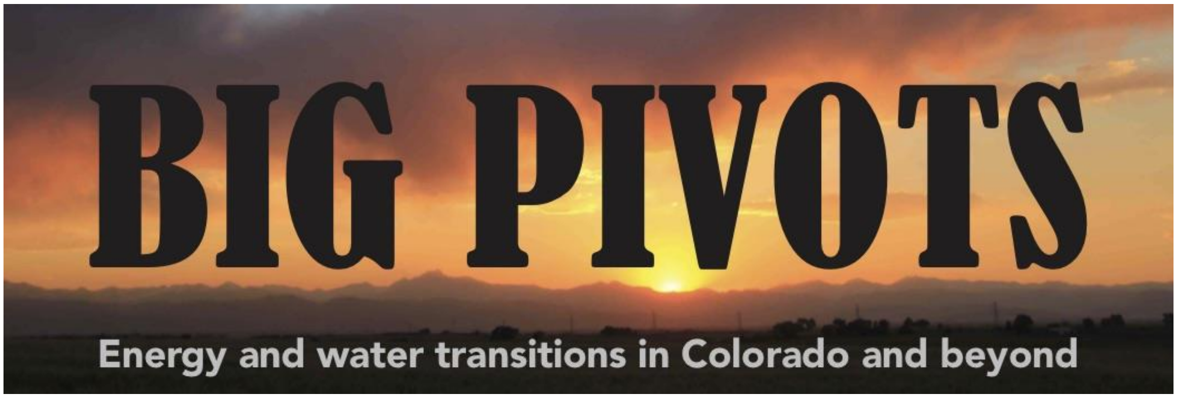

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How Colorado's climate & energy legislative agenda may progress

by Allen Best

Carrots or sticks—or, more likely, what mixture? That will be among the questions as Colorado legislators sort through several dozen bills during the next few months that seek to build on the state's ground-breaking energy and climate laws from 2019.

Foremost among the 13 energy and climate laws of that session was H.B.19-1261, the Climate Action Plan to Reduce Pollution. The law specified economy-wide carbon reduction targets of 26% by 2025 and 50% by 2030, with even deeper mid-century reduction.

The 2019 session provided only a partially defined pathway to reduction. The legislative session that begins today after a month-long semi-hiatus looks to be a big, big year for expanding the tool kit and defining more explicitly the decarbonization path. Some describe it as the session that will be known for beneficial electrification.

"We have obviously done a lot as a state when it comes to climate and energy issues in just the last two years," said Senate Majority Leader Steve Fenberg at a forum last week sponsored by Empowering Our Future. "But we all know it's nowhere near what we need to be doing."

Fenberg urged the 200 energy-change advocates on the video-conferenced town hall to use the accomplishments as inspiration even though, later in the evening, he cautioned against expecting a ban on new natural gas hookups in the built environment.

One giant gain in the last two years has been the rash of announced closings of coal plants. If market forces were already aligned behind those closings, some believe Colorado's action in 2019 hastened at least some of those announcements. The result of closing coal plants will be a dramatically decarbonized electrical supply by the end of the decade that can then be used to decarbonize other sectors, most notably transportation and the built environment.

Legislators, of course, are facing pressures from several sides. Major utilities generally want to go slower, to maintain traditional models of profit, worried about too much disruption.

Environmental advocates want to go faster and have a strong appetite for massive change. “I think it’s alarming to think that we didn’t get to 26% (carbon reduction, as targeted by the law two years ago) even at the height of the stay-at-home orders,” says Jan Rose, an advocate aligned with several organizations.

Memories of wildfires, even in the coldest, sub-zero days of winter, will provide a backdrop for the session. The smoke was awful but also deadly. In Larimer County, heart attacks and other emergencies spiked during the season of smoke, which there began in mid-August with the outbreak of the Cameron Peak Fire and never completely ended until after the first snows of November.

> “I think the average Coloradan’s sense of urgency around climate change has only increased since 2019.”
> **Erin Overturf**
> ***Western Resource Advocates***

“I think the average Coloradan’s sense of urgency around climate change has only increased since 2019,” says Erin Overturf, deputy director of the Clean Energy Program at Western Resource Advocates.

“I think this last summer was a real wakeup call for a lot of people—and a lot of lawmakers—about what is at stake here and what it will take for us to solve this problem. I have never experienced anything like the physical and emotional turmoil we saw related to our failure so far to get our climate emissions under control,” she says.

“I think there’s a real sense of urgency. We passed some incredible pieces of legislation in 2019, and we made some progress, but we haven’t made nearly enough.”

Mike Kruger, chief executive of Colorado Solar and Storage Association, also points to this heightened sense of urgency. The goal of 50% decarbonization is less than 9 years away. That goal was premised on the best science available about the reductions that will be needed.

“We can’t just bargain our way to a couple of extra years,” says Kruger. “We need to address things now.”

State Sen. Rachel Zenzinger, a Democrat from Arvada, warns against moving forward in ways that fail to have a sustainable foundation. She describes broad coalitions that define common ground. “That is what is going to make your policies have staying power. That is what will make them work,” says Zenzinger, a self-described moderate who nonetheless has notched a 100% voting record rating from Conservation Colorado during the last four years.

Big Pivots has identified several dozen proposals likely to be introduced by legislators this week and in coming weeks. Some will be reintroductions of bills that were shelved last year because of the covid-induced shortened session, or even bills introduced repeatedly, if in variant fashion. Others will be entirely new.

The two biggest energy and climate bills will center around transportation and building emissions.

“This legislation session will be very focused on progress in both the built environment and transportation to ensure that we are extending the benefit of the (greening) of electricity and start making progress in other sectors that are lagging behind the power sector,” says Zach Pierce, the special climate and energy advisor to Colorado Gov. Jared Polis.

Transportation has replaced electrical generation as the No. 1 source of greenhouse gas emissions in Colorado. In his first executive order as governor in 2019 Polis specified a goal of having 940,000 electric vehicles on roads by 2030. Legislation in 2019 provided tools to advance that. But Colorado needs to hurry harder on transportation decarbonization.

Sen. Faith Winter, a Democrat from Westminster, has not revealed details of the big bill that she is said to have been working on. The tr ansportation bill needs to cover a lot of ground. Colorado's funding for transportation has fallen short for many years as voters have resisted raising the gas tax (or, if you prefer, the "fee" on gasoline). Now, with electric cars starting to rapidly enter the automotive fleet, there's a further complication about how to make them pay their way.

As Sen. Winter was unable to make a scheduled interview for this story last Friday, my details on this bill are sketchy and second- or third-hand.

There is no doubt that Colorado's funding for transportation needs an overhaul. And transportation must change if Colorado is to meet its decarbonization goals built on the foundation of climate science.

What I hear is that this bill will try to address the need for revenue from both electric vehicles, or EVs, and internal-combustion engines, or ICEs. How it will do so is unclear. One way may be through increased registration fees. Another thought is to add a fee for electricity used for charging EVs. Still another idea is to apply a road use fee, not a fuel fee. I'm unsure of the mechanics of that, although it's been talked about for about 30 years.

"We want a tool that keeps up with the times," says Ariana Gonzalez, Colorado policy director for the Natural Resources Defense Council.

NRDC wants to see legislation that looks at transportation more holistically, she says, "not penalizing people who travel a lot but providing them more options, whether it's more fuel-efficient vehicles or more mass transit."

What does this mean specifically? Well, the Gonzalez interview was conducted in the first week of February, and details were sparse. Others interviewed for this story were similarly short on details except to point out that anti-tax (or fee) opponents still have powerful influence in Colorado. And Polis, in a public interview, conspicuously refrained from talking about either taxes or fees.

A carbon-reduction component, however, has to be a central piece of what Winter proposes. Transportation funding identified in the bill must align with the emissions reductions the governor's roadmap has identified, says Katie Belgard, of Conservation Colorado.

Land use may be part of the discussion, as dispersed settlement tends to result in more transportation. It was discussed in the state's decarbonization roadmap release in mid-January.

State Sen. Chris Hansen, a Democrat from Denver, says the transportation bill must deliver "broad-based solutions where each part of the transportation user groups all need to be involved in the solutions." That package must involve trucks and heavy-duty vehicles, he added.

The Air Quality Control Commission is scheduled to take up transportation this summer as part of its rule-making to achieve decarbonization goals. You can be assured this legislative session will almost certainly produce a big pivot in transportation.

Building emissions will be the focus of a second big bill. Buildings rank fourth in Colorado in responsibility for greenhouse gas emissions. They pose an enormous challenge because the turnover rate is so terribly slow. Most of Colorado's coal-burning plants were constructed from the late '60s to the early '80s. Now, they're rapidly being retired. But you can drive from Pueblo to Brush to Craig in a day and see them all. In contrast, Colorado has perhaps a million buildings, give or take, each with its own small power plant, mostly natural gas furnaces for space heating, gas-powered hot water heaters, and gas stoves.

How to tamp down the combustion of natural gas? The intuitive answer might be to stop building tens of thousands more houses each year that require natural gas. That doesn't seem to be the direction Colorado is headed, at least not soon.

Polis favors incentives, not mandates, and that was also the language of Fenberg at the Empowering our Future session. He would not, he said, be calling for a ban on natural gas.

"For a few reasons," he went on to explain. "One, I am not sure the bill would pass, and if it is really about transitioning people's homes to electricity I want a bill that passes. He also suggested that focusing solely on future buildings without considering how to retrofit existing buildings was misguided. Too, a lot of people like to cook with natural gas, even if they don't care particularly how their homes are heated."

It is, he added, an item for "further policy discussion. The goal now is to get as many dollars into homes for heat pumps and other decarbonization techniques."

In other words, incentives, not mandates.

For example, the Polis budget includes $40 million for clean-energy financial programs, including $30 million for green banking, and another $10 million for various other programs.

> "If it is really about transitioning people's homes to electricity I want a bill that passes."
>
> **Steve Fenberg**
> ***Senate majority leader***

Even so, there could be a soft mandate. One approach that was being talked about in recent weeks was a performance-based standard for natural gas utilities, a required reduction in emissions from the natural gas sold to consumers by Colorado's four natural gas utilities, Xcel Energy, Black Hills Energy, Atmos Energy, and Colorado Natural Gas. But then let the utilities figure out how to achieve this.

Also part of the discussion are required energy efficiency upgrades, or demand-side management. Talk of a carbon tax on methane, similar to the PUC's social cost of carbon, may have been walked back. I hear that from a good source, but I don't know that for sure. This has been a fluid environment even in the last two weeks. "Lots of stake-holding going on," a legislator said at a recent meeting.

There will be themes, though. One is about equity. Legislators in 2019 made it clear that equity needed to be part of the conversations as they applied pressure to create this big pivot in Colorado's energy foundation. Those of lower incomes, which tend to be racial minorities, need to benefit from this transition. This will be part of the conversation in regard to transportation and other bills, too.

Energy Outreach Colorado has been monitoring the conversation about proposed bills with an interest in how well they affect energy affordability, reliability, and accessibility.

"There is a lot of transition happening in the energy space, which is exciting, but that speed of transition can often leave people behind when they are not considered upfront," says Jennifer Gremmert, executive director of Energy Outreach Colorado.

"I think the aggressive goals the state has will require a lot of shifts in generation, transportation and buildings," she says. "I think there are a lot of very smart people pulling together good solutions, and we're looking forward to the process of debate and consideration."

Another element running through many of the energy and climate bills will be the role of evolving technologies. There's much talk about hydrogen, for example, but also battery storage. What mix of carrots and sticks will be needed to help induce technological innovation and adoption while remaining agnostic about what the solutions look like?

Even in the shaping of bills, the enormous clout of Colorado's major utilities and oil-and-gas interests can be detected. Xcel Energy, for example, urged a far slower approach to building electrification, even if it will theoretically benefit by selling more electricity to replace lost gas sales. It cites various concerns, including whether the transmission can be created to deliver the renewables sufficiently fast as needed to supply both electrified transportation and electrified homes.

On Thursday, Feb. 18, Xcel plans to disclose its electric resource plans in advance of its scheduled March 31 filing with the PUC. That could conceivably have a bearing on the legislation.

Geographical schisms also are evident. Boulder and Weld counties share a border but preciously little else on political talking points. As both Boulder and Boulder County seek to replace natural gas in big and remodeled homes, a bill is said to be coming from a Weld County legislator that would ban any bans on natural gas.

Some of those involved in helping shape legislation say they have been advised to trim their proposals, because of time limitations imposed by covid. Hansen, who is part of the legislative leadership team, disagrees. "I don't think this session will be shortened very much in a functional way," says Hansen. "All the legislative days we need will be available. This is going to be a very busy and important session. Big legislation typically passes in odd-numbered years, because it's often harder to get the big pieces done in an election year."

Fenberg sees opportunity amid the many crises. "In many ways I think the crises in front of us are a massive opportunity to rethink and imagine what we want our society to look like."

This story attempts to be semi-comprehensive, but it has gaps of which I'm aware and likely important gaps of which I'm unaware. The conversation is fluid, so some information is likely dated. It's a view from 15,000 or 20,000 feet, with a few clouds obscuring visibility here and there. I hope to follow the legislative session closely, as it is part of Colorado's Big Pivot.

The East Troublesome fire added a new dimension to wildlife worries in Colorado. *Photo/Brad White*

Wildfire is top of mind

It's a given that the state will have to step up its response to the prospect of wildfire. The three largest wildfires in Colorado history occurred in 2020.

The East Troublesome Fire wasn't the largest — that distinction belongs to the Cameron Peak Fire west of Fort Collins—but it was the scariest, racing from north of Hot Sulphur Springs to cover more than 100,000 acres within 24 hours, leaping across the Continental Divide and forcing the evacuation of Estes Park.

That's a California-sized fire – and more California-type fires are almost certainly headed to Colorado given the rising temperatures and the increasing propensity toward drought, both manifestations of climate change.

"We are absolutely going to focus on wildfire mitigation," said Senate Majority Steve Fenberg, a Democrat from Boulder, at the February forum sponsored by Empowering Our Future.

Some of this mitigation will involve funding, such as for equipment, and I didn't dig up anything here. I did hear about two bills that relate to wildfire.

Renewal of 2008 funding opportunity

Bipartisan support has already been lined up for a bill that would renew a law adopted in 2008 that allows the Colorado Water Resources and Power Development Authority to issue bonds for certain projects related to what is often called forest health.

Ellen Roberts, a Republican from Durango, was a state representative in 2008 who was among that original bill's sponsors. Now out of the Legislature, she has been engaged in a project, the Southwest Wildfire

Impact Fund, which seeks to use that legislation to remove vegetation from forested landscapes.

The Grizzly Creek Fire closed Interstate 70 for over a month. *Photo/Holy Cross Electric Association.*

"Dense, unhealthy forests. Increasing drought. Dead trees from insect infestations. All these factors combine to increase the public safety threat of catastrophic wildfire in populated areas of Southwest Colorado, like Durango and La Plata County," the website says. "There are ways to remove or reduce the dangerous tinderbox of these fuels through forest health treatments and reduce catastrophic wildfire risk, but the region lacks a sufficiently funded, long-term, and coordinated approach to forest restoration on all lands, private or publicly owned."

After two years of trying, the project Roberts, the Colorado State Forest Service, and others envisioned in southwestern Colorado together still hasn't launched and only the first phase of the project will get done before the authority for bonding by the state's water and power authority expires. The second phase of the project may be getting started post-2023, she says.

"It's tricky," she says of the project. "It involves local government financing. It involves finding the collaborative pieces between federal and non-federal lands, identifying areas of high risks in watersheds, identifying critical values, public safety, and natural environmental concerns. It's very complicated, and it takes a lot of collaboration."

But the project, she says, should serve as a template for those in other places, as reflected in the districts of the bill's primary co-sponsors: Rep. Marc Catlin, a Republican from Montrose, and Rep. Jeni Arndt, a Democrat from Fort Collins, whose district experienced two big wildfires in 2021.

In the other chamber, Sen. John Cooke, a Republican from Greeley, and Sen. Chris Hansen, a Democrat from Denver, are also sponsors. Their districts include two major water providers, Denver Water and Northern Water.

If not a lobbyist herself, Roberts talks up the bill as resulting in rural job generation but also improved public safety, in that it will reduce the fuels for wildfire. It will also have a climate change component: younger forests absorb carbon, and wildfires create massive amounts of carbon dioxide emission.

"Fire is part of our ecosystems. We aren't trying to eliminate fire. But we are trying to manage it in a world in which more and more people are moving into the forests of Colorado. So we need to think about it differently. This bill aims at projects that are thinking outside of the box but also dealing with the reality on the ground in terms of needing to think about the forests in areas of high risk."

Wildfire, power lines

Utilities, already nervous about their liability if power lines start wildfires, were galvanized by the Camp Fire at Paradise, Calif. The fire in November 2018 caused by electrical wires in strong winds resulted in 85 deaths and $16.5 billion in damages and the bankruptcy of Pacific Gas and Electric.

The Colorado Rural Electric Association hopes to see a bill that would give the state's 22 electrical cooperatives protection from liability if they undertake mitigation efforts. The essential problem is that rights-of-way for distribution lines often were negotiated 30, 40, or even 60 years ago, says Geoffrey Hier, director for government relations for CREA.

"That may have been adequate at the time, but it is no longer adequate," says Hier. "You have property owners who aren't necessarily excited about having a utility come in and chop down trees on their property."

The proposal being shopped to legislators by Heir would give utilities permission to clear trees in 16-foot swathes along power lines, 8 feet on each side. "Under current law, we don't have the ability to address that," says Hier. "We need some way to address the identified hazards that fall outside of our rights-of-way in addition to maintaining the right of way."

The carrot-and-stick approach favored by CREA, modeled on legislation adopted last year by Utah and Missouri, would require the co-ops to submit their mitigation plans to the Public Utilities Commission. In exchange, the co-ops would get shielded from some liability if they filed plans and adhered to their mitigation plans.

Most wildfires of 2020 in Colorado occurred in the service territory of utilities, although none of the fires were caused by wires. However, managers have fretted privately about how even a small fire in the wrong place among very expensive real estate could expose them to enormous liability that could potentially bankrupt the co-op.

Utilities see a huge need for vegetative mitigation that the $88 million proposed for allocation in the state budget will hardly touch. Too, while last year was the largest ever in Colorado in terms of acres burned, this year is already shaping up to be much, much worse, given the absence of snowfall.

For background, read [Utilities and Wildfire](#).

Using Colorado purchasing power

If not the size of the federal government, Colorado's state government has considerable weight through the simple fact of its purchasing power. Some environmental groups have been saying that Colorado needs to use that purchasing power to help shift the markets.

One easy example is in transportation. There, Colorado hopes to move the needle more rapidly toward electrification by getting fleet owners to convert. Colorado, the argument goes, can help move the market itself through fleet purchases of electrified vehicles.

Just Transition funding

Legislators in 2019 created a Just Transition office, with one staff member, and a mission to deliver a final report to legislators by Dec. 31, 2020.

The office still has one employee, Wade Buchanan, the director. But the Polis budget calls for 2 additional full-time equivalents positions, for a total staffing of 3.5

Various ideas are being talked about among legislators, even if there is no specific legislation (of which I'm aware).

"It's just a down payment. It's not the money we will need for the programming and for the funding of communities," says Zach Pierce, special advisor on climate and energy to Gov. Jared Polis. "In a difficult budget year, it's a statement."

Time to slow emissions from the built environment

There will be a tremendous focus on the built environment, that attention being long overdue, in the minds of many environmental advocates.

The built environmental is No.4 on the list of emission sources in Colorado, behind transportation, electrical generation, and the oil and gas sector. The problem is that to achieve long-term goals of decarbonization will require a broad and deep effort. And unlike cars, which get swapped out every 10 or 15 years, buildings last for decades and, in the case of the house of this writer, well along on the second century (constructed 1889, and later expanded).

What you can expect, said Keith Hay, director of utility policy at the Colorado Energy Office, are proposals that fall into four buckets:

1) Modernizing and updating gas energy efficiency programs, which have not been updated since 2007. This would apply to the gas-regulated utilities: Xcel Energy, Black Hills Energy, Atmos Energy, and Colorado Natural Gas.

2) A requirement that the state's two investor-owned electrical utilities, Xcel and Black Hills, file plans with the PUC to support beneficial electrification, similar to what was required of Xcel and Black Hills for transportation, but this time for gas. Again, the idea is of incentives but softly pressing down the carbon intensity of the building sector.

3) A renewable natural gas bill proposed by State Sen. Chris Hansen in 2020 that got shelved because of covid.

4) Benchmarking of buildings.

Gas demand-side management

Most buildings in Colorado are heated by combustion of natural gas. A bill being sponsored by Rep. Tracey Bernett, Democrat from Boulder County, would require utilities to expand their energy efficiency efforts, hence reducing demand. She plans to promote it as a jobs-creation proposal, but also one that reduces greenhouse gas emissions. Methane is a powerful greenhouse gas.

"It's not shutting down gas," she said when we talked in early February. "We are still going to need gas for awhile in our buildings, especially in this colder environment. Things like heat pumps don't necessarily work well at low temperatures."

At the time of the conversation, she said the bill would include an "accounting for the external economic costs of burning fossil fuels." I've since heard that this component—essentially a carbon tax applied to methane—has been stripped from the proposal.

So, we'll see when the bill gets introduced. It's worth reviewing the thinking of Laurent Meillon of the policy committee of the Colorado Renewable Energy Society. For more than a decade, he has been

working with legislators with the hope of passing legislation that causes state regulators to review demand-side management programs through the lens of long-term gains.

It's worth emphasizing: What he wants to see and what ends up in the bill may be two very different things.

One metric that Meillon wants Colorado to adopt for evaluating demand-side management programs is how capital is treated. "$100 ten years from now is not the same as $100 now," he explains.

We all know that's true. That's why we invest money, instead of just putting it into shoeboxes or at least safe-deposit boxes.

In the case of adding insulation to an attic, though, the investment is viewed through the metric of whether the benefits outweigh the costs in the short term. Will the added insulation save money in the next two or three years?

Viewed through that short-term prism, only the lowest-hanging fruit will be seized. You will add only the minimal amount of insulation. However, if you took a long view, the amount of energy that would be saved and hence the lower cost to the consumer of the course of 30, 40 or 50 years, would be a greater cumulative return on the investment.

Benefits are less when evaluating energy efficiency programs using the weighted average cost of capital, as is now used by Xcel and regulators. If, however, regulators used something called net-present value—a way of viewing the long-term benefits—much more work in energy efficiency could be justified.

The existing system "has turned out to be unfair, inaccurate, and against clean energy and ratepayer interests," says Meillon.

Then there's the metric of the external costs of fossil fuels. We know that burning fossil fuels damages the environment and imposes costs even now on people, directly and indirectly. Colorado in the 2019 legislative session recognized this by imposing a social cost of carbon of $46 per metric ton of emissions through which state regulators evaluate generation plans by Xcel and other utilities. Meillon believes the same social cost of carbon should be applied to heating resources when decisions are made.

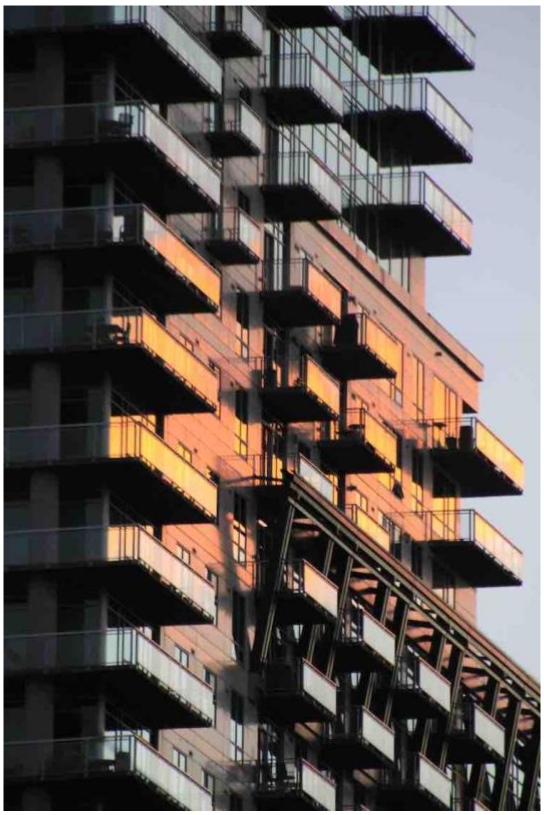
A decade ago, Meillon was working with then State Sen. Gail Schwartz with this same sweep of ideas. Last year he worked with former State Sen. Mike Foote.

He's a solar developer with a giant interest in solar thermal. Solar thermal got a bad name in the 1970s when it was introduced – and performed badly. Since then, says Meillon, solar thermal has improved and should be taken seriously. "My first car was a Fiat, and it didn't work so well, but I did not conclude that all automobiles are crap," he says.

Solar thermal has continued to struggle to get traction. The renewable portfolio standards first adopted in 2004 and updated several times since have not provided for solar thermal. They provide credits only for

production of electricity. As such, there is no financial incentive for creating solar thermal projects. Without that stimulus, solar thermal has struggled to compete against the low cost of natural gas in Colorado.

If slowly, solar thermal is making inroads. One such project is a 44-unit all-electric apartment complex in Longmont. The hot water is pre-warmed by solar.



Building benchmarks

This is one of the four pillars of the energy legislation described by Hay from the Colorado Energy Office. It would require owners of commercial buildings of more than 50,000 square (actually, there is at least one residential building of more than 50,000 square feet; it's on the outskirts of Aspen) to collect and report on energy-use benchmarking data and comply with performance standards related to energy and greenhouse gas emissions.

Denver has such a law applicable to buildings of more than 25,000 square feet. It requires tracking of energy use and sharing of that information. It serves as a way of alerting building managers to problems. If they're using far more energy than the owner of another comparably sized building, it will likely cause them to want to make changes.

This bill has the sponsorship of Representatives Cathy Kipp of Fort Collins, Alex Valdez of Denver, and Tracey Bernett of Boulder County.

The city's Climate Action website reports that buildings caused 51% of Denver's emissions. Buildings overall increased energy use 1.2% on average since 2016, but those in the benchmarking program cut use an average 0.4%. This compared to a goal of reducing energy use from buildings 30% by 2030.

The Polis administration decarbonization roadmap reports that the Colorado Energy Office is launching a commercial building benchmarking program that will enable building owners to report energy-use data to a state-wide database.

GHGs embedded in building materials

Look for a bill from Hansen along the same lines as last year's SB20-159, Global Warming Potential for Public Project Materials. That bill proposed to establish a maximum acceptable global warming amount embodied in concrete, asphalt, and other materials used in public buildings. Concrete has a heavy carbon footprint, for example. This would require designers of state buildings to consider the emissions produced in the creation of those materials and would impose a lid on those emissions.

Renewable natural gas

Hansen last session sponsored SB20-1250, Adopt Renewable Natural Gas Standard, which would have required the PUC to create a renewable natural gas standard for large natural gas utilities, those of more than 250,000 customers.

The intent is to induce harvesting of methane from dairies, sewage treatment plants, and landfills, but also at least one coal mine near Somerset in the North Fork Valley.

The bill proposed to mandate Xcel Energy to use 5% renewable natural gas by 2025 and 15% within a decade. The bill also would have required the PUC to develop renewable natural gas programs for smaller utilities and require municipal utilities to report emissions from natural gas.

Expect to see that bill return this session. The bill will specify a maximum impact to ratepayers of 2% from the projects.

Environmental groups have been somewhat skeptical. The Colorado Renewable Energy Society policy committee, for example, frets that this may delay the transition from natural gas. Hansen says he has heard concerns about double-counting but indicates that shouldn't be a problem.

See March 2020 story, "Colorado legislators take up proposals for renewable natural gas standard."

Transportation?

As mentioned previously, I have only glimpses of what this bill will look like, at least in part because it was still being shaped up well into February. It will be big.

"We are very hopeful a large transportation bill comes out of this session," said Senate Majority Leader Steve Fenberg last week.

He identified the need for multi-modal transit, as well as electrification of transportation. The upshot is that transportation should look very different in just a few years.

Electrical co-ops governance

State Rep. Judy Amabile, a Democrat from Boulder who was elected to fill the seat vacated by term-limited K.C. Becker, the former speaker of the House, has a bill that would seek to reform the governance of Colorado's 22 electrical cooperatives

Those co-ops serve 30% of electrical consumers in Colorado, and their functioning is often a mystery to those who live in co-op land.

(An aside, I lived in co-op land myself for 21 years, first in Mountain Parks and then Holy Cross Energy, with time spent in Yampa Valley Electric as well, working mostly as a newspaper reporter and editor. I can testify that the co-op business was very, very low profile. It has a higher profile now, but not among the general public. Election turnout remains far lower than for the town board, city council, and county commission elections).

Amabile, whose district expands beyond Boulder to include Grand, Gilpin and Clear Creek counties, all areas served by co-ops, says her bill would address transparency, would require disclosure of compensation, and make it easier for new members of the public to get elected to the boards of electrical cooperatives. This would, she says, also apply to Tri-State—of which 18 of Colorado's 22 cooperatives are members. (Tri-State, however, also includes members from Wyoming, Nebraska, and New Mexico).

"No other state has the kind of legislation that we are proposing, but they are looking to us so that they can do something similar," she said at an Empower Our Future forum on Feb. 11.

At issue is whether the customers should be able to get greater credit for more than 120%—how much and also how?

Fenberg explains: "The pushback from the utilities on this topic is generally that they don't want to pay the customer for the energy that is produced above and beyond what the customer uses himself.

"Currently the utility has to pay at the wholesale rate for that excess energy, and they'd like to keep it that way rather than paying at the retail rate. Some would argue that compensating at the wholesale rate is unfair because distributed solar has more value due to the avoided generation and transmission costs as well as avoided environmental externalities.

"However, with that said, the compensation rate isn't actually the crux of the issue. Their main demand is that customers shouldn't be able to roll over their excess generation credits at the end of the year. Instead, the utility wants to force the customer to take a check for those excess credits (at the wholesale rate). Currently customers can roll over credits, but the utility fears this will be a bigger threat to them if people are allowed to install larger systems on their roof."

Colorado Solar and Storage Association members say this issue of exceeding 120% hasn't been much of an issue. True, concedes Fenberg, but he sees need for even more distributed solar in the future.

"If we're trying to rapidly electrify people's homes and their cars, we need to lift this arbitrary cap. Installing a solar system based on your last year's average electricity use isn't a relevant cap once that homeowner buys an electric car and an electric heat pump," Fenberg says.

"Due to economies of scale, it's much better for that homeowner to build the system based on likely *future* electricity use

Solar and some tweaking

Expect several bills in the solar arena.

Revisiting permitting fees

Several years ago Colorado adopted a law that limited how much local jurisdictions can charge for solar permitting such as on rooftops and garages. The goal was to encourage roof-top and other solar development.

Members of the Colorado Solar and Storage Association say that many jurisdictions have figured out ways that avoid the spirit of that law. COSSA wants to see legislation that keeps local jurisdictions hewing to the spirit and avoid end-around fees and restrictions.

Lift the 120% cap?

Senate Majority Leader Steve Fenberg, a Democrat from Boulder, will introduce a bill that would remove the current cap on how much solar capacity customers of Xcel Energy and Black Hills can produce.

Existing law allows residential customers of the investor-owned utilities to get credited for solar-photovoltaic capacity up to 120% of the annual consumption of electricity by the customer. Xcel and Black Hills must credit them with the retail rate, not the wholesale rate, which is far less.

rather than *past* electricity use. Part of the state's path to reduce emissions is to electrify home heating and transportation, which means the average home will have a much larger electricity load in the future. And if we want to decarbonize that increased electric load, we want more roof-space covered by solar panels.

"Another aspect to this story is the recent Boulder/Xcel settlement. Xcel agreed to advocate for the lifting of the 120% cap in the Legislature this year as part of the settlement."

Also operative, as he said at a recent forum, is that the utilities are in the business of selling electricity. "They don't want to have to buy energy from you," he said.

Policies to drive equitable expansion of storage

Colorado remains in the infancy of energy storage. Aside from pumped-storage hydro at Cabin Creek and Mt. Elbert, the largest energy storage system in the state is a bank of Tesla Powerwall batteries behind the United Power building along Interstate 25 between Longmont and Firestone. They can store 4 megawatts for up to 4 hours.

Behind the meter, the battery capacity isn't much greater. Xcel Energy customers have 300 to 400 batteries in the Central Park neighborhood of Denver. Customers of Holy Cross Energy in the Aspen-Vail areas have more batteries, and there may be more scattered around Colorado, particularly in Boulder County.

That must change dramatically in the coming decade. As Colorado quadruples the penetration of renewable energy, it will need to increase storage capacity roughly 250-fold. "The Future of Energy Storage in Colorado," a report commissioned by the Colorado Energy Office in 2019, called for 1.1 gigawatts of storage by 2030.

"We have a long way to go, and the longer we wait, the steeper the hill to climb," says Mike Kruger, chief executive of Colorado Solar and Storage Association.

PUC guidance on storage

COSSA wants legislators to give the Public Utilities Commission specific guidance about phasing in storage.

In the past, says Kruger, the PUC has been leery of justifying storage, given its still great cost. That's understandable. But battery storage provides benefits to the grid, such as in stabilization, that need to factored into the decision-making calculus. COSSA wants legislators to help inform that decision-making process.

Kruger points to a report issued in September 2020, "The Colorado Public Utilities Commission's Operational Modernization Plan." The document points to the need for a formal, coherent policy. Options for reducing greenhouse gases from the electric sector "can appear across many proceedings, and a determination in one proceeding may affect the outcome of another proceeding," the report said.

The report cites the example of battery storage, with its potential to reduce the need for additional electric generation to meet system peak demand: "At the same time, the PUC may be called upon to make decisions regarding investments in battery storage technologies in multiple proceedings that may involve different regulated utilities that occur over a period of months or years."

Utilities are already starting to invest in batteries. Xcel Energy has awarded bids for 50 megawatts, part of its plans for 275 megawatts in Pueblo and Adams counties. And Colorado Springs Utilities has a power-purchase agreement for the Pike Solar and Battery Energy Storage Systems, which will add 25 megawatts of battery storage by December 2023 to supplement 175 megawatts of solar.

This bill falls under the heading of unfinished business. In 2018, legislators passed a law, HB 18-1270, Public Utilities Commission Evaluation of Energy Storage Systems. The law required the PUC to establish mechanisms for investor-owned electric utilities to procure energy storage systems if certain criteria are satisfied.

COSSA members believe there has been too little movement. Details of exactly what will be proposed were still being worked over in stakeholder outreach in late January. What drives the legislation, though, is a sense of urgency, a desire to make things happen quickly, to decarbonize the economy 50% by 2030.

"We have 8 years and 11 months. We can't have proceedings in which the stakeholder process takes years before we even get to a proposal. We have to move faster," says Kruger.

Rules for behind-the-meter storage

Colorado Solar and Storage Association wants to see rules laid down for behind-the-meter storage. It's still a frontier, when relatively few homes or buildings have battery storage.

Working with the Colorado Municipal League and Colorado Counties Inc., COSSA hopes to come up with state regulations to ensure the spirit of legislation is honored by counties and municipalities. "If the Legislature says it should be $500," says Kruger of fees. "That means it shouldn't be $500 plus X, Y and Z."

Somewhat related in the battery question is where they will be deployed. Will battery storage remain the province of higher-end homes, or will batteries also be part of the lower-income neighborhoods, too?

Colorado legislators in 2019 inserted provisions in several laws designed to ensure that equity is a consideration in energy transition decisions. In the past, those of lower incomes, who tend to be racial minorities, have tended to suffer disproportionate impacts of the fossil fuel-based economy. The intent is to avoid repeating mistakes of the past. Battery storage is one place for this consideration.

COSSA would like to see legislators give the PUC guidance to ensure that equity is a consideration in battery storage programs.

Office of Consumer Counsel

As required by state law, the Office of Consumer Counsel must be reauthorized by statute in this session, if it is to continue to exist.

In 2019, legislators chose to reauthorize the PUC by substantially expanding its purview and mission. It's possible legislators may do so this year with the Office of Consumer Council. For example, legislators could give much more direction in advocacy for low-income populations in the coming energy transition.

Electrical transmission

This is the bailiwick of State Sen. Chris Hansen, a Democrat from Denver who grew up amid the steady winds of the Great Plains before going off to college and eventually getting a Ph.D. in economic geography from Oxford University

In a sense, he'll return to his roots this session with three bills that in various ways would help advance development of wind resources in eastern Colorado. But all three components of the bill he has prepared have the word "regional" embedded or implied in their text

Senate Majority Leader Steve Fenberg calls transmission "one of the missing pieces of getting renewables to customers, especially from areas that are traditionally under-represented and don't have a lot of economic opportunities."

Streamline PUC permitting

One component would streamline permitting and rules at the state's Public Utility Commission for new transmission projects. Regulators, Hansen says, need to acknowledge regional benefits when evaluating projects. The bill is a revision of Hansen's bill from last year, SB20-190, Boost Renewable Energy Transmission Investment.

Transmission authority

A second component would create a transmission authority, which New Mexico already has. The transmission authority's mission would be to help coordinate development of transmission needed to develop currently stranded renewable assets.

One such area is Bent County, in southeastern Colorado. Studies by the National Renewable Energy Laboratory have found that this county snuggled against the Kansas and Oklahoma borders has some of the steadiest wind in the country. Trucks constantly cross the county on Highway 287 on their way to Denver and other destinations, but no such wire highway exists to get wind-generated electricity from farms to urban markets.

See, [“Windy enough in Dust Bowl land.”]

Xcel Energy and Tri-State Generation and Transmission both operate in eastern Colorado, and both have built transmission lines and have plans for upgrade. But the movement has been slower than what Hansen says Colorado needs to execute its energy transformation.

Hansen believes he has a strong argument because there’s something in it for everybody, but especially consumers. Accessing the renewable resources in the state will result in lower rates. Improved transmission should also result in more jobs. “We need to maximize job growth and clean energy, and that is dependent on a robust transmission grid,” he says.

Pushing an RTO

A third component would seek to accelerate integration of Colorado utilities with utilities in other states. Colorado is currently something of an island. It’s connected by electric lines to other states, but not particularly well. There’s been talk and study for four years or more. All utilities say they want this, but action has been lagging. Hansen wants to hurry this along.

The first modest step occurred on Feb. 1 with launch of the energy imbalance market by the Arkansas-based Southwest Power Pool. Colorado participants include Tri-State Generation and Transmission and the Western Area Power Authority. Xcel Energy and three utility partners along the Front Range will begin an imbalance market next year, but that one is conducted by the California Independent System Operator, or CAISO.

The real prize will be creation of a regional transmission organization or RTO, with more tools (and investment) to allow better movement of electrons across broad distances to align with demands. For a deeper dive, see Feb. 12 story, “Why this electric market matters for Colorado decarbonization.”

Hansen professes to see advantages whether going eastward or westward. He does, however, see Colorado’s wind resources contouring wonderfully with the solar resources of Arizona and other Southwestern states

“My observation is that every power operator in the state is supportive of more grid integration, but some are more excited about it than others,” he says

Describing it as a “slam-dunk economic case,” Hansen says he does not expect substantial opposition. A Republican legislator, whom he has not identified, will co-sponsor the bill

This integration must be pushed firmly, he says. If Colorado does end up with what is called a seam, a division within the state, with parts going east and some parts going west., then it must be done in a way that does not harm ratepayers. Examples of both success and failure when seams divide states or regions can be found in other parts of the country.

Changes to give the PUC commissioners more tools

Look for a bill from Sen. Chris Hansen that will seek to modernize the Public Utilities Commission and revise budgeting, giving commissioners more resources and more direct control over staff members.

“We have a PUC that is not well positioned to implement all of the important work that is ahead of us. (The commissioners) need better resources to do their work,” says Hansen.

The PUC is currently embedded within the Department of Regulatory Agencies, and the staff members are answerable to the department director, Doug Dean. Hansen’s legislation would make the staff members, at least some of them, directly answerable to PUC commissioners. The bill would also expand the staff to reflect the increasing workload of PUC commissioners in a time of unprecedented shifts in the world of electricity and, quite likely in the decade ahead, natural gas.

The move has the support of the Colorado Solar and Storage Association. Mike Kruger, the executive director of COSSA, says there needs to be a direct link between the staff member and commissioners given that the commissioners are "responsible for a huge chunk of our decarbonization."

Kruger also points out to the statutory ban of commissioners meeting in private. All of their interaction is in public meetings. Aside from very specific and narrow proceedings, they meet only weekly. That limited meeting schedule can result in three weeks or a month to make a relatively simple decision about forward movement.

"Given that complication, you definitely need to have a staff that provides the commissioners what they need to make decisions," Kruger says. "From our perspective, the 2020s will be the decade of deployment for solar and batteries. We will go from around 20% renewable generation to around 80%, a four-fold increase over 9 years. And the PUC is going to guide and direct that. They need to know they are getting the best information and results from their staff."

PUC processes have often been drawn out. But there's a sense of urgency about figuring out the way forward reflected in the admonishment by Eric Blank in his first weekly meeting in January as the PUC chairman. Studies can't take a year or more, he said, but timelines demand a quicker pulse.

Another shot at Community Choice Energy

Rep. Edie Hooton, a Democrat from Boulder, will return this session with her proposal to study community choice energy, also known as community choice aggregation.

The goal of community choice is to accelerate the transition to clean electrical generation by allowing individual communities currently served by Xcel Energy and Black Hills Energy, the state's two investor-owned utilities, to procure their electricity directly from providers. Those two utilities would still service the distribution lines. Together, Xcel and Black Hills were responsible for 56% of electrical sales in Colorado in 2018, according to a study by the Colorado Energy Office

"Introducing competition into the wholesale electricity sector would encourage a more vibrant wholesale electricity market in Colorado, from which many co-ops and municipal utilities purchase all or part of their electricity," she writes. "Competition tends to put downward pressure on prices, as well as pressure to increase the renewable energy content in the energy mix.

Hooton also sees this helping other electrical consumers. A more vibrant wholesale market for clean energy "would likely expand the number of independent power producers and power marketers that are active in Colorado, leading to lower wholesale prices and more opportunities for all buyers, including co-ops and municipal utilities."

The Colorado Municipal League supports the study, as does the Sierra Club, whose "ready for 100" yielded voluntary participation by 14 Colorado communities that formally want to achieve 100% renewable energy between 2025 and 2035. The measure is also supported by Colorado Communities for Climate Action, or CC4CA, which has 34 member communities in Colorado, evenly split between the Front Range and Western Slope. City councils for Denver, Pueblo, Boulder, Golden, and Lafayette have also adopted resolutions of support.

California is the poster child for the effectiveness of pushing clean electrical generation. There, communities authorized to use community choice have entered into long-term contracts for 6,000 megawatts of new-build clean energy sources. There, it's common for multiple cities and/or counties to form joint power authorities to share administration and combine their purchasing power, governed by a board of elected officials from each member jurisdiction.

A study by the UCLA Luskin Center for Innovation found that nearly 50 communities in California have already reached their 100% renewable energy goals, and the vast majority of them have community choice.

In theory, communities could choose to procure electricity from 100% carbon sources. That's unlikely, given that renewables have become so much cheaper.

Hooton's bill—which is co-sponsored by Rep. Cathy Kipp, a Democrat from Fort Collins—would only authorize a study by the Colorado Public Utilities Commission staff between October 2021 and November 2022. The bill authorizes one full-time employee to the study, the money $112,000 spread across two years – to be taken from the Fixed Utility Fund, the surcharge on ratepayer bills that funds the PUC.

If the PUC study looked promising, says Hooton, she would consider sponsoring enabling legislation in the 2023 legislation session. This bill, she emphasizes, only authorizes a study.

Inherent in this study is the potential for gains. She points to a request from Boulder last year for indicative pricing from wholesale suppliers. The city in August received 11 responses that together indicated the city could have 89% renewable energy in 2024 at two-thirds the project cost of Xcel.

She also contends this would add pressure to form a regional transmission organization, or RTO, which would lower costs by expanding the footprint of energy trading in the West and by reducing the needed level of reserve generating capacity.

One thing the study—if approved by legislators—would have to address is what real difference this will make in the latter half of the 2020s, when Black Hills and Xcel are rapidly decarbonizing their electric supplies.

Tools for the Air Quality Control Commission?

This was the agency delegated by the 2019 foundational legislation with the largest single authority for devising and executing strategies for achieving the economy-wide decarbonization goals. Elements were also given to the Public Utilities Commission, with it authority for overseeing the decarbonization of the electrical sector and also regulated gas utilities. But the AQCC is numero uno, dai-ichi, number 1.

Does the AQCC have the resources it needs to get the job done? This was a thread in AQCC conversations for much of 2020. Environmental organizations, Western Resource Advocates and the Environmental Defense Fund in particular, argued that the AQCC was moving too slowly. The AQCC personnel, particularly John Putnam, the then-director of environmental programs for the Colorado Department of Public Health and Environment, politely pointed to lack of adequate resources.

I heard that legislators are working to secure more resources for the Air Pollution Control Division, the agency within CDPH&E that works directly with the appointed commission. I was told that Sen. Dominique Jackson was writing the bill. I did not get a response from her.

The question of the AQCC was raised more broadly at the Empowering our Future forum. Senate Majority Leader Steve Fenberg took the question and addressed it broadly, if not in the particulars.

“We got a slow start,” he said. “I think it will accelerate. We are going to start taking a significant bite of the apple in the next few years, tackling our transportation system. And electrifying as much as possible will have a huge impact. Xcel Energy is just about to file their electric resource plan (update: Xcel will release details on Thursday, Feb. 18) that will show there is a lot more of where they think they are capable of going in the next couple of years. Things are happening, and they’re happening pretty fast.”

Among the questions before the AQCC in late 2021 will be whether to approve the request for Earthjustice and the National Parks Conservation Association to order to accelerate the retirement of coal plants. All but two are scheduled to close by 2030, but the environmental organizations wanted the AQCC to nudge the retirements up a year, to 2028. The AQCC approved that by a 5-2 vote then, the next month, unanimously backtracked for legal procedural reasons, whose intricacies I never understood. Xcel Energy then preempted this by announcing the closure of the Hayden units in 2028.

Could the PUC have the authority to instead order earlier retirements? That was hinted at by State Rep. Edie Hooton, who spoke at the Empowering Our Future forum about adjusting retirements to meet the 2025 decarbonization target of 2026. “There was consideration,” she said. “I don’t know if it will happen this year, not because of will, but because of capacity,” she said.

Divestment policies

Rep. Emily Sirota, a Democrat from Denver, will be carrying legislation again, as she did with her HB 19-1270, to require the Colorado Public Employees’ Retirement Association to review its $45 billion in holdings through the lens of climate change, specifically fossil fuels.

That bill didn’t make it out of committee. Since then, however, New York state’s comparable fund dido go ahead with a gradual divestment strategy in December.

350 Colorado also hopes to find a sponsor for a bill that would allow cities, counties, and other jurisdictions to hold investments in financial institutions that are not FDIC insure. This would allow jurisdictions to avoid the megabanks like Wells Fargo and Chase Morgan, who are FDIC insured and who also invest in fossil fuels.

The Colorado Public Banking Coalition makes no mention of divestment but instead paints a broader picture of rising interest in public banking since the 2008 financial crash. “Currently, over half of the states in the United States have either organized, conducted research, or introduced legislation to promote public banking,” says the coalition.

Regulation of oil and gas industry, don’t expect much

Don’t look for much here. Senate Majority Leader Steve Fenberg was a primary sponsor of SB19-181, which he describes as the most substantial reform of oil and gas regulation in Colorado in 60 years.

“I think we forget how much that did tackle, because it did so much at once,” he says. The law basically turned Colorado regulation upside down, inverting the mission of regulation to support extraction to instead emphasize community protection values.

It created basic standards for jurisdictions across Colorado, including a minimum setback of 2,000 feet (with some exceptions), while leaving latitude for local jurisdictions to create regulations that are right for them.

What about stopping “fracking?” he was asked at a recent forum, the word fracking being apparently meant to mean drilling for oil and gas altogether.

No, that wasn’t the intention of the 2019 law, he said. And what used to be considered the major players in Colorado have disappeared as a result of acquisitions and mergers. “I think the Wild West days of fracking in Colorado are not over, but they will be soon,” he said. He also noted that the market for Colorado oil and gas extends beyond Colorado, so the demand depends upon national policies.