

BIG PIVOTS

Energy and water transitions in Colorado and beyond

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What constitutes radical given the scale of climate change risk?

By Allen Best

AVON, Colo. – For at least the last decade, the big question about climate change has been when will our Pearl Harbor arrive? When will we decide to offer a response relative to the risk?

In the late 1930s, as smart people realized the inevitability of the United States being drawn into the wars caused by German, Russian and Italian aggression in the Western Hemisphere and Japanese aggression in the Eastern Hemisphere, the United States officially remained aloof. By May 1940, Germany had marched eastward to the English Channel, and it appeared that an invasion of the British Isles might be next. Soon after, Winston Churchill delivered his famous "We shall fight on the beaches; we shall never surrender" speech.

Still the United States remained officially neutral. Not until 18 months after Churchill's speech, after the Japanese attacked the U.S.

ships at Pearl Harbor, did America get off the sidelines.

I asked that question about our Pearl Harbor moment in climate change some years ago at a Telluride Mountainfilm event that featured the photographer James Balog. I think he was then in the midst of photographing the disintegrating glaciers of Greenland. He said our Pearl Harbor moment for climate change would be the disintegration of the west shelf of the Antarctic ice shelf or maybe Greenland.

If the framing was different, the same fundamental question was being asked in the hallway at Battle Mountain High School last Wednesday evening. Battle Mountain is the public school for the Vail area, and this was after a meeting organized by Eagle County but also others, including Walking Mountains Science Center. The lead speaker was Dr. Robert Davies, a physicist from Utah State University who in the last decade has honed his skills in science communication. He gives a whale of a good Power Point-aided presentation. It's about 70 minutes long, but as best I could tell, none among the 400 to 500 people in the auditorium left.

Was he alarming? Yes. Did he shade his argument and the evidence to the high end to justify alarm? Maybe so.

Several days before, the [Wall Street Journal had reported](#) a "broad consensus"



Dr. Robert Davies said the risk is enormous and failure to respond should be considered radical.

among scientists had emerged that we are likely to see 3-degree C temperature increase by 2100. That's 5.4 degrees F. There had been—and still are—projected increases both higher and lower.

Davies spoke about the risk of 13 degrees F by 2100 and increases of 25 degrees F at the poles "and a completely different planet than we inhabit today."

But even that 13 F degree rise, if still at the edges, is probably a lot greater risk facing civilization than the risk posed by terrorists. Yet we all take off our belts and shoes, remove our computers and whatever else is required of us at airports and before entering many government buildings. And even this more modest 3-degree C rise will have vast consequences to sea levels, to montane ecosystems, and all areas

between. We're warming now at a much more rapid rate than when the last glaciers receded from Wisconsin and elsewhere 18,000 to 12,000 years ago.

Yes, there are natural cycles. The last time the Earth had carbon dioxide concentrations of 350 parts per million for any significant period, at least several centuries, sea levels were nearly 20 feet higher, Davies said. We're now approaching 420 ppm—and then there's also the worry about crossing threshold, the tipping points.

See video of Battle Mountain presentation here: <https://vimeo.com/387082864>

Davies spoke last October at a conference of mountain towns hosted by Park City. I did not attend, but heard soon

after Davies and others galvanized the invited delegates from the mountain resort communities.

"We were excited, we were energized," said Matt Scherr, the former mayor of Minturn, Colo., who last year was appointed as an Eagle County commissioner. The conference, he added, delivered clear message that the "answer that comes next has to come from all of us."

And that's how Davies came to speak on a snowy January evening at Battle Mountain High School. The event was called "Getting to Zero: From Radical to Rational." The week before some 300 people had turned out in Jackson Hole, and the evening before 200 in Steamboat. After Vail it was Breckenridge. In February he'll be in Montana, both Bozeman and Missoula. ([See his website here](#)).

Carbon in the ground is at the heart of his presentation. He cites evidence that we can extract carbon for only 8 to 10 more years at the rate we have been—and then we'll have exhausted the budget that the atmosphere can accommodate.

"We have no time. We have to respond now."

He said we need to halve our carbon emissions by roughly half each decade going forward. Instead, last year, we increased the rate of our emissions by about 2%. In other words, we're accelerating.

And then he talked about radical vs. rational. Radical, he said, is knowing about a crisis and not responding. To act in response to the known information defines a rational response.

He also distinguished between viable and necessary. The task, he said, is to create "not what is viable but what is necessary, and making it viable is just the next step."

One other take-away message, a tricky one, is about personal change vs. systems



Kim Langmaid, right, urged those concerned about climate change response to turn out to public meetings.

change. Systems-wide change is what we need, the scale of response to match the scale of the problem. It's good to recycle, but not enough. It's not about feeling guilty about flying. We need broad, not just personal, policies. In this, he has much the same philosophy elucidated by Auden Schendler of the Aspen Skiing Co.

He did not say as much, but I would interpret this and added comments he made to be a stinging indictment of capitalism as currently constituted. The external costs of capitalism have mostly been ignored or unaccounted for. Polluting is free.

In the hallway afterward, somebody asked me: "What is the story that creates change?" That's a darned good question. It is the key question in Eagle County and elsewhere. And, how do you do so in the time frames that climate scientists are now talking about?

Traction has clearly been gained, as evident in the many net-zero resolutions and goals focused on 2030. Just last week, Big Sky, the bigish ski area in Montana, announced its goal of net-zero carbon emissions by 2030. "Zero" likely will be the big, big word of 2020. Or perhaps "Net Zero."

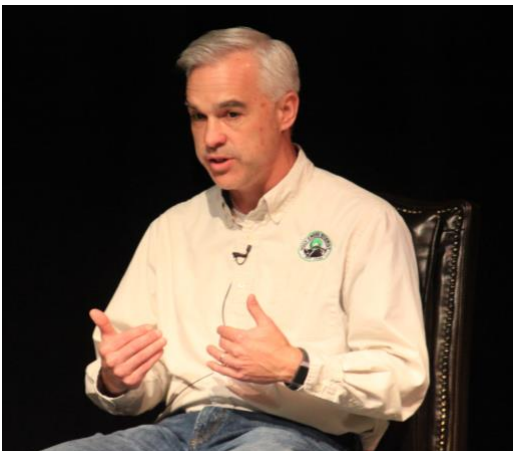
At the end of the program at Battle Mountain, Scherr, the Eagle County

commissioner, asked several panelists for observations. Kim Langmaid, who founded the Walking Mountain Science Center, has a Ph.D., and is on the Vail Town Council, shared her angst about something at the town council meeting the night before. She had not, she said, received support for what she considered to be an important climate change measure. People concerned about climate change need to show up to meetings, to testify, she said.

Bryan Hannegan, the chief executive officer at Holy Cross Energy, the local electrical provider for the Vail and Aspen areas, has a Ph.D. in earth science systems. He can probably be called a climate scientist, but long ago got engaged in energy, first in the Bush Administration and then at the National Renewable Energy Laboratory.

At Holy Cross, he has a real-world laboratory. What they've achieved in the last 23 months is quite impressive indeed. I will brazenly say that the Holy Cross story already is one of national interest. What emerges from their request for proposals (see story in the next issue of Big Pivot) could well confirm Holy Cross as a national leader.

Hannegan said the goal at Holy Cross is to provide a model for a utility that is 10 times bigger, with the hope that that bigger utility will influence even bigger utilities.



Bryan Hannegan said Holy Cross hopes to become a model for larger utilities.

The next day after Battle Mountain, I attended a meeting nearby in Avon of the Colorado Association of Ski Towns. The group gets together quarterly to talk about best practices and common concerns. The afternoon program was partly about the Climate Change Collaborative, the program put together by Eagle County in collaboration with most of the town governments and some others. It is directed by the Walking Mountains Science Center.

The key takeaway was the buy-in from the towns in Eagle County. For example, they're all paying a bit more for electricity to ensure it comes from clean sources. If they're not running together, they're walking together and in the same direction.

Echoing Hannegan's remarks from the prior evening, Breckenridge Mayor Eric Mamula said his town has a similar upward- and outward-looking motivation in its audience of 40,000 daily visitors. Seeing what they see in Breckenridge, if they can take that back to their communities, that is how Breckenridge will have outsized influence, he said.

Eagle County officials have been thinking hard about what constitutes rational public policy. What, for example, would be the response to a declaration of a climate emergency? What is the story, what is the narrative, needed to make such a declaration?

More than a trite resolution, such as many mountain towns adopted in 2008, with nary a thought of how to make it meaningful, the question is to create sturdy and long legs. It was nice that 400 to 500 people turned out for the event, but that's still a small portion of the county's nearly 60,000 full-time residents and a population that is likely more than double that.

The same day as the Vail-area meeting, world political and economic leaders were gathered in the Swiss mountain town of Davos for the World Economic Forum. They heard from the Swedish lass who has

emerged as the leader of the global climate movement. There, the 17-year-old Greta Thunberg sparred with the 73-year-old president of the United States. President Trump exaggerated, as usual, but got some things right in pointing out that scientists in the 1960s (most specifically Paul Ehrlich) were worried about the population explosion and in the 1990s there was a fear of peak oil, which now look shrill and perhaps silly.

What he did not point out was how close Great Britain came to falling to the Nazis in 1941. Had Hitler kept looking westward instead of attacking Russia, who knows where we'd be now. Again, that question I heard in the hallway at Battle Mountain High School comes to mind: What is the storyline that moves people, that makes the appropriate action acceptable, that ensures a response sufficient to the risk?

The activism of former Eagle County Commissioner Arn Menconi comes to mind. He was among the 38 protestors arrested at the State Capitol after intruding into the speech of Gov. Jared Polis. People in the oil patch want to impeach Polis because he's too radical, but to others Polis is too light-weight in his response to the gravity of the problem.

Despite the advice of the nation's premier climate activist Bill McKibben that people with gray beards should be getting themselves jailed, I remain leery of that tactic except perhaps when the message is carefully calculated. I'm not sure it was in this case.

Still, even as it snowed in Vail, it felt oddly warm. Somebody on Facebook made the same observation about Aspen that day. "A few degrees warmer and it'd be rain." In other words, it felt right for March, but not for January. More bizarre was the wasp on my front porch. Sluggish, but moving. In January?

Pueblo takes step toward May 5 vote on municipalization

by Allen Best

Pueblo voters on May 5 may decide whether to jettison Black Hills Energy, the current investor-owned utility that supplies the city and surrounding areas, including Cañon City and Florence, with electricity.

As for Boulder and its pending divorce with Xcel Energy, that election may come late in 2020 or 2021, Boulder Mayor Sam Weaver said on Saturday.

The Pueblo City Council on Monday night voted 4-2 to reject a proposed amendment to the Black Hills franchise agreement. The proposal specified that if a May 5 vote about whether to municipalize failed, then the franchise agreement with Black Hills would be extended to 2030. In return, Black Hills agreed to various measures, some of which were already part of its resource planning.

Pueblo's Energy Future, the group formed to support municipalization, saw the vote as a big win, says David Cockrell, one of the group's key figures.

Black Hills, he said, "was going to use this agreement as their campaign platform to try to get everybody to vote against municipalization. We didn't want that. It would have been bad for the city. Even those (on the city council) who to keep Black



Hills recognize that we need to keep negotiating with Black Hills to get better than what they have offered,” he said Tuesday morning.

Pueblo gained national attention several years ago with its adoption of the goal of 100% renewable electricity. Cost of electricity, however, has been at the forefront of this discussion.

While Pueblo’s Energy Future had a room full of supporters, many dressed in tell-tale green, Cockrell said the most compelling testimony came from one of the city council members, Ray Aguilera, who lives in the Bessemer neighborhood, near the steel mill. Aguilera, he reported, talked about how Black Hills has done much for those in his family and neighborhood: pizza, Christmas gifts, donations to civic groups. But, he went on to say, it doesn’t make up for the high rates Black Hills charges, which he said are one-third higher than those in Colorado Springs and twice those in Fort Collins.

(I could not confirm those rates, which is not to say it wasn’t accurate).

“That is the issue,” says Cockrell. “That became crystal clear last night.”

If the May 5 vote now looks inevitable, still to be decided for sure is who would replace Black Hills if voters want to end the relationship. Mayor Nick Gradisar proposes to give the Pueblo Board of Water Works, a quasi-independent arm of the city, oversight of electrical operations. The Pueblo Chieftain explains that the board would be responsible for long-term planning and securing of energy.

One possible provider would be Guzman Energy, a wholesale provider that has contracts to deliver power to Tri-State breakaway co-ops Kit Carson Electric and Delta-Montrose Electric. But Xcel Energy and Tri-State could also conceivably be the providers.

San Isabel Electric, the electrical cooperative that serves areas west of Pueblo, has offered to be a third-party

contractor to handle day-to-day operations of the electric system. But the co-op, [on its website](#), says it could also be a conduit for the power.

And in Boulder

Boulder residents likely will also vote about whether to municipalize, but not until late in 2020 or in 2021, said Mayor Sam Weaver at a forum in Boulder on Saturday. The city is in seeking judicial determination of the proper fee for condemnation of assets of Xcel Energy in Boulder. The city offered \$94 million.

Weaver, speaking at the Mayor’s Community Conversation and Climate and Local Clean Energy, said that Boulder should have direct voice in such things as planning of distribution lines and placement of battery storage.

“There is no method right now, there is no hook. We have the PUC, but who voted for the PUC?” he asked. With a municipal utility, residents can speak directly to elected city councils, he said. “I don’t think we should have to deal with the PUC.”



Sam Weaver

Will Colorado governor stick with PUC appointee

Whether Xcel Energy and Black Hills Energy will face Susan Perkins as PUC commissioner remains an open question. Colorado Gov. Jared Polis in early January announced he was appointing her to the PUC to replace Frances Koncilja, whose 4-year term is ending. Koncilja, who has roots in Pueblo, has a reputation for having sharp verbal elbows, sometimes jostling fellow PUC commissioners and other times sending verbal spears to those testifying. She has also been critical of Black Hills.

But Perkins has also been critical of Black Hills. She's a board member of Pueblo's Energy Future. An energy attorney based in Denver, she has offered pro bono services to the group and has written several articles critical of Black Hills published in the Pueblo Chieftain. For that matter, she also spoke to Clean Energy Action, the Boulder-based group, about municipalization about a decade ago.

Both the Pueblo City Council and the Pueblo County commissioners [publicly called on](#) Polis to reappoint Koncilja. Polis has a reputation of wanting his own people.

Perkins told The Pueblo Chieftain that her work with Pueblos' Energy Future wouldn't prevent her from being impartial in matters dealing with Black Hills, and Polis said the PUC needs commissioners who have expertise in the subject matters they oversee.

The Chieftain, in an editorial, wasn't buying it. "In a state as large as Colorado, it's hard to imagine that the governor couldn't have found someone with a less adversarial relationship with one of the two major electricity companies the PUC regulates."

The Perkins appointment also displayed an intra-dispute within the democratic party.

State Sen. LeRoy Garcia, a Democrat from Pueblo and the president of the Colorado Senate, had asked for an opinion about the ability of Perkins to carry out her duties on the PUC given her affiliation with Pueblo's Energy Future. The agency responded that "a background with certain advocacy groups would likely provide sufficient grounds for a member of the PUC to need to disqualify themselves from hearing matters involving utilities where impartiality could be questioned," an attorney in the agency wrote.



Susan Perkins

In Boulder, at the Mayor's Meeting, Senate Majority Leader Steve Fenberg, D-Boulder, was asked if a hearing on the nomination of Perkins had been scheduled. Senate confirmation is necessary of PUC commissioners. He mentioned that he disagreed with Garcia "strongly" but also that the Senate hasn't introduced the appointment yet and therefore there isn't a scheduled for vote it.

Later, in clarifying the procedure, he explained that if the Senate never votes on the appointment, then Koncilja stays in the seat until somebody is confirmed. If Perkins or another appointee isn't confirmed by the time the legislature convenes in May, he said, the government can technically then make a recess appointment. The appointment would be subject to Senate confirmation in the 2021 session.

Community choice energy bill gets first hearing

More than 20 energy related bills have been introduced this session, said House Speaker KC Becker, D-Boulder, at the Mayor's Meeting.

One of the most closely watched bills would allow community choice energy, also called aggregation. It would allow cities or counties, or groups of them, to choose alternative wholesale electricity suppliers. The existing investor-owned utilities, i.e. Xcel and Black Hills, would still and operate their transmission and distribution systems, i.e. the poles and wires. But, say supporters, community choice energy would introduce competition and community scale choices, likely driving lower rates and cleaner energy.

The proposal would produce a two-part study, including an investigatory docket by the PUC, but would not authorize create community choice energy.

At the outset, this bill has significant support: the Colorado Municipal League, the

cities of Boulder and Pueblo, the Sierra Club and others.

Opposition also surfaced—beyond the expected pushback from Xcel and Black Hills—at its first legislative hearing on Thursday. The sponsor, State Rep. Edie Hooton, D-Boulder, said at the mayor’s meeting last Saturday morning that the hearing went quite well despite the bill being waylaid for a couple of weeks. Still, she conceded her challenges, noting that



Edie Hooton

Democrats have only a one-vote majority in the Senate.

“Just the idea of studying something that would potentially impact the vertically integrated investor-owned utilities model really chills a lot of people, even people

you would think would be our natural allies,” she said, mentioning Conservation Colorado and several others.

She thinks some Republicans might be inclined to support the bill, mentioning a representative from Weld County who she said “doesn’t like monopolies, because he likes competition. People have different reasons for supporting a concept like this.”

Renewable gas bill

State Rep. Chris Hansen, D-Denver, is sponsoring a proposal to create a renewable gas standard, similar to the renewable portfolio standard first adopted by Colorado voters in 2004 and then elevated by legislative action three times since.

The proposal would require natural gas utilities with 200,000 customer accounts or more to have 5% of their gas from renewable supplies by 2025, stepping it up to 10% by 2030 and 15% by 2035.

Renewable natural gas is defined as biogas blended with or substituted for geologic natural gas; hydrogen gas derived

from renewable energy sources; or methane derived from these sources or from coal-bed methane, municipal solid waste landfills, biogas recovery from manure management systems and anaerobic digesters.

For the full text of HB 20-1018, [see the General Assembly website.](#)

A move to divest PERA, another setback vote in 2020, and analysis to explain Colorado’s big shift

In Colorado, 350.org is girding for several fights. It wants legislation that would steer investments by PERA, the retirement benefits program for public schools, away from fossil fuels.

Speaking in Boulder, Micah Parkin, who directs 350.org in Colorado, said Colorado Rising, the affiliated group, plans another proposal to take to voters for greater setbacks from drilling well pads. In 2018, State voters rejected the 2,500-foot setback by a margin of 57-43. Opponents spent at least \$30 million to fight it.

Meanwhile, Tisha Schuller, who ran the Colorado Oil and Gas Association for several years, has formed an energy consulting company called Adamantine Energy. In a blog post last week, she observed that Colorado has gone from becoming a “proud oil and gas producing state to a hostile one.”

She promises a “data-driven analysis of the demographics behind the political shift:”

- 1) The base of the Democratic Party has shifted.
- 2) Colorado’s population has become younger and more liberal.
- 3) The industry alienated stakeholders as it made the legal and economic case of oil and gas development.
- 4) The rise of climate change. “Ten years ago I could not foresee how all-encompassing concern about climate change would become.”

See more of her blog, [“Colorado Carbon Copy,”](#) at the Adamantine Energy website.

A goal for coal: zip by 2030 in CO & NM for Tri-State G&T*

By Allen Best

Duane Highley arrived in Colorado last year with a mission: Transform one of the nation's heaviest coal-based wholesale electricity providers to something different, cleaner and greener.

As the new chief executive of Tri-State Generation and Transmission, Highley began meeting with legislators and other state officials, whose general reaction was of skepticism and disbelief, he recalled.

"Just watch us," he says he answered. "We will deliver."

Last week, Highley and Tri-State took a step toward that goal by announcing plans for generation. The power wholesaler will achieve 50% renewable generation by 2024 for its Colorado members, up from 32% in 2018. Unlike its existing renewables, much of which comes from federal dams, Tri-State plans six new solar farms and two more wind farms.

With continued retirement of coal plants, Tri-State expects to achieve 70% carbon-free electricity for its Colorado customers by 2030. Those customers represent two-thirds of the wholesaler's demand across four states.

This was originally published by [Energy News Network](#) on Jan. 14.

"The prices of renewables have fallen dramatically in the last 10 years," Highley said in an interview with the Energy News Network. Solar and wind have dropped "significantly below the operating costs of any other project. It gives us the headroom to make these changes," he said, adding that he expects downward pressure on rates for member cooperatives.

The politics and the economics of clean energy have aligned. "It helps us accelerate the ride off coal," Highley said. The temptation, he added, was not to wait, but rather to announce the shift sooner, before details had been lined up.

Colorado utilities that together constitute 85% of the state's electrical sales have now adopted deep decarbonization goals for 2030. The lesson, said Will Toor, director of the state's energy office, is that articulating statewide goals and targets for carbon reduction, then creating the regulatory mechanism for moving forward, working with the utilities given their business models, creates enormous opportunities. In this case, he said, it will deliver benefits of clean energy to rural Colorado.

"You could easily have imagined a scenario where utilities and the state were locked in political, legislative and regulatory battles," Toor said. "But what I think we have seen is a pathway to move forward that will help us to achieve decarbonization goals by working together. That same model works in a lot of states."

Highley's work is far from over. To achieve the pivot from coal generation to renewables, he said, Tri-State will need to build transmission, and build it fast in order to hit its 2030 goals. The current process can take 10 to 15 years. This suggests a need to tinker with a Colorado law that delegates permitting authority to local governments for such things as power lines.

* Except what is imported from Wyoming and Arizona, which have no climate change goals



Too, if the scorn of environmental advocates has diminished in the last few weeks, wariness remains.

One unresolved issue is who's in charge. The state made it clear that it believes it has authority to regulate Tri-State, not very differently than the state's two investor-owned utilities, Xcel and Black Hills Energy. But Tri-State filed for rate-setting review by the Federal Energy Regulatory Commission, arguing that it only makes sense for efficiency of wholesale supplier that operates in four states. Others in Colorado, including [at least two of the member cooperatives](#), see this move under Highley's tenure as a dodge of state authority.

Highley arrived in Colorado last April with 38 years' experience with electrical cooperatives in Missouri, Iowa, Oklahoma and, most recently, Arkansas. He took the job at Tri-State believing that directors representing the 43 member cooperatives in four states wanted a pivot but, he says now, perhaps not fully understanding the complexities.

For example, when directors last June authorized Highley to use a stakeholder

About this photo: Moments after this photograph was taken in May 2019, a guard at the entrance emerged and began shouting that the photographer was trespassing on private property. It was along a county road. Tensions, obviously, were rising. A guard also shoed off this photographer at the Escalante Station in New Mexico last summer, but that time this photograph really was on private property.

process to create the [Responsible Energy Plan](#), there was with little or no dissent. Directors from member cooperatives in Wyoming and Nebraska, however, made it clear they weren't interested in subsidizing the climate goals of Colorado and New Mexico. The economics of renewables persuasively made it clear that they will not.

Already, Tri-State had received [an offer from Guzman Energy](#) to buy the plants, shut them down, and replace the lost generation. Highley said Tri-State had determined it could accomplish the same thing for less money.

Tri-State in [early January announced](#) it would close its one coal plant in New Mexico, the Escalante Generating Station,

later this year. By 2030, it will close two generating units at Craig, in northwestern Colorado, in addition to a third unit already scheduled to close by the end of 2025. With that, it will be done burning coal within the two states.

It will continue participation in two coal-burning plants in which it has minority ownership, Laramie River Station in Wyoming and Springerville in Arizona. Importantly, Highley told reporters recently, those states have not adopted goals for greenhouse gas reductions, unlike Colorado and New Mexico.

In place of the lost coal generation, Tri-State will add two new wind projects by 2020 and six solar projects by 2024. One of the solar farms will be on the site of a mine that currently supplies coal for the generating units at Craig.

Still to be resolved is how much electrical generation member co-ops will be able to deliver on their own. Some want more flexibility. A committee of members is scheduled to deliver its report on April 1.



Colorado Gov. Jared Polis credits Tri-State with a 21st century move while CEO Duane Highley, at right, looks on.

The current contract allows members a maximum of 5% self-generation. One of Tri-State's long-standing members, Kit Carson Electrical Cooperative of Taos, New Mexico, left in 2016 and has been rapidly building solar farms with the aid of new wholesale supplier Guzman Energy. Colorado's Delta-Montrose Electric will similarly leave Tri-State on May 1 and join with Guzman with the intent of developing local generation.

One of the new 100-megawatt solar farms is to be in southwestern Colorado, near Durango, the headquarters for La Plata Electric. It's one of the largest member cooperatives and one of two that have asked for buy-out numbers from Tri-State. For La Plata, the instructive model is Kit Carson. Moments after the announcement, La Plata issued a [press release](#) saying that while the co-op supports the decarbonization plan, it wants to be a partner in working with local renewable developers.

United Power, the largest co-op member, responsible for 17% of Tri-state's load, gave no indication last week whether Tri-State's latest moves relieved its dissatisfaction.

Before taking the Tri-State job, Highley says, he consulted with several people he was told were the brightest and best minds in Colorado involved in the energy transition. One of them was former Gov. Bill Ritter.

Ritter, elected in 2004, the same year that state voters approved the country's first voter-initiated renewable energy mandate, now operates the Center for the New Energy Economy, which facilitates stakeholder discussions. Ritter, he says, offered the aid of his group in convening environmental advocacy groups and others to create a plan for the pivot. Discussions began last July.

Highley said he met twice with current Colorado Gov. Jared Polis, and also had informal conversations at meet-and-greets. The governor won election in 2018 on a

platform of achieving 100% non-carbon by 2040.

“They are figuring out how to make Tri-State relevant in the 21st century,” Polis said during the announcement last week at the Capitol. He described Tri-State’s transition plan as one that avoids chaos. “In general, it’s good to avoid chaos,” he said. Tri-State, he suggested, will be “significantly expanding the locally allowed production” of electricity.

With its coal plant closings, Tri-State will reduce carbon emissions from its plants in Colorado 90% by 2030. It will retain several natural gas burning units. Some Colorado consumers will also continue to be supplied by electricity imported from other states, principally Wyoming’s Laramie River Station. This allows Tri-State to predict it will be reducing emissions from Colorado electric sales 70% by 2030.

That improves upon the economy-wide goals for greenhouse gas emissions adopted by Colorado legislators of 50% by 2030. But at this point, cleaning up electrical generation is easier than in transportation, building and other sectors. Tri-State has started working in those sectors but in a very small way.

Tri-State’s pivot toward renewable generation contrasts with the bigger, better known Xcel Energy. The latter, an

investor-owned utility, one of the nation’s largest, announced in 2017 that it wanted to close two of its aging coal plants, Comanche 1 and 2, replacing that lost generation primarily with renewables and gas. The “insanely cheap” bids surprised everybody.

Late that same year, Xcel announced a goal for its eight-state service territory of achieving 80% reduction by 2030 as compared to 2004 levels, a level it says it can achieve using existing technology. Tri-State has two goals for 2030: 90% reduction from units it owns and operates in Colorado but 70% reduction in emissions for its Colorado electric sales consumers.

The distinction?

Tri-State will continue to import coal-produced electricity from Wyoming, where it has a minority ownership in the Laramie River Station at Wheatland. The plant, according to a 2018 analysis by the Rocky Mountain Institute, was the only coal plant that Tri-State had a financial interest in that was cheaper than renewables, owing to a very-low priced and long-term contract for coal from the mammoth mines in the nearby Powder River Basin. It could also get electricity from the coal unit in Arizona.

Xcel and Tri-State’s transitions overlap in other areas. Xcel is adding 383 megawatts of existing natural gas generation to its resource mix but also 275 megawatts of



storage. Tri-State has no plans for either. Overall, and not just Colorado, 19% of its generating capacity is from natural gas but for 2018 represented just 4% of sales.

Highley said Tri-State has no plans to invest in natural gas generation, although he didn't reject that as a possibility in the future. Tri-State, he said, still needs fossil generation to ensure reliability during times of low light and, as has happened several times, icing up of wind turbines. "You can't buy a battery large enough to take you through a bomb cyclone event."

Still, battery technology and prices could improve. "We are positive on the future of batteries," he said. "We have seen battery prices fall 20% every year for the last seven years. We know we are not at the end of the curve. We think it is good to wait for a few years, and under our Responsible Energy Plan we will be at 50% by 2024 without adding batteries." By 2030, he added, batteries will be half the cost of what they are now.

Toor, from the state agency, applauded Tri-State's decision for no more investment in gas generation. "We do think it's important to minimize making new investments in fossil generation that will become stranded assets in the future," he said. "We think [Tri-State's plan] is very consistent with the governor's 2050 clean energy goals."

Early in the 21st century, both Xcel and Tri-State had visions of new coal plants. Xcel, starting earlier and faced with greater growth in energy demand than Tri-State, succeeded, putting on line Comanche 3 in 2010.

Starting with its plans in about 2005, Tri-State ran into turbulence in an unexpected place: the state government of Kansas. In

2007, the state denied a permit on novel and perhaps then unique grounds: the greenhouse gases that would be emitted from the proposed plant near Holcomb. Tri-State finally won that permit in 2017 without moving a bulldozer's worth of soil. Highley said that Tri-State will not seek renewal of that air-quality permit. In



United Power began use of a Tesla battery packs in December 2018 along I-25 north of Denver, but did so in a conflict with Tri-State Generation and Transmission.

a [September 2019 SEC filing](#) it had listed \$93.5 million of deferred impairment loss for the Holcomb plant.

Tri-State will also leave money on the table as it begins tumbling the smokestacks. In New Mexico, it will take a one-time impairment loss of \$282 million but also will incur \$26 million in decommissioning and related expenses through 2022, according to an [SEC filing on Jan. 8](#). In Colorado, at Craig, the two new plants together have a net book value of \$447 million. As well, Tri-State expects decommissioning, employee and other expenses to cost \$40 million through 2032.

Highley insists that these costs can be swallowed while rates flatten and may even decline. That, he says, is the green energy dividend.

What the two biggest dissidents had to say

After this story was posted last week, I heard back from a few readers who are skeptical about Tri-State’s big pivot. The skepticism was centered around Tri-State’s ability to shut down coal plants, pay for their cleanup, swivel to renewables—and bring down rates.

Tri-State made two announcements in two weeks, and I was in on both press conferences. I asked the question several times, to be sure I was hearing correctly. Duane Highley was consistent. There would, he said, be downward pressure on rates.

There are three overlapping issues with Tri-State. One is who’s in charge. A second is about rates. And the third is about decarbonization.

Both before and after the first announcement on Jan. 10, I talked with chief executives of the two largest and most dissident co-ops (aside from Delta-Montrose, which will be leaving May 1 under a previous agreement).

This is the choice passage from the story I posted that day:

“From our perspective, we want Tri-State to clean up their carbon footprint, but we would like to be part of this,” said Jessica Matlock, the chief executive of Durango-based La Plata Electric, one of two co-ops that have formally asked the price of breaking their current all-requirements contracts.

“We haven’t been involved in any of the discussions, the formulation of strategies. We would actually like to develop a large amount of renewable energy in the Four Corners and supply that to Tri-State. We don’t think they should just develop large-scale resources on the Eastern Slope. They should diversify their resources and look to the co-ops to be partners.”

While the Four Corners has what Matlock describes as “phenomenal” solar potential, land in the United Power service territory north and east of Denver has become too valuable for 200-megawatts solar farms, says John Parker, chief executive of the 93,000-member



cooperative. He's more interested in seeing whether Tri-State can execute its energy pivot without raising rates.

Rates of Tri-State going forward matter entirely to United, says Parker, whose cooperative now is responsible for 19% of Tri-State's total electrical demand. He said United charges 20% more for residential electricity than does Xcel Energy, a neighboring and sometimes competing utility. United has somewhat higher costs for distribution of electricity to customers owing to the more rural nature of its service territory But Tri-State's wholesale cost to United provides the larger explanation. "Tri-State is 75% of our cost of doing business," says Parker.

For the full story, go to [Curtain descends on Tri-State plants](#)

What's next in the Tri-State story?

A key component of this story going forward will be the report of a subcommittee of members about how to give dissatisfied members the flexibility they want while allowing Tri-State to retain steadiness in its finances. That will be on April 1.

A bit about me and this first Big Pivots

This is the first, trial issue of Big Pivots in Energy and Water.

I've studied energy diligently for the last or 15 years, but also water, in both cases with Colorado as home base. It's time to intensify my focus onto those things that most strongly drive my passions. We have to be in a Big Pivot in energy, especially, but also water, and hence the name.

I'm not asking for money, at least not now. I am asking for words from you. What do you think? Do you want to be on this mailing list while I get my legs under me? If so, send me an e-mail:

allen.best@comcast.net

And pass this along to somebody you think would want to get this by e-mail.

Not least, I do need collaborators and, ultimately, deeper pockets. That's how almost all good journalism occurs these days.