

BIG PIVOTS

ENERGY *and* WATER *transitions in Colorado and beyond*

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Why Vail has begun tearing out turf in its public parks

by Allen Best

Todd Oppenheimer has had a 33-year career in Vail, where he serves as the landscape architect and capital projects manager. Even 20 years ago, he was designing parks with turf. Now, he's tearing it out.

"Maybe I'm making up for past sins here," he said in a telephone interview after the town council approved his plans for partially de-turfing—it's not a word yet, but maybe it will be someday—the second park in the municipality. The master list calls for removing what Oppenheimer calls "non-functional bluegrass" in eight parks.

The council OK'd ripping out 53% of the turf in the more south-facing and difficult-to-irrigate part of a small park called Ellefson.

Oppenheimer claims to have coined the saying that if the only person who walks on the grass is the person pushing a lawnmower, the grass shouldn't be there. With that adage in mind, the town three years ago replaced 25% of the grass at the Buffehr Creek Park with less

water-intensive plants. Included was the strip of grass between the sidewalk and the streets.

None of this is necessarily new. Denver Water decades ago created the word "xeriscape" to push the idea of vegetation appropriate to a semi-arid environment.

Xeriscaping has yet to become a mainstream thought in landscape architecture, but it's gaining ground, says Oppenheimer.

"People are almost forced to," he says, "because of climate change."

If nestled in a valley at the headwaters of a Colorado River tributary, Vail has begun to see the effects of a warming climate. Dry years have been occurring more often, the temperatures have been rising. Oppenheimer says he sees no need to choose plants for warmer climates—yet. He does see an obligation to reduce water use appropriate to a drying climate.

What this Colorado ski town has in common with Las Vegas.



The Buffehr Creek Park as traditionally landscaped. Next page, the same location today.



About 95% of water used in homes and other buildings returns to streams after wastewater treatment. But of irrigation water, he says, only 25% does.

Oppenheimer insists he can only do his part as the landscape architect for one town, but in citing new policies in Las Vegas in a recent presentation to the Vail Town Council, he's obviously aware of a much larger story in the Colorado River Basin.

Las Vegas has been ripping out turf for well more than a decade and has recently ratcheted up incentives even more. It has used both carrots and sticks. The Southern Nevada Water Authority estimates that unused grass in Las Vegas and its suburbs soaks up about 10% of Nevada's entire

allocation of water from the Colorado River—the main source of Southern Nevada's drinking water.

A Nevada law prohibits Colorado River water from watering nonfunctional turf by 2027.

Tightening in Vegas continues in other ways. At the Colorado River Water Users Association conference in mid-December, Colby Pellegrino, deputy general manager for resources at Southern Nevada, described new proposals to trim water use at existing golf courses and ban water for new courses. Swimming pools will be cropped in size. Attention is being focused on the water use of evaporative cooling.

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Average temperature in last 6 months hottest ever

You need to go to the National Oceanic and Atmospheric Administration's webpage that shows a graph of temperatures in Colorado for July-December from 1901 going forward.

There were hot years in the past, most notably during the Dust Bowl of the 1930s. Then there were the consistently hot years of the 21st century. Then there was 2021.

If the previous six-month record were Mt. Elbert, this past six months would be like a 16,000-foot peak in the Andes. [Check out the NOAA website for yourself.](#)

Also, see chart on last page (16).



Flying from Aspen in a jet? Those emissions can now be offset

Emissions resulting from fuel sold at the Aspen-Pitkin County Airport are now being offset by carbon credits purchased from a non-profit organization called Carbonfund.org.

In theory, this means that passengers on every plane that purchases fuel from Atlantic Aviation, the fixed-base operator at the airport, can fly without worry about the carbon emissions the plane is producing. The company began purchasing the carbon credits effective Dec. 1.

This applies to fuel sales for both private and commercial jets.

Those emissions are very real. Even in a plane cramped for space such that you don't know where to put your feet, much less your neighbor's elbow, you cause far

more carbon dioxide emissions flying from Denver to Chicago, for example, than if you were taking the bus.

See: [The moral and technological quandary of aviation emissions.](#)

Through Carbonfund.org, air travelers can purchase offsets for flights up to 10,000 miles at a cost of \$32.50. Other air travel offset packages are also available, as there are for drivers, apartments, and other housing units, even lifestyle offsets. An individual in the latter category costs \$390.

Carbonfund was created in 2003 by a former EPA employee who helped start that agency's EnergyStar program.

Where does the money go? The website describes energy efficiency projects, including one in Kenya that provides communities with efficient cookstoves and a waste co-generation project in South Korea.

The most interesting may be electrification of truck stops at various locations in the United States. Truck drivers commonly keep their trucks idling while not driving. The systems provide a flexible hose

to allow the cabins to be heated or cooled, as needed, and to let the driver run the radio and check e-mail or whatever else. This saves about a gallon of diesel an hour.

Also getting money from the Carbonfund.org offsets are wind farms in both Turkey and Texas and a landfill gas-to-renewable energy project in Massachusetts. The verification of the latter was conducted by Grand Junction-based Ruby Canyon Engineering.

Atlantic Aviation's participation in the program was voluntary. Maureen Poschman, speaking for Atlantic, said the company wanted to get local or at least Colorado offsets, but none were available for purchase. It is believed that Aspen is the first airport in the United States to offset 100% of fuel sold.

Carbon offsets have been a kind of dicey area in the past decade. There's no government regulation to ensure authenticity. That being said, CarbonFund.org seems to rank high in reputability as reported in a skim of news articles. In October, for example, the Wall Street Journal talked with Clint Henderson, senior news editor at The Points Guy travel website. He cited nonprofits as the most reputable provider, and specifically mentioned Carbonfund.org. Valuing offsets can be a bit "squishy," he said.

Emissions caused by air travel have been a vexing challenge for airlines, because unlike cars, the age of jet travel powered by electricity from renewable sources appears to be decades away.

That said, airlines have been making moves to temper their impact. JetBlue in 2020 became the first U.S. airline to voluntarily offset the CO2 emissions from the jet fuel for all its domestic flights. It purchased carbon offsets from three organizations, including Carbonfund.org.

From hot-water heaters to a school bus: Shaving Durango's peak demand

Beginning with about 30 hot-water heaters, La Plata Electric Association intends to begin exploring how to shave peak demand to reduce costs.

The Durango-based electrical cooperative plans to install 30 air-source heat pump water heaters in the Animas View Mobile Home Park. Also done at the same time will be installation of other energy and water-efficient measures, including LED lighting, low-flow faucets and window weather stripping.

The water heater project will allow La Plata to test the viability of grid-integration technology to manage the local power demand. In rare events, during time of peak demand, such as hot summer afternoons, La Plata will be able to remotely manage the water heaters.

Dan Harms, the vice president of grid solutions for La Plata, explains that La Plata will be able to interrupt electricity used by the air-source heat pumps to warm water. This will be temporary and residents will still have hot water in their tanks.

The air-source heat pumps will replace natural gas in warming water. That builds demand for electricity from renewable sources and reduces emissions from the manufactured housing units.

The principle is the same as when Xcel Energy offers discounts to those with air conditioning units in their houses for the ability to turn off the units for relatively brief periods during hot summer afternoons. It's cheaper than buying power or building plants that will be used only a few hours a year.

La Plata has been busy on other fronts, too. In December, the electrical cooperative and the Durango School District launched Colorado's first vehicle-to-grid-enabled school bus. The electric bus will travel about

75 miles per day but will have enough charge to travel 150 to 200 miles. When empty, the bus takes 3 to 4 hours to charge its 155-kWh battery.

La Plata will be able to draw on the battery of the bus when electricity prices are high. When fully charged, the bus stores enough electricity to power 30 average single-family homes, or 100 energy-efficient homes, for a few hours.

“V2G installations are the future because they enable our grid to operate with a higher degree of flexibility,” explains Jessica Matlock, the chief executive.

The bus was purchased with aid of a \$328,803 grant through the [ALT Fuels Colorado](#) program augmented by \$120,000 from La Plata for charging infrastructure.

The air-source hot water heater project was enabled by a \$50,000 grant from Tri-State Generation and Transmission and the Beneficial League.

Another information source from Tri-State coop members

A group of rural electric cooperative members has relaunched website, [Members4Reform.org](#), to provide information and tools to inform the discussion about Tri-State Generation & Transmission.

Originally created to bring together member-owners of coops in seven western Colorado counties, the creators of the website decided there was need to expand this to include all of Tri-State’s 18 member cooperatives in Colorado. Tri-State has 42 members, 18 in Colorado.

“We’ve felt for so long like we were operating in the dark and didn’t have a voice in decisions that affect a huge swath of Colorado, from the West Slope to the Eastern Plains,” said Mason Osgood, executive director of Telluride-based Sheep Mountain Alliance and a member-owner of San Miguel Power Association.

“Tri-State is moving slowly in the right direction, but there are so many of us who want to see the transition to clean energy happen more quickly and to have the barriers Tri-State is putting up removed. This website is meant to give co-op members a new tool for creating change.”

While planning to close its coal-fired units in Colorado (as it already has in New Mexico), Tri-State plans to continue its operations at two other plants, one in Arizona and the other in Wyoming.

Many of the decisions that will dictate whether Tri-State can be pushed in a new direction are playing out now before the Colorado Public Utilities Commission, which oversees Tri-State’s electric resource planning, or ERP, process.

“Energy generation, transmission and distribution are complicated topics. It’s often difficult to follow along and participate in proceedings like the ERP,” said Becky Henderson, who lives in Pinewood Springs, a hamlet located in the foothills northwest of Longmont. It is served by Poudre Valley Rural Electric Association.

United Power collaborating with national group to deliver EV charging stations

United Power has joined the National Electric Highway Coalition in an effort to provide accessible electric vehicle charging infrastructure.

Brighton-based United serves more than 10,000 members on the northern flanks of metro Denver, including areas with high adoption of EVs. Two interstate highways, I-25 and I-76, traverse the service territory.

Last year, United opened its second fast charger in Keenesburg, filling the gap for those driving EVs between Brighton and Fort Morgan.

Craig newspaper: time to get on with thinking about life after coal

The Craig Daily Press had an editorial in December calling on the community to get more serious in thinking about a post-coal economy.

“In some ways, Craig is still standing in the same place as it was 12 months ago—except we’re a year closer to our impending destiny, whatever that means,” the newspaper said.

Craig Generating Station has three coal-fired units built in the late 1970s and early 1980s. The first is to retire by 2025 and the other two by 2028 and then 2030.

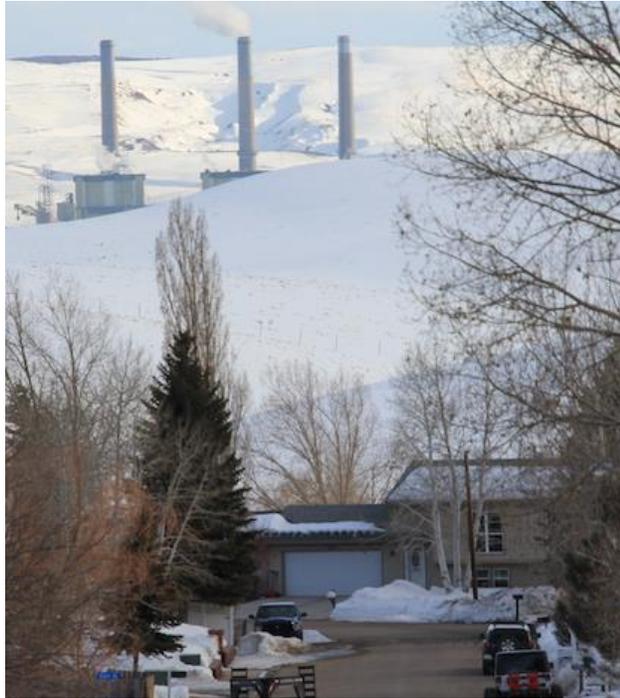
The newspaper acknowledged the relative prosperity coal has delivered to Craig during the last 40 to 45 years. “Coal has been a godsend to this community. It’s raised so many of us. It’s the reason so many of us came here. One way or another, coal is why Craig is Craig at this particular moment in time.”

Coal delivers 60% of Moffat County’s tax base.

The newspaper urged its readers to stop hoping for a miracle that will retain coal. It also advised against wanting to put all its eggs in one basket. “Large employers make us feel safe, and understandably so. The coal industry was a safe, lucrative productive one for generations. They created a comfortable living for a large, thriving employee class.

“We’re living with the consequences of that thinking,” it said. Instead, it sees the path forward being an aggregation of small enterprises.

“We’ve got to go from being a city of employees to a city of employers,” the paper said. “We need to activate our entrepreneur class. Small business is the backbone of America.”



For a deep dive on Craig and the nearby community of Hayden and their economic transitions, see

[“Colorado aims for Just Transition”](#)

from Aug. 7, 2020, and

[“When the coal plants finally close,”](#)

Aug. 13, 2020.

Pueblo County energy board to dive into the possibilities

An “energy board” was expected to start taking shape in early 2022 in Pueblo County to consider what sort of energy future the county, site of the Comanche Generating Station as well as Colorado’s largest solar array on the property of the Evraz steel mill, will look like.

Pueblo County Commissioner Chris Wiseman in early November told the Pueblo Chieftain that nearly the entire gamut will come under the purview of the study group, which will issue a report by year’s end. Wiseman will not run for reelection in November.

“I want to look at natural gas ...the entire spectrum all the way up to nuclear,” Wiseman told the newspaper. That also

includes green hydrogen, which is made from water and renewable sources.

Pueblo, the city, also has an energy task force, which met multiple times in 2021. A presentation was given to the city council. One take-away from that presentation was that nuclear is the choice of last resort.

That presentation also argued against the operating of Comanche 3 until 2040, as was then proposed. (Xcel now proposes 2035). Climate change and the cost of coal would not allow operations to continue that long, city council members were told.



Voluntary approach didn't work, so Aspen looking to mandate building work

In 2018, Aspen launched a building benchmarking program aimed at larger commercial buildings. It was all voluntary. It yielded no volunteers.

Instead, the city now plans mandatory participation by commercial buildings of more than 20,000 square feet by December and multi-family dwellings by 2024. The program will require building owners and managers to track and reduce their energy use. The proposed law for Building IQ, as the program is called, would set an annual deadline for property owners to report their energy use and make improvements.

Aspen's inventory finds buildings account for 58% of emissions, transportation 24%, waste 12%, and aviation 5%.

Governor says Colorado on track to meet its targets for reduction of emissions

A 2019 law specified goals of reducing Colorado's economy wide targets for emissions reduction, the most important being 50% by 2030. Colorado, say state officials, is on schedule to achieve that goal.

"This report shows the breadth and depth of work happening across state agencies to tackle climate change and that we are on track to meet our targets," said Will Toor, director of the Colorado Energy Office, in a press release issued during the last week of December.

That same law specified a 26% reduction by 2025 and, then in 2040, a 90% reduction.

Gov. Jared Polis in July issued an executive order requiring state agencies to update the public on progress being made on the Greenhouse Gas Roadmap and identify opportunities for further action.

Actions in 2021 included:

- standards for greenhouse gas pollution in transportation planning;
- investments in electric vehicle infrastructure and incentives;
- a clean truck strategy;
- energy efficiency requirements for gas utilities;
- clean-heat planning for gas utilities;
- advanced building codes.

Every three months, state agencies must report the percentage of near-term actions on track, with the goal of acting on at least 90% of the items identified in the roadmap that was adopted in January. By year's end, the state was on track for 93% of near-term actions.



A little bit here, a little bit there: What Platte River hopes to see in solar bids

Platte River Power Authority has told power developers it wants proposals for up to 250 megawatts of solar by Feb. 18. It is looking for this solar – plus storage — on both sides of the Continental Divide.

The member-owned utility delivers electricity to Fort Collins, Longmont, Loveland, and Estes Park. The solar capacity will displace coal at plants at Craig and north of Fort Collins that are scheduled for retirement by 2030. Platte River currently owns 18% of two coal-fired power units at the Craig Generating Station, which are to be retired in 2025 and 2028.

The [request for proposal](#) stipulates a strong preference for up to 125 megawatts in the Meeker, Rifle, and Craig areas where electrical substations already exist along transmission lines. Also strongly preferred is up to 125 megawatts near the Rawhide power plant, Platte River’s coal-fired plant north of Fort Collins.

In keeping with the new idea of distributed energy resources, Platte River is particularly interested in seeing proposals for projects of 25 megawatts or less that could connect to the distribution systems serving its four member cities.

“The goal is to have distributed energy resources in every member community,” said Jason Frisbie, general manager and chief executive.

What they told Fort Collins

Fort Collins has 5 finalists for its position of director of utilities. As per the Coloradoan, this is what several said:

- “As I tell our staff at the city of Longmont each and every day, we are building the utility of the future. What we did in the past was very successful, but it does not guarantee our success in a much different energy future.”

— **Dave Hornbacher**

Longmont director of utilities (and formerly of Aspen Utilities)

- Decarbonization will pose challenges, such as strain on the grid from electrification of vehicles and the necessity of major capital expenses to continue moving to renewables and fortify infrastructure in the face of climate change impacts. Cybersecurity will also be a big concern as utilities have to grapple with system vulnerabilities.

— **Scott Kulwicki**
NextEra Energy

- “We’ve done a really good job of setting mid-century goals. But I think we’re starting to feel competing pressure as to whether that’s urgent enough. Do we need more aggressive climate policy?”

— **Tiana Smith**
Vermont Gas (formerly of Fort Collins Utilities).

Platte River also wants to see up to 100 megawatts of battery storage that can store the total output of the installation for four hours or more. This can be at the big projects, the smaller projects among the four member cities, or both.

“Connecting solar and battery storage on both the transmission and distribution

systems will improve reliability and further advance our strategy of system integration,” said Frisbie.

This addition of solar will boost Platte River to 54% non-carbon sources.

Directors of Platte River in 2018 adopted a resource diversification policy that calls for utility leaders to pursue a 100% non-carbon energy mix by 2030, provided the organization’s core pillars of reliability and lower cost are upheld.

In 2020, Platte River maintained 100% transmission system reliability and provided power to its owner communities at the lowest wholesale rates in Colorado.

and they have no need for electricity and keep functioning after bad storms.

The story made no mention of Vail, one of the very first municipalities in the United States to employ the modern roundabout in which traffic arrives at the circle at a slant instead of perpendicular fashion, as in the older traffic circles. That allows traffic to ease into the circle more easily, expediting flow.

Vail was flummoxed in the early 1990s by growing traffic at its main intersection adjacent to Interstate 70. The four-way stop groaned during high-traffic times, such as Christmas week, with waits up to 45 minutes to get through the intersection.

The traffic count there was 3,500 vehicles an hour, a high count for an intersection sandwiched by an interstate highway and a resort village.

Roundabouts were virtually unknown then in the United States. Greg Hall, then and now the public works director, remembers



Roundabouts as a way to trim GHG emissions

The New York Times in December had a front-page story about traffic roundabouts, focusing on the Indiana city of Carmel. It has 140 roundabouts, with more than a dozen still to come.

“No American city has more,” the Times said. “The main reason is safety; compared with regular intersections, roundabouts significantly reduce injuries and deaths. But there’s also a climate benefit.”

The Times story noted that each roundabout saves about 20,000 gallons of fuel annually, meaning fewer emissions,

research that included getting video footage from several locations where the modern roundabouts had already been built. The most important video came from Norway, because of the snowy conditions. Another one came from southern California, either Santa Barbara or Long Beach.

The proposal in Vail was hotly contested by some, who predicted utter mayhem. The reality was anything but. When the first one opened at Thanksgiving 1995, it was an instant hit.

Hall remembers no discussion of greenhouse gas emissions in that choice or the others that soon followed. Tailpipe emissions were a consideration. To have

cars waiting to get through the intersection or up to 45 minutes did nothing to improve the air quality in the Gore Valley, where Vail is located. The town about the same time began to put an end to traditional wood stoves, which were creating an air pollution problem. Other mountain towns had the same problem.

Upon completion of that first roundabout, Vail's wasn't the 10th in the nation. Its prominence as a major resort and its location along an interstate highway, made it a powerful influencer, though.

Now, Vail has seven roundabouts and is considering one or two more. As for that original intersection, traffic has been reduced because of the addition of another path off and onto I-70, but it still accommodates 3,100 vehicles an hour and handles the traffic well.

Why environmental groups hailed transportation rule adopted by Colorado

The praise from environmental advocacy groups was almost effusive in December after the Colorado Transportation Commission voted 10-1 to approve a new rule that shifts how

Colorado will go about transportation planning.

"Colorado has been building communities around cars for decades," said Travis Madsen, transportation program director at the Southwest Energy Efficiency Project.

"When you build for more cars, more cars are what you get."

Coal-fired power plants were the easy target for reduction of emissions of greenhouse gases. Colorado will move fast in the next 8 years to close down the plants.

Transportation is already the No. 1 source of emissions in Colorado.

Madsen and others expect the new process will increase investment in less polluting models of transportation, including mass transit, biking, and walking. They also say it will promote more transportation-efficient land-use patterns to shorten travel distances between houses, jobs, and other services.

The rule applies to CDOT planning as well as those of its five major metropolitan planning organizations.

Becky English, chair of the Sierra Club's transportation committee in Colorado, said only a handful of states have taken a step like this.

The rule also takes note of the disproportionate impacts of transportation on lower-income communities, which tend to be people of racial and ethnic minorities.

Whether the rule will prioritize benefits for disproportionately impacted communities remains to be seen.



“While we wish the rule did more to meaningfully protect disproportionately impacted communities, we are glad that it requires CDOT and planning organizations both to recognize and begin taking responsibility for transportation infrastructure that deeply affects such communities,” said English.

Colorado expects to spend more than \$30 billion on transportation infrastructure between 2022 and 2050.



But in December, the Colorado Air Quality Control Commission adopted regulations that will increase leak detection and repair inspections at oil and gas facilities.

Under the new rules, every oil and gas well in the state will be inspected at least once a year. That almost doubles the number of inspections.

Companies will have to inspect wells that produce more than 20 tons of oil and gas monthly, as well as those near disproportionately impacted communities and within 1,000 feet of homes and schools.

Transportation agency now has leader in Environmental Justice and Equity Branch

As per Colorado’s 2021 comprehensive transportation funding and modernization law, CDOT has a new department called the Environmental Justice and Equity Branch. The person hired to lead that department is Marsha Nelson, who formerly led a similar effort within Denver’s municipal government.

“Achieving equity requires intention,” said Nelson in a December press release. “It requires collaboration and respect of different perspectives and the lived experiences of others. I am eager to begin the work, both internally and externally, to advance transportation equity, environmental justice, and in shaping future generations of transportation leaders.”

From source to end uses, Colorado tightens valves

From well heads to end uses, Colorado tightened the valves on methane emissions.

In the case of buildings, where state legislators adopted four bills that collectively seek to drive down demand of natural gas in buildings, that expression is metaphorical.

Gas plants losing fast in competition with cleaner energy sources, says RMI

More than 50% of gas plants proposed to come online in the past two years have been canceled prior to construction as clean energy resources have become more and more competitive, reports the Rocky Mountain Institute in a December report.

RMI said the trend has been shifting against new gas plants in the United States for several years. It began its analysis in 2018 and now asserts that combinations of wind, solar, energy efficiency, demand response, and battery storage can provide the same reliability as a gas-fired power plant.

Assuming nuclear plant goes forward, town in Wyoming gearing up

Kemmerer, a town in southwest Wyoming, has long been famous as the site of the first JCPenney clothing store. It now hopes to make history as the site of a next-gen nuclear power plant.

TerraPower, the start-up co-founded by Bill Gates to revolutionize designs for nuclear reactors, announced in December that it had chosen Kemmerer from among four Wyoming towns and cities with coal-fired power plants to go forward with its plans for a demonstration project, called Natrium.

The plant is being developed in partnership with Rocky Mountain Power, a subsidiary of PacifiCorp.

The Casper Star-Tribune explains that the U.S. Department of Energy has promised to pay up to \$1.6 billion, as long as the plant is operational by 2028. The full plan cost is projected to be \$4 billion.

TerraPower needs two major permits: a construction license by August 2023 and an operating license in March 2026.

This is a tight timeline – which was the intent of Congress, with the goal that it will reduce costs. Also working to reduce costs will be a relatively small plant size, 345 megawatts, with the potential to expand to a capacity of 500 megawatts. TerraPower hopes to eventually reduce costs to \$1 billion.

[CNBC in November](#) explained that the Kemmerer plant will be the first to use the Natrium design crafted by TerraPower with GE-Hitachi. It is to use liquid sodium as a cooling agent instead of water, because it has a higher boiling point and can absorb more heat than water. This means high pressure does not build up inside the reactor, reducing the risk of an explosion.

The molten salt can also be used as a battery.



Seemingly a messy standoff in Wyoming about the Jim Bridger power plant

[WyoFile reports](#) what looks to be a messy standoff about the continued operations of one of the units at the Jim Bridger Power Plant near Rock Springs.

At issue is a regional haze permit. The operator of the coal plant, PacifiCorp, continues to operate unit 2 with a federal permit from the EPA in limbo. It claims that as of Jan. 1 it is operating the unit in compliance with a revised plan approved by Wyoming—but which remains in limbo at the Environmental Protection Agency.

EPA spokesman Rich Mylott told WyoFile that the agency's primary focus is "continuing to work with the state and stakeholders to identify solutions that are consistent with the Clean Air Act, safeguard public health and air quality, and protect Wyoming's workers and communities."

Wyoming Gov. Mark Gordon in late December wrote to the agency warning of a potential shut down that would result in higher costs for electricity being passed on to consumers in Wyoming and across the West.

The first two units of the power plant are to be converted to natural gas in 2024.



Coal production rose in Wyoming during 2021, but that’s just part of a bigger story of decline

Coal production rose in Wyoming during 2021, part of a surge for coal as the nation and world’s economies grew rapidly.

Long term, though, coal continues to lose market share in the United States—and Colorado’s Comanche Generating Station is part of that story.

The Casper Star-Tribune notes that the spot market for Powder River Basin skyrocketed in mid-November to a \$30 per short ton, more than double the previous 10-year high of \$13.25.

The newspaper explained that natural gas production lagged demand, causing utilities to turn more to coal.

It was part of an international trend. “This year’s historically high level of coal power generation is a worrying sign of how far off track the world is in its efforts to put

emissions into decline toward net zero,” said Fatih Birol, executive director of the International Energy Administration.

But the Institute for Energy Economics and Financial Analysis warns that the narrative of coal’s resurgence in 2021 disguises the larger story.

Looking not just at Wyoming but the United States altogether, the organization found that the recovery had actually evaporated in November and December. The long-term trend is clear: Coal’s share of electrical generation has fallen by half since 2010—and more is to come. It stood at 22.5% in 2021.

IEEFA cites the example of Comanche, where two units that burn Powder River coal will close in 2023 and 2025. Still unclear is the precise closing of the third and newest unit, Comanche 3, but an agreement reached by Xcel Energy with other stakeholders in November would reduce the unit’s output to no more than 33% by 2029 and close the unit entirely by the end of 2034.

No Wyoming finalist in Build Back challenge. Was Biden team biased?

Colorado has seven bordering states, and all of them except one, Wyoming, had at least one project named among the 60 finalists in the Build Back Better Regional Challenge Program from among the 529 applications.

Wyoming's congressional delegation accused the Biden administration of prejudice, as did the governor, Mark Gordon. "I am furious that this administration has turned its back on the number one coal-producing state," said Gordon said. U.S. Senator John Barrasso called it a "slap in the face to our coal communities, energy workers and their families."

U.S. Rep. Liz Cheney said this was why she had voted against the \$1.9 trillion American Rescue Plan Act. Cheney, the lone representative from Wyoming, and the state's two senators all opposed the bill.

WyoFile explains that the Build Back Better program solicited regional-scale plans to diversify local economies. Coal communities are to be among the priority targets in the federal stimulus effort, as well as native and rural communities.

Cheyenne proposed a commuter trail to Fort Collins. Campbell County, i.e. Gillette, proposed a coal-to-products industry.

Where were the politicians when we needed them? asked Logan Jenkins, a Sheridan businessman. He suggested that state and local officials didn't make the cut because they didn't address the program guidelines. And why not? Because of a sense of entitlement. In particular, the proposals lacked regional thinking.

The 60 finalists will compete to be among 3 to 8 regional projects, with each to be awarded \$100 million.

What did the 60 finalists look like? Well, you judge whether Wyoming politicians have a point.

The **Colorado** Coalition, led by Innosphere Ventures, proposes to grow the Colorado Front Range region's intensive research and development growth cluster in STEM (science, technology, engineering and mathematics) to rapidly scale the local biosciences and cleantech industries. "If provided an implementation grant, the coalition proposes to develop six construction projects; grow cluster employment, particularly focused on growing the region's Black and LatinX workforce; and incubate STEM startup ventures, especially increasing those owned by people of color." [See more here.](#)

Nebraska's Heartland Robotics Cluster promises to make Nebraska a leader in robotic technologies and advanced manufacturing automation targeting the agriculture industry.

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The Utah Energy Diversity and Innovation Cluster Coalition aims to diversify the state’s rural regional economies away from deep dependency on coal mining and coal-powered energy to an interstate regional producer of diverse, reliable, low-carbon power and energy technologies.

In **New Mexico**, a coalition in the central Rio Grande Valley led by a community college “aims to address and capitalize on the growing commercial space industry.” Another project was centered in Albuquerque.

In **Kansas**, a coalition led by Wichita State University “aims to empower the adoption of productivity-enhancing technologies to promote manufacturing competitiveness and profitability in the Wichita region” by expanding semiconductor testing, evaluating semiconductor manufacturing, growing resiliency of smart manufacturing, employing an additive manufacturing strategy, expanding the workforce, and establishing a cyber manufacturing sector with the goal of creating job growth.

Oklahoma’s Indian Nations Council of Governments “aims to turn the region (around Tulsa) into a hub for both R&D and production in the advanced mobility industry.”

Arizona has several finalists, including the Hopi Utilities Corporation promise of a large-scale solar project to fill the void of lost revenues and jobs lost with the closure of the Navajo Generating Station coal plant and mining operations.

Major electrical outages in Taos, and possible solutions

A snow storm that toppled trees into electrical lines in 2021 in the Taos area had residents wondering what was going on. The problem continued on Jan. 1 when a 69-kilovolt pole snapped, cutting power to 3,000 to 3,500 people.

The total number of outages had not increased, but the major outages doubled in the year. The Taos News reported getting hundreds of messages from readers who wondered what was going on.

Might putting electrical lines underground be the answer?

Luis Reyes Jr., the chief executive of Kit Carson Electric Cooperative, pointed out that the cost of undergrounding electrical lines runs about three and a half times that of overhead lines. They are also more costly to repair. Those decisions to go underground would be the result of municipal or county edicts.

Another possibility, he said, would be to install steel poles, to harden the system.

No dice, says New Mexico to proposed sale of coal plant to Navajo Nation

A proposal by the Public Service Co. of New Mexico to turn over its share of the Four Corners Power Plant to Navajo Transition Energy Co. was rejected by state regulators in December.

The deal turned on use of securitization, a device adopted by both New Mexico and Colorado as a way to retire coal plants early. PNM, as the utility is called, said the proposal would have saved customers between \$30 million and \$300 million over the long run.

The Santa Fe New Mexican reported that commissioners emphasized that the proposal didn’t identify replacement power sources for the abandoned coal-fired plant. The utility had wanted to depart from the coal plant at the end of 2024 after paying the Navajo \$74 million.

The New Mexican explains that many community and environmental groups objected because PNM’s abandonment proposal did little or nothing to stop the coal plant from operating.

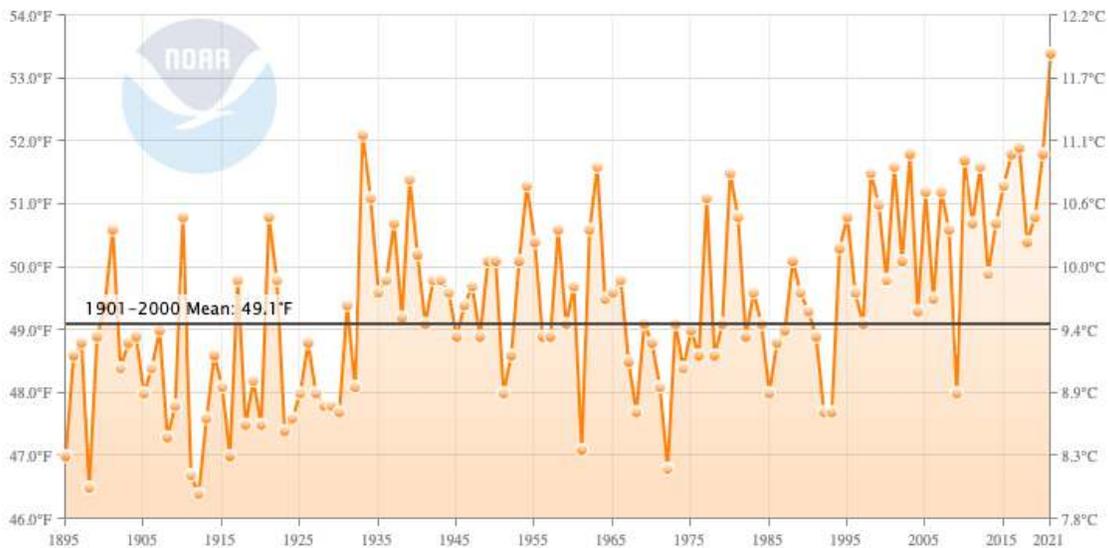
It's not clear when the plant will close. Arizona Public Service is the majority owner. PNM owns 13% and Navajo Transitional 7%.

New Mexico putting together framework for community solar programs

The New Mexico Public Regulation Commission has until April to establish the framework for community solar programs. The programs are to give opportunities for households and businesses that don't have access to solar for various reasons to instead subscribe to solar-produced electrical in small, local facilities.

More than 40 states have at least one community solar project. The Solar Energy Industries Association reports more than 3 gigawatts of installed community solar through September 2021. It estimates an additional 4 gigawatts in the next five years.

Colorado Average Temperature
July-December



It was hot in the 1930s, the time of the Dust Bowl, but last year was far higher, as this chart released this week by the National Oceanic and Atmospheric Administration demonstrates.