# Jesse Kline: Don't worry Alberta, freezing in the dark will become normal

*Province's emergency alert to conserve power only the beginning*

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PHOTO BY LEAH HENNEL/CALGARY HERALD

## Article content

Alberta's unprecedented emergency alert over the weekend warning residents to reduce power consumption or face rolling blackouts as temperatures dropped below -45 C in parts of the province offers a taste of what's to come if Ottawa pushes ahead with its net-zero timeline.

Demand for electricity in the province reached an all-time high on Thursday, but supply was able to keep pace until a cold weather system that gripped much of western North America led to a confluence of events that threatened to destabilize the grid.

On Friday, wind generation ground to a halt due to a lack of wind and frigid temperatures, which makes wind turbines unsafe to operate. Neighbouring British Columbia, Saskatchewan and Montana were also in a deep freeze, which limited their ability to export power. A couple thermal generators shut down due to the weather and mechanical issues, while two gas-fired power plants also went offline due to maintenance and weather-related issues.

As a result, the Alberta Electric System Operator (AESO) issued four alerts over four days. The greatest threat occurred on Saturday evening, which prompted the Alberta Emergency Management Agency to send an alert asking residents to conserve power by turning off lights,

cooking with microwaves instead of electric ovens, powering down space heaters, using battery-powered laptops and unplugging electric vehicles.

Albertans pulled through, reportedly reducing the load by around 200 megawatts within minutes. But in an era in which everything from cars to stoves to furnaces run on electricity, asking an entire province to turn out the lights and stop charging devices is not a great solution.

The good news is that the series of events that occurred over the weekend are unlikely to happen all that often, and a number of new gas generators expected to come online later this year should provide more reliable base-load power in the medium term.

The bad news is that federal regulations designed to electrify transportation and home heating, coupled with clean electricity regulations intended to phase out fossil-fuel generation, will exacerbate the problem in the coming years.

Alberta currently has relatively few electric vehicles on the road, with EVs constituting just 3.5 per cent of new vehicle registrations in 2022. Yet the federal government will require 20 per cent of new vehicles to be electric by 2026, increasing to 60 per cent by the end of the decade and 100 per cent in 2035.

The AESO's latest "Long-term Outlook," released in 2021, predicted that by 2041, Alberta will see between 200,000 and two-million EVs hit the road. Given the federal mandate, it's likely that the upper end of that estimate will prove more realistic. And if you think electricity demand is high now, just you wait: plugging in two-millions cars would draw twice as much power as the entire city of Calgary.

But cars and trucks are only part of the equation. The federal carbon tax, which is set to more than double by 2030, coupled with subsidies for green retrofits, will see more Albertans switching away from gas furnaces, water heaters, dryers and stoves — all of which will put further strain on the electrical grid, especially during cold snaps, when heat pumps have to work overtime (if they work at all).

At the same time, the federal government is trying to strong-arm the provinces into decarbonizing their grids by 2035 — just in time for the mass influx of power-hungry EVs. Alberta Premier Danielle Smith has promised to fight Ottawa's net-zero electricity regulations and there's no guarantee the Liberals will be in power long enough to see them through. But the uncertainty the Liberals have created will undoubtedly reduce investment in new gas plants, leaving provinces like Alberta to scramble for new sources of base-load power to handle the coming spike in demand.

Options do exist, but it will take a huge amount of private investment or government funds to replace existing coal and natural gas generators, which constituted over 80 per cent of Alberta's energy mix in 2022, or implement costly carbon capture systems, while vastly increasing generating capacity.

On Monday, Alberta-based Capital Power Corp. announced an agreement with Ontario Power Generation to "jointly assess the development and deployment of grid-scale small modular (nuclear) reactors" in the province. If they deem them to be viable, the province's first reactor could be operational by 2035.

But that's a big if, given that the technology is very much in its infancy and the province would have to create a whole new regulatory regime to deal with it. And even if it did come to fruition, Alberta would need many more to charge all the EVs expected to be on the road.

Other technologies, such as grid-scale batteries and pump-storage hydroelectricity, can also be used to provide base-load power by storing excess energy produced from wind and solar. Alberta currently only has a handful of battery storage facilities and will need many more if it hopes to supply sufficient power to the grid during peak times.

But that would mean vastly increasing its clean energy production, which is hampered by the government's moratorium on new green energy projects and limited by short days during wintertime and the fact that wind turbines can't operate below -30 C. And then there's the issue of batteries only being able to supply the grid for short periods of time.

None of these problems are insurmountable, but they will be costly, as electricity prices will have to be high enough to attract investment in nuclear, renewables and energy-storage facilities. They will also take time, which is not something Ottawa seems all that interested in providing.

It's highly unlikely that a power grid that's so reliant on fossil fuels will be able to achieve net zero in just over a decade, while supplying enough electricity to power a fleet of new EVs and electric appliances. So get ready for phones blaring directives to turn out the lights, and cold nights without any power.

After Prime Minister Pierre Trudeau implemented the National Energy Program in the early 1980s, it was common to see bumper stickers in Alberta reading, "Let the Eastern Bastards Freeze in the Dark." It seems as though Trudeau the younger is intent on enacting his revenge — ensuring westerners will be the ones freezing in the dark.