commission in mid-March, long after the PUC's deliberations about the rate increases for Xcel. A possible complicating factor is her prior position as



The view from the top of Comanche 3 and its smokestack in 2010, shortly after operations began. Photo/Allen Best

chair of the board of directors for Holy Cross Energy, a minority owner in Comanche 3.

"I think it makes a lot of sense, particularly in light of the statewide carbon-reduction goals, and I think Ackermann was right to connect the dots," said Matthew Gerhart, staff attorney for the Sierra Club Environmental Law Program in Denver.

Not only does Comanche 3 have a history of problems, he added, but it is also the single largest emitter of carbon dioxide in Colorado.

To close Comanche 3 relatively soon would also leave Xcel and its minority owners with a giant debt still mostly

undepreciated. One possible solution would be to tap securitization, a tool authorized by [SB19-263](#). A utility can issue bonds in the amount of the remaining investment for rates that are far lower than normal, accelerating payment.

Public Service of New Mexico will use securitization for the early retirement of the San Juan Generating Station near Farmington. (See April 9 issue of Big Pivots, “New Mexico to use new financial tool to retire coal plant. Will Colorado also?”) See also Oct. 2, 2018, story, [“How refinancing could help retire Colorado coal plants sooner.”](#))

Securitization has more value to Xcel and other investor-owned utilities than for assets owned by Tri-State and its members, who have different financing structures.

Xcel operates Comanche 3 and owns two-thirds of the production. Sedalia-based Intermountain Rural Electric Association, a cooperative with a crescent-shaped service territory around the south side of the Denver metropolitan area, owns roughly a quarter. Holy Cross, also a cooperative, serves the Vail, Aspen, and Rifle areas and has an 8% ownership. It sells its share of the production from Comanche to Guzman Energy.

Given the opportunity to comment, none of the three owners of Comanche 3 chose to do so. Holy Cross said it would be premature to comment absent formal notice from the PUC.

Xcel partially or wholly owns eight different coal units at four generating stations in Colorado, with a total of 2,000 megawatts of capacity. It plans to close the two original Comanche units at Pueblo, which together have 660 megawatts of generating capacity, in 2022 and 2025. It has not disclosed its plans for its ownership stake in Hayden 1 and Hayden 2, near Steamboat Springs, nor for Pawnee, near Brush. It owns 100% of the latter. Those

plants were originally scheduled to be retired between 2030 and 2041.

A 2019 study by Strategen Consulting for the Sierra Club found that Comanche 3, if allowed to operate through 2050, would cost nearly \$1.8 billion to operate.

In a 2009 report, [“Colorado’s Billion Dollar Mistake,”](#) Leslie Glustrom, of Clean Energy Action, had already reached the same conclusion. “We can choose to do nothing and allow what is a now a \$1 billion dollar mistake to become a \$2 billion or more mistake,” she said. Better, she advised, would be to close the coal plant even before it opened and instead invest in carbon-free infrastructure.

Of course, Xcel and other utilities were not then nearly as comfortable integrating wind and solar resources in ways to ensure reliability as they have become. Xcel in 2018 adopted a goal of 80% carbon-free energy by 2030 and emissions-free energy by 2050.

Alice Jackson, president of Xcel’s Colorado subsidiary, said at a forum in late April that the company is looking into both modular nuclear units and carbon capture and sequestration as ways to get from 80% to 100%

This story was published on May 18 at:
[Retire Colorado’s newest coal plant?](#)
See comments there

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Flexibility crucial to Fountain's contract with Guzman Energy

by Allen Best

In 2014, when Curtis Mitchell negotiated a new wholesale electrical contract for Fountain, the city located 10 miles south of downtown Colorado Springs, he thought it was a swell deal. That contract lowered rates for Fountain's customers by 21%.

"We thought the contract was the end-all, be-all," Mitchell recalled this week. "But it's actually gotten better."

Fountain last week entered into a new deal, this time with Guzman Energy, and Mitchell expects rates to slip even more beginning in August.

It's an unusual contract. Fountain must continue to honor its existing contract with Xcel Energy subsidiary Public Service Co. of Colorado. That contract from 2015 continues through January 2027. After that, Guzman will supply Fountain through 2039.

Guzman will be paying Fountain this summer the first of \$12.2 million in payments for the right to have the contract in 2027. This will give Fountain's customers reduced rates. When the Guzman contract begins, costs will decline by 17% and wholesale costs 25%.

When Guzman begins supplying Fountain, Fountain will have an option to start building solar, either itself or through agreements with others. The intent is to enhance flexibility.

Mitchell points out that the price for solar has dropped to 2 cents a kilowatt-hour "Take the clock back 10 years and I could not have predicted that," he says.

Before signing the contract with Xcel, Fountain thought about building its own natural gas plant. Now he's very happy Fountain stayed foot-loose and fancy free.

"We are not stuck with a coal plant and trying to figure out how to reduce emissions," said Mitchell. "It gives us flexibility, which has really worked to our advantage as we negotiated with Guzman."

Fountain lies in a valley lined with coal plants: two coal plants operated by Colorado Springs Utilities and, 35 miles to the south near Pueblo, three coal-burning units of Comanche.

The contract with Guzman gives Fountain greater ability to respond to the uncertainties of the future. The contract allows Fountain to buy 20% of its power from another renewable energy source in 2033. Mitchell sees solar, whether in Fountain or elsewhere, as the most likely.

Mitchell says the flexibility of the new contract was a key advantage because of the uncertainties going forward. Shifts in the energy market are one consideration, but also uncertain is evolving requirements for reductions in greenhouse gas emissions.

Fountain, Colorado's fifth largest municipal electrical utility, is subject to a law adopted by Colorado last year to achieve 80% reductions in electrical supplies by 2030 and to eliminate all emissions by 2050.

Already, Mitchell has had what he describes as productive discussions with Will Toor, the director of the Colorado Energy Office. Toor is responsible for helping bring all utilities in Colorado not subject to review by the Public Utilities Commission in line with what is being called the Colorado Energy Plan.

Fountain delivers electricity to 19,000 metered customers but a total population of 60,000, including the adjoining Widefield and Security areas. Xcel provides 92% to 96% of Fountain's electricity. Hydropower delivered by the Western Area Power Authority and from Pueblo Dam deliver the balance to Fountain.

RMI pats Tri-State on back, describes it as a model for other G&Ts

by Allen Best

Another piece of evidence about the big pivot underway in energy comes from Rocky Mountain Institute, which in early May issued a case study lauding Tri-State Generation and Transmission. The study, [Tri-State Chooses the Low-Carbon Path](#), describes Tri-State it as a model for other G&Ts in the country still heavily immersed in carbon-based generation.

For this report, RMI had access to senior executives. How different than in 2018 when RMI was researching a report that was issued that August. That report found that of all the coal-burning units that supplied the 43 member cooperatives of Tri-State Generation and Transmission, only one—Laramie River Station, at Wheatland, Wyo.—produced electricity at lower costs than the renewables then available.

When I broke that story in 2018, (I was the first), I interviewed Mark Dyson, one of the two principal authors. He said that he got very limited cooperation from Tri-State. I did not talk to Tri-State before writing that story, but The Denver Post, coming out a few days later, did, and Tri-State said that RMI's report was based on incomplete data.

A few months later, at the Colorado Rural Electric Association, the then-CEO of Tri-State, Mike McInnes, explained Tri-State's sluggish embrace of renewables during his tenure. Tri-State, he explained, didn't want to be part at the spear tip of energy innovation.

"It's just not in my DNA," he said. Tri-State's strategy, he added, was to wait until technology was better proven. "We can come in and provide a much better product and become much more flexible as our rates go."

But according to the recent RMI report, even in 2018 Tri-State had begun laying out a new path. The upshot of that new path was unveiled in January 2020 by Duane Highley, who replaced McInnes in April 2019.

Tri-State plans to close its coal plant in New Mexico this year and its plants at Craig from 2025 through 2030. It expects to add 1,000 megawatts of new wind and solar generation by 2024, and likely more beyond that.

As a result of this generation shift, Tri-State expects to reduce emissions from its Colorado wholesale electric sales 70% by 2030, in line with state carbon regulations, the RMI report says.

RMI's report dips into the question of debt, if only briefly. It says that in preparing its Responsible Energy Plan, Tri-State needed concrete targets as well as a "clear plan for dealing with the debt that remains tied up in existing generation assets." What that plan is, the RMI report does not say. It seems to be the elephant in the room, one barely touched upon by my reporting and that of others.

In lauding Tri-State, the RMI report by Dyson and Katie Siegner, also glosses over continuing quarrels with two of its three largest members. It accepts the supposedly new "flexible" generation plan adopted in April at face value. United Power and La Plata Electric, as reported in Big Pivots No. 8, certainly do not. They say it is anything but flexible.

See: [Why Tri-State's new policies don't work for these two dissident members](#).

The report identifies a major challenge for Tri-State going forward being the need for transmission, which currently takes 8 to 12 years.

The RMI analysts credit Tri-State's willingness to engage with outside stakeholder groups through Bill Ritter's Center for the New Energy Economy.

Also noted was Tri-State's decisions early on to create a specific plan to

decarbonize its power generation rather than adopt aspirational targets. Keep in mind that this planning process was both before and after Colorado and New Mexico adopted broad and deep greenhouse gas targets in their 2019 legislative sessions.

Poudre Valley REA says it wants to have say with PUC

Poudre Valley Rural Electric Association has asked its members to weigh in on the case before the Colorado Public Utilities Commission about what constitutes a fair and just exit fee for two other members of the Tri-State Generation and Transition.

An administrative law judge this past week heard testimony involving the request by United Power and La Plata Electric, the first and third largest respectively among Tri-State's 43 members as determined by electrical demand. Poudre Valley is the second largest.

A press release from Poudre Valley said it had asked its members/owners to protest the exclusion of Poudre Valley from the case with comments to legislators and others.

"The Colorado PUC's decision on this case does not affect just the two cooperatives that filed. This case affects all Colorado cooperatives, including PVREA, who purchase wholesale power from Tri-State," said Jeff Wadsworth, chief executive of Poudre Valley.

For background, see:

- [Upheaval and Tension in Colorado](#)
- [United Power alleges Tri-State crosses](#)

[the legal line to 'imprison' it in contract to 2050](#)

Just one more reminder

If you want to see Big Pivots succeed, please think to pass this issue along to others



Kit Carson announces new solar milestone at Taos

Kit Carson Electrical cooperative has completed a 3-megawatt solar farm adjacent to the Taos Water Treatment Plant in northern New Mexico. It's the 17th solar array completed by Kit Carson.

This gives the electrical cooperative 19.8 megawatts of solar capacity. It has three more arrays in development. When they are completed, Kit Carson expects to have 53 megawatts of capacity, and that will include both solar energy and storage.

Kit Carson wants to be able to supply 100% of its members daytime needs with solar energy by 2022. It set out on this quest in 2016 after leaving Tri-State Generation and Transmission and hooking up with wholesale supplier Guzman Energy.

Construction begins on major wind farm near Albuquerque

Construction has begun on a wind farm southeast of Albuquerque that will consist of 111 turbines and have a total generating capacity of 306 megawatts. The La Joya Wind Farm near Encino being developed by Avangrid Renewables will be delivered to the Public Service Co.

The wind farm is projected to produce \$41 million over its lifetime as a result of its location partially on state trust lands. State trust lands were set aside in New Mexico and other Western states upon statehood to produce revenue for schools.

Avangrid Renewables began production from the 298-megawatt Cabo Wind Farm in late 2017. It is adjacent to the new wind farm.

Sowing fears of the solutions to climate change in disregard of all the evidence

by Allen Best

Merchants of fear have already been at work, preparing to lather up the masses later this year with disturbing images of hardship and misery. The strategy is to equate job losses with clean air and skies, to link in the public mind the pandemic with strategies to reduce greenhouse gas emissions.

It's as dishonest as the days of May are long.

"This is what a carbon-constrained world looks like," Michael McKenna, a deputy assistant to Trump on energy and environment issues, told [The New York Times](#).

"If You Like the Pandemic Lockdown, You're Going to Love the Green New Deal," [warned the Washington Examiner](#). "Thanks to the pandemic lockdown of society, the public is in a position to judge what the 'Green New Deal' revolution would look like," said the newspaper in an April editorial. "It's like redoing this global pandemic and economic slump every year."

What a jarring contrast with what I heard during a webinar conducted in Colorado during early May. Electrical utility executives were asked about what it will take to get to 100% emissions-free generation.

It's no longer an idle question along the lines of how many angels can dance on a pinhead. The coal plants are rapidly closing down because they're just too darned expensive to operate. Renewables consistently come in at lower prices. Engineers have figured out how to deal with

the intermittency of solar and wind. Utilities believe they can get to 70% and even 80%, perhaps beyond.

Granted, only a few people profess to know how to achieve 100% renewables—yet. Cheap, long-lasting storage has yet to be figured out. Electrical transmission needs to be improved in some areas. Here in the West, the still-Balkanized electrical markets need to be stitched together so that electrons can be moved across states to better match supplies with demands.

This won't cost body appendages, either. The chief executives predict flat or even declining rates.

Let's get that straight. Reducing emissions won't cost more. It might well cost less.

That's Colorado, sitting on the seam between steady winds of the Great Plains and the sunshine-swathed Southwest. Not every state is so blessed. But the innovators, the engineers, and others, are figuring out things rapidly.

Remember what was said just 15 years ago? You couldn't run a civilization on windmills! Renewables cost too much. The sun doesn't always shine and the wind doesn't always blow. You had to burn coal or at least natural gas to keep the lights on and avoid economic collapse. Most preposterous were the ambitions to churn vast mountains to extract kerogen, the vital component of oil shale. This was given serious attention as recently as 2008.

The economics have rapidly turned upside down, and the technology just keeps getting better along with the efficiency of markets.

As detailed in Big Pivots issue No. 10, Colorado utilities are now seriously talking about what it will take to get to 100% emission-free energy. Most of that pathway is defined by lower or at least flattened costs.

See: [Getting to 100% renewable energy](#).

Also: [Driving the shift to renewables](#).

Now that same spirit of ingenuity has been turned to redirecting transportation and, more challenging yet, buildings. It will likely be decades before we retrofit our automotive fleet to avoid the carbon emissions and other associated pollution that has made many of our cities borderline unhealthy places to live. Buildings will take longer yet. Few among us trade in our houses every 10 to 15 years.

It's true that we need to be smarter about our energy. And we are decades away from having answers to the heavy carbon footprint of travel by aircraft.

But run with fright from the challenge? That's the incipient message I'm hearing from the Republican strategists. These messages are from old and now discredited playbooks of fear. People accuse climate activists of constantly beating the drum of fear, and that's at least partly accurate. But there's also a drive to find solutions.

Too bad the contemporary Republican Party dwells in that deep well of fear instead of trying to be a beacon of solutions.

Do you have an opinion you wish to share? Shorter is better, and Colorado is the center of the world but not where the world ends. Write to me: allen.best@comcast.net