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Aspen takes step toward divesting from fossil fuels

by Allen Best

In August, when the $3.1 million in Berkshire Hathaway bonds that the City of Aspen holds mature, the city will not be repurchasing.

It's not for lack of performance. The funds have done tolerably well. Rather, the Berkshire Hathaway bonds are tainted by a bad environmental record.

The city wants its $131 million in investments to reflect Aspen's environmental values. That most prominently means walking away from carbon.

"The City of Aspen is taking the first steps to putting our money where our mouth is," says Mayor Torre (he goes by one name). "I anticipate a two-year process to fully divest from the investments that don't reflect our community values. Our intention is to be fiscally responsible as we get policy in place to guide our banking and investments to meet our environmental, social, and governance expectations."

In this divestment from fossil fuels, Aspen joins Denver, Los Angeles, and New Orleans, all of whom have washed their hands of carbon investments, but also Boulder and Boulder County.

The biggest divestment of all was the New York State pension fund with its $226 billion in assets. That's enough clout to accelerate the transition to cleaner energy sources, the New York Times noted in a December 2020 report. In 2019 the fund owned $12 billion in fossil fuel companies.

Bill McKibben's call for divestment slowly expanding in Colorado

Representatives of the Roaring Fork chapter of 350 Colorado say they have begun outreach efforts to Carbondale and Glenwood Springs governments to persuade them to divest. Other 350 Colorado members say chapters will undertake similar efforts in Fort Collins and Colorado Springs.

Divestment campaigns and the creation of 350.org chapters were initiated by an article that climate activist Bill McKibben wrote for Rolling Stone in 2012. The article, "Global Warming's Terrifying New Math," laid out the argument that fossil fuels already documented and much of it "owned" but still in the ground could not be possibly burned if the climate of the Earth is

to remain habitable for most of today's population of humans.

"We have five times as much oil and coal and gas on the books as climate scientists think is safe to burn," McKibben wrote. "We'd have to keep 80 percent of those reserves locked away underground to avoid that fate."

McKibben followed up with a tour of the United States in which he made the case why the global concentration of carbon dioxide needed to be lowered to 350 parts per million. That spring they had surpassed 400 ppm for the first time. (They're now at 417 ppm).

In Colorado, McKibben spoke at the Glenn Miller Ballroom at the University of Colorado-Boulder to a standing-room-only crowd of about 1,100 people.

Boulder was among the first municipalities in the country to divest its investments from fossil fuels. But Boulder has found that it's hard to entirely remove the carbon from its money, as the Boulder Daily Camera explained in 2017. Even now it continues to bank with JP Morgan Chase, a financier of controversial Bakken and Dakota Access pipeline projects.

One alternative—but not in Colorado—is for municipalities and counties to conduct their banking through credit unions and public banks. Colorado requires banks be FDIC insured, and public banks and credit unions are not. Legislation is expected to be introduced this legislative session that would end this prohibition.

Aspen has no formal policy governing its investments in carbon-based capitalism. The city bought ExxonMobil stock in September 2017 but liquidated the stock, then worth $2 million, in March 2919. This said Peter Strecker, the city's finance director, in a memorandum to the city council before a Feb. 1 meeting, was the result of a staff decision to align investments with the community's environmental values.

But what about those who finance fossil fuel companies?

As with Boulder, Aspen is wrestling with this issue. City staff wants direction from the elected officials. It's not part of the official matrix of risk, return and liquidity that guides the city's current investment policies.

Eighty percent of the city's investments go to the public sector, including municipal bonds. That sector yields generally lower but safe returns as compared to the private sector. The private or corporate sector generally delivers higher returns, if not necessarily so of late, Strecker's memo to the council said.

The city's corporate holdings—Microsoft, US Bank, and Apple Inc., for example—do not directly involve fossil fuels. The possible exception is the city's $3.4 million investment in Toyota Motor Credit Corp.

The Roaring Fork Valley chapter of 350.org, the activist group created in the wake of McKibben's tour, has been pushing Aspen to divest. The group's Will Hodges, at the Feb. 1 meeting urged the city council to "adopt a policy against investing in the financing, production, and delivery of fossil-fuel energy."

The public conversation began in early November. The upshot of the Feb. 1 meeting was agreement that staff will work up a scoring guide to govern investments.

"I suspect we will be learning more and refining this policy going forward," says Torre. "We are looking at other Colorado communities that are divested and divesting to learn how to best evaluate investment opportunity and strategy."

Boulder County has divested from fossil fuels in its investments, but Weld County—well, can you possibly imagine how the idea would go over in Greeley?

A test case for developing the criteria used in this potential policy is the $2.9 million in bonds that Aspen has invested in Wells Fargo. The bonds mature in October 2022.

Insight Investment, the city's financial advisor, has a team of analysts who conduct research on environmental, social, and governance issues for publicly traded firms. Based on this consultant's research, Wells Fargo has a sweet smell, despite that little problem of some slithery come-hither hucksterism a few years ago. That public relations shiner seems to have disappeared in this rating.

Doubts remain among city council members. Hodges, the 350 Roaring Fork Chapter representative, told the Aspen council at its Feb. 1 meeting that Wells Fargo has financed $198 million in coal, oil, and gas projects since 2016.

"Using Wells Fargo as an example will be helpful as we look at various rating programs and setting our thresholds for investment," says Torre. "I have already had an exchange with them about our desire to be smart, conscientious, fiscally responsible investors. Wells Fargo is working on their ESG (environmental, social and corporate governance) scoring and examining their policies."

Denver Mayor Michael Hancock announced in April 2019 that the city had sold $50 million in corporate bonds issued by ExxonMobil and Chevron.

350 Colorado and others wanted Denver to also divest of the city's holdings in JP Morgan Chase and Wells Fargo, Westword reported at the time.

Twelve cities around the globe, including 4 in the United States, announced divestment in 2020.

Perhaps most surprising was New Orleans. After all, Louisiana is an oil state and, even more, natural gas. About 70% of the state's electricity is generated using natural gas. In Triple Pundit, Kate Zerrenner

pointed out that New Orleans is a different city after the devastation of Hurricane Katrina, one more acutely aware of its vulnerability to climate change. A 2017 plan called for the city to reduce carbon emissions 50% by 2030. And in February 2020, the governor of Louisiana announced a plan to reach net-zero emissions by 2050. This was part of a coastal restoration and flood preservation plan.

In New York, the divestment announced was the result of an agreement by the state controller, Thomas DiNapoli, and state legislators, who were poised to pass legislation requiring him to sell fossil-fuel stocks. The New York Times in December explained that legislators wanted quicker action, and he persuaded them a broader, more nuanced approach would accomplish more. In the next 5 years, the pension fund will drop many of its fossil fuel stocks and sell its share in other companies that contribute to global warming in 2040.

The litmus test for the New York fund will be the ability of the companies to show "future ability to provide investment returns in light of the global consensus on climate change."

The decision was a setback for oil and gas companies and industry groups. The Times said a slide in the value of their stocks—ExxonMobil wrote down $20 billion in assets in November—undermined their main argument against divestment: that fund managers' first responsibility to retirees and other investors is to maximize profits.

DiNapoli, New York's fund manager, had long advocated for engagement with companies over divestment.

Alice Hill, a senior fellow at the Council on Foreign Relationships, said that pension funds have been conservative investors, reluctant to make decisions that could be seen as political. "For a major investor to say we're getting out of this business sends a very strong market signal that climate change is a financial risk," she said.

Colorado 350 and allied groups have been trying to get the Colorado Public Employees' Retirement Association to divest its $45 billion in holdings of fossil fuels. PERA provides retirement and other benefits to more than 650,000 current and former teachers, state troopers, snowplow drivers, corrections officers, and other public employees.

A bill was introduced in the 2019 legislative session by State Rep. Emily Sirota, a Democrat from Denver, that would have ordered PERA to conduct a study. It didn't get out of committee. The PERA Board of Trustees pre-empted the discussion with a lengthy statement that urged legislators "thoughtfully consider such proposals with caution and fiduciary care" and described divestment as a slippery slope. Their statement cited several arguments:

• Divestment, by its nature, adversely affects diversification by limiting the investment universe.

• Divestment comes with significant associated costs to search for and certify those companies that have the characteristics of affiliation as targeted by a divestment effort, plus the transaction fees.

• The money held by PERA for retirees is not actually public money, but the money of the retirees.

• PERA's funds will constitute a "very small fraction of the company's total global operations" and hence there's no assurance the impact of that pressure will be felt as intended, and there might well be unintended consequences.

A bill was planned last year to propose prodding PERA into study of divestment but got bumped because of the covid-shortened session, says Deborah McNamara, the campaign director for 350 Colorado. Another bill will be introduced this year, again by Rep. Sirota, but the exact proposal is still being worked out, she says.

Fossil Free PERA in 2020 released a study that found that PERA had already lost $1.77 billion because of a decline in the value of fossil fuel companies in the last decade.

Whether in Aspen or at PERA headquarters a few steps from the Colorado Capitol in Denver, the broad, overarching question is what ultimately is the value of divestment?

The setting and circumstances were different last summer when a member of the Air Quality Control Commission wondered out loud whether the best way to make technology shifts is to offer superior technology.

Julia Williams, the community and development director for 350 Colorado, had thought about this before. "Market-based strategies may get us there eventually," she answered, "but they will not get us there nearly as fast as we need to avoid climate catastrophe."

Jeff Ackermann joins Bill Ritter's Center for the New Energy Economy

Jeff Ackermann joining former Colorado Gov. Bill Ritter's Center for the New Energy Economy as a senior policy advisor. Ackermann had been chairman of the Colorado Public Utilities Commission for four years until replaced in January by Eric Blank, an appointee of Colorado Gov. Jared Polis.

"This is a perfect time to have a former regulator of Jeff's caliber join our staff," said Ritter. "Jeff's deep subject matter expertise will prove crucial in our efforts to help Western States and Western utilities improve regional energy system planning and expand renewable energy and storage resources."

Jeff Ackermann

Ackermann will be involved in the Western Interconnect Regional Electricity Dialogue, an ongoing conversation with Western utilities and energy experts to address regional transmission planning, resource adequacy, and state energy and climate policies.

As a PUC commissioner, Ackermann had been co-chair of the National Task Force on Comprehensive Electricity Planning during the last two years. The task force was charged with focusing on how states can better integrate resource, transmission, and distribution system planning.

The task force website points out that utilities nationally spend more than $130 billion on capital expenditures. With growing installation by customers of distributed generation, "electricity planning needs to account for the quantity, location, capabilities, and load shapes of resources added to the distribution system and the bulk power system."

5 benefits of closing the Drake coal plant in 2022

By the end of 2022 and quite likely by summer, 2022, the 200-megawatt coal-fired Martin Drake Power Plant near downtown Colorado Springs will cease operations, to be replaced by six 34-megawatt natural gas units. The gains:

The new units can fire up in eight minutes, compared to 12 to 18 hours for the coal plant, said Aram Benyamin, chief executive of Colorado Springs Utilities. That makes them more useful in backing up new renewable generation. “They will run when we need them, and don’t when we don’t need them,” said Benyamin.

Second, natural gas plants, by most measuring criteria, produce half the carbon dioxide emissions of coal combustion.

Third, the gas units being manufactured by General Electric, the first for this particular technology, will be portable. After new transmission is built by the end of 2024, they can be moved to military bases or other locations around Colorado Springs.

Fourth, the fuel will be cheaper. Despite the $100 million cost of conversion, Benyamin said switching from coal to natural gas will save Colorado Springs so much money it can use the money to finance the transmission rebuild in the city without raising rates.

Fifth, the coal plant required water; not so these gas plants.

Colorado Springs is the third largest electrical utility in Colorado, responsible in 2018 for 8.3% of all electrical sales, behind Xcel Energy and Tri-State Generation and Transmission.

Like nearly all other of the state’s electrical utilities, Colorado Springs has committed to reducing carbon dioxide emissions from its power generation 80% by 2030 as compared to 2005 levels. “That is the minimum,” said Benyamin.

Colorado Springs also operates the Ray Nixon plant about 20 miles south of the city. It plans to close it by 2030.

After the coal plant is decommissioned, the 79-acre site will be repurposed following a public process. It lies near the center of Colorado Springs and is close to museums and other facilities.

What decisions by the big automakers mean for Colorado's EV goals

Were there virtual high-5s among Colorado's architects of decarbonization?

Surely there were in the wake of the announcement by General Motors that it was shifting its production and sales from the internal combustion engine to electric vehicles in the next 15 years.

Ford Motors followed up late last week that it was doubling its investment in EVs by 2025. "We're not going to cede the future to anyone," Jim Farley, the chief executive of Ford, told CNBC.

This should make it far easier for Colorado to achieve its goal of 42% penetration of the automotive fleet by 2030. That goal, announced soon after Gov. Jared Polis took office in 2019, calls for 940,000 EVs by 2030.

Asked for comment after GM's announcement, Will Toor, executive director of the Colorado Energy Office, agreed that it is "very good news for Colorado's EV goals, and we look forward to working with GM and other automakers to transition to a fully electric fleet." GM was, he noted, the first major automaker, beyond the EV-only companies like Tesla and Rivian, to announce EV plans that match the scale of changes needed to confront the climate crisis.

The GM announcement was part of a broader somersault by the automotive sector since the November election of President Joe Biden.

The short story is that Trump lost, of course, and California won—and so did Colorado.

Some history: California by virtue of a ruling in the 1990s had the authority to set stricter emissions standards for vehicles than those imposed on automakers by the EPA.

The Obama administration adopted pollution rules that were modeled on those adopted by California. The California and Obama rules required auto companies to make and sell vehicles that reached an average fuel economy of about 54.5 miles per gallon by 2025. It was, says the New York Times, the most salient effort by the Obama administration to reduce emissions of greenhouse gases.

Arriving in the White House, Donald Trump set out to roll back those standards, the centerpiece of his deregulatory agenda. The Trump administration last year rolled the standard back to 40 miles per gallon by 2026.

Meanwhile, Colorado in 2019 joined the coalition of California and 12 other states requiring zero-emission vehicle regulations.

Within the automotive industry, some automakers—including General Motors and Toyota—sided with the Trump administration rollback. They filed suit against California. But five automakers—Ford, Honda, BMW, Volkswagen, and Volvo, together with 30% of the market in California—had agreed last August to abide by California's standards. The agreement required them to increase their average fuel economy from about 38 mpg to about 51 mph by 2026.

Last week, Toyota, Fiat Chrysler, and others who had banded together under the name of Coalition for Sustainable Automotive Regulation dropped the lawsuit.

This comes after the Alliance for Automotive Innovation, which includes 99% of automakers, offered principles for a national program of clean car standards and a long-term focus on electric vehicles.

The decision to drop the lawsuit was described by Travis Madsen, the transportation program director at the Southwest Energy Efficiency Project, as important for Colorado as the clean-car

standards are a “central part of Colorado’s strategy to accelerate vehicle electrification and deliver on our climate goals, and it will be important to have all automakers moving in the same direction.”

Polis, in a statement, had much the same to say.

“We are also encouraged to see the auto industry come to the table with a willingness to support stronger year over year improvements to fuel economy and greenhouse gas emissions than the rules adopted by the previous administration,” he said.

“Moving forward, we are focused on achieving large scale electrification, which is what is required to meet the climate crisis we face. With most of the real-world manufacturing decisions for the next few years already made, we encourage all parties to put the fighting of the past behind us and chart a new path to successfully electrify the light-duty fleet as soon as possible."

Disruption poised to occur from lower-cost lithium-ion batteries

Disruption is coming in energy sectors, reports the Wall Street Journal, the result of rapidly falling prices of lithium-ion batteries.

In the story, “The Battery is Ready to Power the World,” the newspaper also explains that the ICE age is coming to an end. Confused? We’ll get to that.

First, the raw numbers.

In January 2010, a consultant in Boston estimated battery costs at between $1,000 and $1,200 per kilowatt-hour.

Now, they’re about $125 per kilowatt-hour, the result of increases in manufacturing capacities that lowered costs and also tweaks to chemistry and design.

More is coming. One mechanical engineering professor at Carnegie Mellon University expects $80 per kilowatt-hour in two or three years.

And companies are working on new configurations-such as solid-state batteries, which don’t transfer ions through liquid—that could significantly enhance the power and further lower battery prices.

“The battery has reached a tipping point,” reports the Journal’s Russell Gold and Ben Foldy. “It is poised to transform the way the world uses power.”

They speak to the change in the automotive and power sectors.

One change—already starting to show up in Colorado, such as at trial experiments by Holy Cross Energy and Xcel Energy—is in homes. That could threaten the natural gas peaker-plants. They are called that because they can be fired up to generate electricity on short order to meet peak demands. Batteries could make them unnecessary or deliver the same service at lower cost. One renewable generation developer asserts that batteries could render uneconomic 100 gigawatts of capacity in existing gas- and coal-fired power plants.

As for cars, EV battery packs and motors currently cost $4,000 more than comparably-sized vehicles using internal-combustion engines. That cost differential will disappear by mid-decade, according to investment bank USB Group AG.

There are problems. No one country had more than 20% of the world’s total production of oil, while China currently controls 60% of the production of lithium-ion batteries. And charging infrastructure is still not adequate (and some say the batteries themselves remain unsuitable for cold-weather climates like Colorado).

But innovations have just begun on battery-powered EVs, which caused an auto-industry consultant, Sandy Munro, to deliver

this line: “Right now, we’re basically scratching the surface,” he told the Journal.

“The ICE age is coming to an end,” he said, using the acronym for internal-combustion engine.

Durango to have fast EV charger by this summer

A high-speed electric vehicle charger, capable of topping out most EVS to full within 20 minutes, will be available in Durango’s transit center by early summer.

The city government chipped in $11,000 toward the $306,600 cost. The majority of the cost was covered by the Colorado Energy Office—which is using proceeds from the Volkswagen settlements several years ago—along with help from La Plata Electric Association and ChargePoint, the company that won the contract in Colorado to develop a high-speed charging infrastructure.

The fast-charger will be next to two Level 2 chargers, which take 4 hours to give an EV a full charge.

As of Jan. 1, Colorado had nearly 33,000 EVs registered. It aims for 940,000 by 2030.

North of Durango 107 miles, a fast-charging station has already been erected as part of the state program. Delta-Montrose Electric, one of the partners, had become involved believing that it would initially be useful for the tourism economy. The amount of use, even in mid-winter, has surprised Delta-Montrose.

Climate liability suit against 2 fossil fuel companies to stay in Boulder County

A small twist in the long wrangle between three Colorado jurisdictions and two fossil fuel companies came with a ruling by Boulder District Court Judge Judith LaBuda.

LaBuda on Jan 25, denied the request by Suncor Energy to move the lawsuit filed by Boulder and Boulder County to Denver.

San Miguel County’s lawsuit against Exxon stays in Boulder County—unless, possibly, ExxonMobil wants it moved.

More confusingly, the judge agreed with Suncor that the same claims by San Miguel County need to be moved to another jurisdiction. That said, without ExxonMobil being a party to Suncor’s filing, San Miguel’s case stays in Boulder.

Why does it matter whether the case gets heard in Boulder or Denver, as Suncor prefers? That’s not clear. Residents in both jurisdictions walk in veritable lock-step in their political beliefs.

Suncor operates Colorado’s largest oil refinery, located along Sand Creek northeast of downtown Denver. ExxonMobil is also a defendant.

The April 2018 lawsuit filed by EarthRights International, Niskanen Center and others says that Suncor and ExxonMobil have “known about the consequence of fossil fuel use for more than 50 years, yet they continued to promote and sell their products, while deceiving the public and policymakers about the dangers,” according to a press release issued at the time.

They seek damages to help offset the impacts of climate change “caused by the defendants’ tortious conduct, that have occurred and will occur within their geographic boundaries.”

They estimate $100 million in damages over the next three decades to deal with impacts of climate change caused by products like those made, promoted, and sold by Suncor and Exxon.

Lawsuits by the three Colorado jurisdictions align with those filed elsewhere, primarily California and New York. The difference, obviously, is that it's in the interior. See 2018 story, "Climate hypocrisy unbridled or something else?"

Colorado well represented among finalists for Lever for Change $10 million award

Colorado-based organizations are well represented among the five finalists for an inaugural $10 million award launched last year to reduce greenhouse gas emissions in buildings, industry, and/or transportation sectors by 2030.

The Lever for Change, using money from an anonymous donor, points out that these sectors account for more than half of U.S. greenhouse gas emissions.

First Statewide Virtual Power Plant: Equitable Transition in Clean Energy

The **National Renewable Energy Laboratory**, of Golden, and Boulder-based **Resource Media** are part of a proposal to push the pedal to the floor on an inclusive financing tool that enables home energy upgrades to reach mass scale by assuring all households can participate regardless of their income, credit score, or renter status. "It will create the first demonstration for the nation of full statewide residential sector decarbonization and creation of a statewide virtual power plant—all through equitable energy transition," the team says. The team also includes **Solar United Neighbors** and **Liberty Homes**, both of whom have a presence in Colorado.

Scale Zero: Healthy, Zero-Emission, Affordable Housing for All

Boulder-based **Rocky Mountain Institute** has a proposal focused on accelerating the pace of building retrofits in 5 states through a program called Scale Zero that seeks to build coalitions of supporters to influence regulatory, legislative, and utility programs that drive market-demand for zero-emission buildings.

"Our implementation efforts will focus on catalyzing thousands of affordable, multifamily housing retrofits," RMI's summary says. "By prioritizing historically marginalized communities, we ensure that they benefit first from the health and economic advantages of zero-emission buildings. Building on our existing work and deep expertise, we will push the market towards a "tipping point" that leads to catalytic national transformation."

Building with Biomass: Using Buildings to Sequester Carbon at Gigaton-Scale

The **University of Colorado** is part of a team led by the Carbon Leadership Forum at the University of Washington that proposes to use biogenic building materials and to reduce carbon emissions in all other buildings in order to make buildings into carbon sinks.

Two others among the 68 applications made the final cut. Applications were based on 4 criteria: whether they were impactful, feasible, scalable, and durable.

The two other finalists: One would accelerating transportation electrification in the Southeast, and the second aim to drive investments in technology, markets, and policy to double industrial renewable thermal energy by 2030.

"While the world is rolling out a rapid response to the coronavirus pandemic, there is no vaccine for climate change," said Cecilia Conrad, CEO of Lever for Change.

Lever for Change is modeled on the MacArthur Foundation's $100 million competition called 100&Change program. A companion effort is the Bold Solutions Network, which seeks to match donors with nonprofits and social enterprises.

A market launches and a sales pitch to look eastward

by Allen Best

At the stroke of midnight on Feb. 1, a small, even tiny, but still important step was taken along the path toward deep decarbonization in Colorado. The Southwest Power Pool launched Western energy imbalance services, or WEIS, a market-based system that allows electrical utilities to share electricity, allowing deeper penetration of renewables and saving money.

If of immediate benefit to a significant minority of electrical customers in Colorado, the new imbalance market is best understood as the prelude to an even more powerful and productive regional sharing of electricity. Utility managers universally agree that this regional sharing of electricity across far broader areas will be crucial to even deeper decarbonization of electricity.

The question remains whether Colorado and other utilities in the Rocky Mountains will look east or west in this to-be-decided regional alignment. Think Arkansas or California. More on that duality later.

Western utilities have been, to a great extent, islands unto themselves. That has started to diminish, but more so on the West Coast and on the Great Plains than in the Rocky Mountain states. The arrival of low-cost renewables in the last 15 years and government mandates to decarbonize electricity several years ago began driving conversations about the need for an energy imbalance market, or EIM, in Colorado. But the far greater prize would be creation of a RTO, or regional transmission organization.

Why this matters in Colorado's path toward decarbonization

Hang on. The world of electricity is an alphabet soup. But don't let the acronyms get in the way of understanding what is at stake here. Duane Highley, the chief executive of Tri-State, explained it well during a Feb. 3 press conference.

Tri-State, he reported, is constructing 1,000 megawatts of new wind and solar and, after 2024, plans to construct another 2,000 megawatts of renewables even as it continues closing coal plants. Last year, it closed Escalante, in New Mexico, and plans to close three units in Colorado, at Craig, between 2024 and 2030.

If still coal-heavy now, Tri-State has committed to decarbonizing its electrical supply 80% by 2030 as compared to 2005 levels. It delivered 18.5% of all electricity consumed in Colorado in 2018, second only to Xcel Energy's 51%. Tri-State also delivers electricity to cooperatives in New Mexico, Wyoming, and Nebraska.

"As we try to achieve our green energy goals, we don't believe it's possible to get there without integrating these massive amounts of renewables across a much larger footprint," said Highley at the Feb. 3 press conference. "Hence our desire to see a full RTO in the West."

Tri-State was joined by the Western Area Power Administration, or WAPA, two major players serving Colorado in committing in September 2019 to participating in the EIM created by the Arkansas-based Southwest Power Pool, or SPP.

Also participating in the new energy imbalance market is the Municipal Energy Agency of Nebraska, or MEAN. MEAN delivers electricity to Aspen, Gunnison, Lyons, and Oak Creek but also Fort Morgan, Holyoke, and 7 other municipal utilities in Colorado.

"The fact that we are talking about markets in the West is, I think, a major change and a major shift," said Mark Gabriel, administrator of WAPA. The West not long ago was described as a "great open wasteland" when it came to energy markets," he said. Now, "markets are coming to the West hard and fast."

In the Missouri Valley, where WAPA also operates, markets have delivered $145 million in direct benefits since 2015, he pointed out.

Gabriel suggested the Rocky Mountains will get an RTO in two or three years.

Highley described the new imbalance market as having "very low cost of entry, with immediate benefits for us." Tri-State spent $3.5 million as its share for software and other costs, but expects to see savings of $2 million in the first year of operation and rising benefits in years beyond.

"It's not the end point," Highley said. "Our ultimate goal is to see a full RTO in the West."

He ticked off the benefits of a full RTO:

• elimination of pancaking of transmission rates (like having to pay a toll every time you pass through a new town).

• ability for renewable energy to flow across multiple regions;

• a more diverse footprint for renewables, which makes them more reliable for everyone.

• broader geographic and resource diversity also allows utilities to operate with fewer reserves, meaning a reduction of capital expense on projects. It might, for

Alphabet soup

SPP	Southwest Power Pool
CAISO	**California Independent System Operator**
EIM	energy imbalance market
WEIS	**Western Energy Imbalance Service (SPP)**
WEIM	Western Energy Imbalance Market (CAISO)
RTO	**regional transmission organization**
ISO	independent system operator, similar to RTO

example, mean one less wind farm, or one less natural gas-fired power plant.

An RTO, said Highley, would deliver at least 10 times the financial benefits of an energy imbalance market. And, he said, it will be imperative for Tri-State as it moves past 50% renewables, because "we can't do that just within our (operating) area."

For those who have studied the future of electrical transmission, these were familiar talking points. But the press conference was an orchestrated effort to persuade whoever was listening that Colorado utilities will best align with Southwest Power Pool.

SPP operates an RTO that is almost entirely in the Central Time Zone. It's drenched with wind, with up to 27 megawatts of electrical generation by the end of last year. It was the dominant resource in the SPP last year, and Barbara Sugg, the chief executive, reports developers want to get in.

But governance was the selling point. The word was used probably 15 times during 25 minutes of talking.

Highley, who came to Colorado from Arkansas, said there's no need to create an entirely new RTO when Colorado utilities can join SPP. "I am very familiar with the PP governance model. It's one of the things we really admire about SPP." SPP is member-driven and its governance transparent, he said—similar to the cooperative model, he added.

"Sometimes that has been described as painfully collaborative, but it gets the results. Everyone gets heard, and at the end of the day we come to solutions that work for everybody."

Supp, the CEO of SPP, asked directly why Rocky Mountain utilities should align with SPP, replied: "It's the governance and the track record."

This includes state regulatory commissions—presumably including the Colorado PUC.

At least two studies were completed in 2020 on the question of the best alignments. A Brattle study found RTO membership could produce an annual savings of $49 million for both SPP and the Western entities.

A different study, conducted by Vibrant Clean Energy, found that alignments with both the Arkansas-based SPP and with the California-based CAISO would benefit utilities, but with somewhat greater benefits resulting from the sun-soaked CAISO.

CAISO, however, makes some in Colorado nervous, because California legislators have so far been unwilling to let loose of oversight of CAISO. There have been other questions as well. That said, Tri-State already operates in CAISO territory in New Mexico.

Xcel Energy and three partners—Platte River Power Authority, Colorado Springs Utilities, and Black Hills Energy—cut a deal with CAISO in late 2019 to create an energy imbalance market for them. That EIM is expected to begin operations in early 2022.

Meanwhile, the Colorado Public Utilities Commission has commissioned a study due this summer to evaluate potential RTO alignments.

And, in the coming Colorado legislative session, State Sen. Chris Hansen has a transmission bill that will, in part, try to give the PUC guidance about how to sort out alignments. Separate RTOs have operated in the state previously, he says, sometimes with success and sometimes not.

A wind turbine at Cheyenne Ridge.

Xcel Energy boasts of wind energy milestone

Xcel Energy reached 10,000 megawatts of wind energy capacity in its eight-state service territory by the end of 2020. The company expects to achieve 31% of its nameplate energy capacity from wind by the end of 2021.

In Colorado, Xcel expects to have 4,135 megawatts of wind-generating capacity by the end of 2021. That will represent 35.3% of the utility's electrical sales in Colorado.

Four wind farms were completed in 2020. The largest was the 500-megawatt Cheyenne Ridge, located east of Denver near the Kansas border. Xcel owns the farm.

Others were 300-megawatt Bronco Plains, the 162-megawatt Colorado Green, and the 171-megawatt Mountain Breeze. Two of the above are power-purchase agreements, and Colorado Green was a repowering of an existing project.

Rush Creek, a 600-megawatt project east of Denver, near Limon, was completed in 2018 and is owned directly by Xcel.

The company will file a proposal with Colorado regulators by the end of March that enumerates its plans. Xcel, in a statement, said the plan is "expected to include continued expansion of wind resources."

Guzman Energy adds Daniela Shapiro as the chief financial officer

Denver-based wholesale power provider Guzman Energy has hired Daniela Shapiro as chief financial officer. Shapiro will oversee Guzman Energy's finance activities and capital strategy.

"Guzman continues to grow and as we expand into new markets, Daniela will be integral to enhancing our strategy," said Christopher Miller, president of Guzman Energy.

Shapiro has more than 20 years of energy infrastructure experience, having led teams and transactions in excess of $5 billion in capital. Before joining Guzman, she led ENGIE's distributed renewables finance and advisory team in North America.

In addition, for the last 11 years, Shapiro has served other leadership and executive roles in early-stage and growth companies in the renewables industry. She also had a banking career over a cumulative period of 10 years when she originated, advised, structured, and closed landmark deals spanning from project financing, infrastructure advisory, tax equity investments, and working capital solutions.