ChatGPT's Answers to Probing Questions asked in June, 2025 about the Impact Canadian Forest Fires are having on Climate and Issues Arising from Prime Minister Carney's First Meeting with Canadian Premiers

Question to ChatGPT posed by Paul George OBC, Action in Time Director

Are the massive fires across the north of Canada and boreal forests releasing untold millions of tons of carbon dioxide into the air and pushing us past climate tipping points faster than scientists had imagined?

ChatGPT Answer

Yes, the massive wildfires in northern Canada and across boreal (arboreal) forests are deeply concerning, not only for their immediate impact but for what they represent in the broader climate system. These forests—spanning Alaska, Canada, Russia, and Scandinavia—are among the planet's largest carbon sinks, storing immense amounts of carbon in trees and, critically, in their peat-rich soils. When they burn:

- Carbon is released in staggering quantities—millions of tons per fire season—further accelerating climate change.
- Permafrost melts faster, releasing methane, a much more potent greenhouse gas than CO₂.
- **Tipping points edge closer**, such as the dieback of Arctic ecosystems and loss of albedo (reflective snow and ice), causing more heat absorption.
- Feedback loops intensify, as warmer temperatures lead to drier forests, leading to more warming.

In recent years, especially since around 2019, fire seasons in boreal zones have grown dramatically worse. In 2023 alone, Canadian wildfires released more than **1.5 billion tons of CO**₂—about **double** the country's usual *entire* annual emissions. This is far beyond what scientists anticipated even just a decade ago.

These fires signal that the Earth's natural systems—once buffers against human-caused emissions—are now becoming *sources* of emissions themselves. It's not just a symptom of the climate crisis anymore, but an *accelerant*. (emphasis added by Paul George)

If you'd like, I can show updated data on current fire activity or tipping point thresholds being approached.

The 2025 wildfire season in Canada has escalated rapidly, with significant impacts on both the environment and public health.

Question to ChatGPT - Paul George

Yes, show updated data of current fire activities and tipping point thresholds.

ChatGPT Answer

🔥 Current Wildfire Situation (as of June 1, 2025)

- Active Fires: Approximately 187 wildfires are burning across Canada, with 97 classified as "out of control". (Anadolu Ajansı)
- Evacuations: Over 26,000 residents have been evacuated from Manitoba, Saskatchewan, and Alberta due to the advancing fires .(Anadolu Ajansı)
- Manitoba's Crisis: Manitoba is experiencing an unprecedented wildfire crisis, with large-scale fires affecting all regions of the province. Premier Wab Kinew emphasized the severity of the situation, noting that this scale of wildfire activity is unprecedented in Manitoba's history. The crisis has prompted the evacuation of 17,000 residents as the fires continue to spread .(The Economic Times)
- Air Quality Concerns: Smoke from the Canadian wildfires has drifted into the United States, affecting air quality across much of the country. Satellite imagery shows smoke spiraling around a storm system in the East, with air quality deteriorating significantly, especially in the Plains and Upper Midwest. Air quality index (AQI) readings in some U.S. communities have reached hazardous levels between 200 and 400, prompting alerts and health advisories .(New York Post)

🌍 Environmental and Climate Impacts

- Carbon Emissions: While specific data for 2025 is still being compiled, the 2023 Canadian wildfires released approximately 647 teragrams of carbon (equivalent to about 2.4 gigatons of CO₂), comparable to the annual fossil fuel emissions of large nations .(Nature)
- Boreal Forests at Risk: The majority of carbon emissions from boreal fires—over 80%—comes from soils rather than trees. This underscores the significant impact of wildfires on carbon release from these ecosystems .(Woodwell Climate)
- Feedback Loops: The increasing frequency and intensity of wildfires contribute to a feedback loop, where carbon emissions from fires lead to further global heating, causing more fires .(The Guardian)

Looking Ahead

The current wildfire situation in Canada is a stark reminder of the escalating impacts of climate change. As the fire season progresses, continued monitoring and proactive measures are essential to mitigate environmental damage and protect public health.

For real-time updates and air quality information, you can refer to the Canadian Wildland Fire Information System.

Question to ChatGPT - Paul George

Isn't working on mitigation and how to better fight the fires just like putting a band-aid on a metastasized cancer? Wouldn't it be more important to end any more production and decrease our emissions of fossil fuels, including the emissions from the fossil fuels we send to other places to be burnt, and concentrate on fast-tracking to reality the renewable energy, caron-free or carbonreduced economy?

ChatGPT Answer

You're absolutely right to raise this point, and many climate scientists, policy experts, and environmental groups argue exactly what you're saying: addressing the root causes of climate change—primarily fossil fuel use—is essential, and failure to do so renders firefighting and emergency measures insufficient in the long run.

Here's the key tension:



Fire Mitigation Is Necessary, But Not Sufficient

Emergency responses—like evacuations, water bombers, military support, and firebreaks—are critical for immediate public safety. They're the equivalent of triage. But you're right: they're also symptomatic treatment. Wildfires in Canada are now starting earlier, burning longer, and spreading faster. And science is very clear: climate change is a major accelerant.

The Core Issue: Continued Fossil Fuel Expansion

At the same time as leaders are fast-tracking infrastructure projects to "boost development," many of those projects still involve:

- Pipelines for oil and gas
- Export terminals for liquefied natural gas (LNG)
- New mining operations that may require diesel-powered machinery and roads through carbon-rich ecosystems

And while some leaders frame this as a path to "energy transition," others see it as doubling down on a system that's already destabilizing ecosystems and public safety.



Exported Emissions Still Count

Canada often touts its relatively small share of global emissions, but we are one of the largest exporters of fossil fuels. The emissions from those exported fuels (Scope 3 emissions) don't count toward our national totals, yet they directly contribute to the global warming driving fires, floods, and droughts.

This accounting trick masks the true climate impact of Canadian energy policy.

Fast-Tracking the Energy Transition

If the same urgency behind pipelines and ports were applied to:

- Grid upgrades for renewables
- · Community-based solar and wind power
- National building retrofits
- Scaling green hydrogen
- Public transit expansion
- Just transition for fossil fuel workers

...we'd be accelerating not only disaster resilience but also emissions reductions and a more just, livable future.

So, To Your Point:

Yes—just fighting the fires while expanding fossil fuel infrastructure is like applying a band-aid to a spreading cancer. It helps in the moment but ultimately misses the bigger disease. What's needed is a systems-level shift in policy that sees climate mitigation not as an add-on, but as the central organizing principle of economic development.

(emphasis added by Paul George)

Would you like a concise summary of how Canada could realistically fast-track a zero-emission energy transition?

Question to ChatGPT - Paul George

Yes, I would like that info.

ChatGPT Answer:

Great — here's a concise but comprehensive overview of how **Canada could fast-track a transition to a zero-emissions energy economy**, built on realism, justice, and speed:

Canada's Fast-Track Path to a Zero-Emission Economy

1. \neq Electrify Everything (With Clean Power)

Canada's electricity grid is already ~83% non-emitting, thanks to hydro and nuclear. The goal: **100% clean power by 2035**, as promised—but actually delivered.

- Rapidly expand renewables: Wind, solar, geothermal—especially in Alberta, Saskatchewan, and Atlantic Canada.
- Modernize the grid: Add storage (e.g., batteries, pumped hydro), build east-west transmission lines, and enable decentralized energy (like rooftop solar and community wind).
- Phase out gas power plants: Don't build new ones. Retire or retrofit existing ones with clean alternatives.

2. Massive Efficiency and Building Retrofits

Buildings use ~17% of Canada's energy and produce ~12% of emissions.

- Retrofit all buildings by 2040: Launch a national Deep Retrofit Mission—new insulation, windows, electrification (heat pumps, induction stoves).
- Ban gas hookups in new construction starting now.
- Use public buildings (schools, hospitals, libraries) as the backbone of retrofit workforce training and demonstration.

3. A Decarbonize Transportation

Transport is Canada's **second-largest source of emissions**.

- Electrify all new car/truck sales by 2035—and accelerate that target with incentives, ZEV mandates, and charging infrastructure.
- Electrify transit fleets and dramatically expand service.
- Build high-speed rail corridors in densely populated regions (e.g., Windsor-Quebec City).
- Invest in walkable cities: Mixed zoning, safe cycling, public transit-first policies.

4. I Stop New Fossil Fuel Expansion

This is the hardest politically, but the most critical.

- End new fossil fuel exploration and infrastructure approvals now (pipelines, LNG terminals, oil sands expansion).
- Wind down production by 2035–2050 on a planned schedule.
- No more fossil fuel subsidies (direct or indirect).
- Tax exported fossil fuel profits and reinvest into clean energy and transition plans.

5. 👷 Just Transition for Workers and Communities

No one gets left behind.

- Job guarantees, retraining programs, union-led transition centers.
- Target clean energy investment in rural, Indigenous, and fossil-fuel-reliant communities.
- Build public ownership or cooperative models where profits stay local.

6. Frotect Carbon Sinks and Restore Nature

Wildfires, peatland destruction, and deforestation release enormous carbon.

- Ban old-growth logging, especially in B.C. and boreal regions.
- Pay Indigenous nations and local stewards to protect forests, wetlands, and grasslands.
- Invest in large-scale ecological restoration to buffer climate impacts and absorb carbon.

7. Regulate and Measure the Whole System

- Include exported emissions in Canada's carbon accounting.
- Carbon pricing should stay, but needs to rise predictably and be paired with rebates.
- Regulate methane, industrial emissions, and agricultural practices with sector-by-sector plans.

X Timeline Snapshot

Goal	Target Year
100% Clean Power	2035
All New Vehicles Zero-Emission	n 2035
Net-Zero Buildings	2040
No New Fossil Infrastructure	Now
Fully Decarbonized Economy	2050 (at the latest)

Final Thought

This isn't a utopian wish list—it's a **feasible roadmap** with real policy tools. What's missing is the **political will** to shift from a fossil-fueled growth model to one that **builds prosperity within planetary boundaries**.

Would you like this as a visual roadmap or printable PDF summary?

Response by Paul George:

Yes, please provide a printable PDF summary.

ChatGPT Answer:

Here are your resources:

Printable PDF Summary:

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☑ Visual Roadmap (Timeline Image):

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When is the Saskatoon meeting of all the Premiers of Canada with Prime Minister Carney to flesh out how to fast-track development and how that relates to the fires in the northern part of Saskatchewan and Manitoba?

ChatGPT Answer

The meeting between Prime Minister Mark Carney and Canada's premiers is scheduled for **Monday, June 2, 2025**, in Saskatoon. (<u>Barrie 360</u>)

The agenda includes discussions on fast-tracking major infrastructure projects—such as ports, pipelines, and critical mineral mining—to bolster the economy amid ongoing trade tensions with the U.S. This initiative is particularly pertinent given the severe wildfires affecting northern Saskatchewan and Manitoba, which have led to the evacuation of thousands and strained emergency resources. (Vernon Matters, AP News)

While the meeting's primary focus is on economic development, the current wildfire crisis underscores the urgency of enhancing infrastructure and emergency response capabilities in vulnerable regions. Prime Minister Carney has convened the Incident Response Group to coordinate federal support, including deploying the Canadian Armed Forces for air evacuations and collaborating with the Canadian Red Cross to assist affected communities. (Prime Minister Canada)

The outcomes of this meeting are expected to influence both immediate disaster response efforts and long-term strategies for national development and resilience.

- AP News
- AP News
- Reuters

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(8) Timeline Snapshot

Target Year
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- font size increased by Paul George for emphasis

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Question to ChatGPT - Paul George

It seems the Premier of Alberta, Daniel Smith, is a stumbling block in Canada moving forward with a much better climate plan that will do the job needed to avert real catastrophe. How can Prime Minister Mike Carney mitigate the problem related to Daniel Smith, her attitude, her touting of the possibility of becoming an independent nation or a 51st state of the United States?

ChatGPT Answer

You're touching on one of the **most complex political challenges** in Canada's climate and national unity landscape: **Alberta's resistance—under Premier Danielle Smith—to federal climate leadership**, and what Prime Minister Mark Carney can realistically do to **both assert national climate goals and maintain federal cohesion**.

Here's a breakdown of the problem, and then some possible strategic pathways:



1. Oil Sands Dependence

Alberta's economy is still deeply tied to oil and gas. The province sees climate regulations as a **direct threat to jobs**, **investment**, **and provincial revenues**, even as clean energy grows.

2. Danielle Smith's Ideological Position

Smith has:

- Threatened to invoke the Sovereignty Act to resist federal regulations.
- Floated Alberta independence or joining the U.S. (though rhetorically).
- Framed Ottawa as hostile to Alberta's prosperity and autonomy.
- Downplayed or dismissed the urgency of deep emissions cuts.

3. Populist Messaging and Media Echo Chamber

Smith leverages populist distrust of federal authority, urban elites, and climate science to build a narrative of "Alberta versus the world."

STRATEGIC OPTIONS FOR PRIME MINISTER CARNEY

1. Assert Federal Jurisdiction, But Wisely

Carney can:

- Uphold national carbon pricing (which the Supreme Court has already validated as federal jurisdiction).
- Enforce clean electricity regulations by 2035, even if Alberta resists (again, a federal domain).
- Use federal power sparingly, but clearly, to **set national standards**.

Risk: Aggressive federal action can provoke backlash and feed Smith's separatist rhetoric.

2. Economic Realpolitik: Make the Transition Irresistible

Use **incentives and investment** to shift the narrative from loss to opportunity:

- Offer Alberta preferential access to federal transition funds.
- Support clean tech hubs in Calgary and Edmonton (e.g., hydrogen, carbon capture, geothermal).
- Focus on job guarantees and retraining for fossil fuel workers.
- Create Indigenous-led energy projects in Alberta.
- ★ Goal: Make climate action an economic win for Alberta, not a loss.

3. Sempower Local Leaders Within Alberta

- Work with mayors (e.g., Edmonton's Amarjeet Sohi, a former federal minister) and Indigenous leadership.
- Partner with industry players already pivoting to clean tech (e.g., some oil majors investing in hydrogen and carbon management).
- Amplify Albertan voices who support transition, like clean energy entrepreneurs and farmers affected by climate change.
- This undercuts the "Ottawa vs. Alberta" narrative.

4. @ Call the Bluff on Separation

Smith's talk of independence or U.S. statehood is largely rhetorical. Alberta:

- Uses the Canadian dollar.
- Relies on equalization mechanisms.
- Depends on federal infrastructure (military, RCMP, pensions).

Carney could:

- Avoid direct confrontation but publicly emphasize the costs of separation.
- Highlight the benefits of federation: trade, healthcare funding, disaster relief.
- 📌 Let Albertans themselves reject the high cost of isolation.

5. A Lead a National Conversation—Reframe the Debate

Carney, as a former Bank of Canada and Bank of England governor, can:

- Use his economic gravitas to frame climate policy as long-term economic policy.
- Host national climate roundtables that include provinces, Indigenous leaders, business, and labor.
- Show humility and confidence—inviting collaboration, not dictating orders.
- 📌 Tone matters—especially in provinces feeling alienated.

CONCLUSION

Danielle Smith is **not just a policy opponent—she's a populist disruptor**. The solution isn't purely legal or political; it's **narrative**, **economic**, **and strategic**.

Mark Carney must:

• Stand firm federally where the law and science are clear,

- Invest strategically in Alberta's future, and
- Undermine separatist rhetoric with facts, inclusion, and opportunity.

ChatGPT:

Would you like this turned into a 1-page strategy memo or political risk briefing format?

Paul George Answer:

Yes, I would like a strategy memo and a political risk briefing. Could you also add an analysis of the problem related to pursuing carbon capture and storage? I've heard that the technologies simply don't exist, or they're too expense and cannot be done at a scale necessary to provide any kind of real solution. Therefore, it's far better to invest the money instead of into carbon capture and storage, into renewable energy production and energy conservation.

ChatGPT Answer and Question:

I can provide the full content of the strategy memo and political risk briefing directly here in plain text so you can copy, save, or print it manually. Would you like that?

Paul George Answer: Yes to the strategy memo and political risk briefing.

ChatGPT Response:

Great — here's the full **Strategy Memo**, **Political Risk Briefing**, and **Critical Analysis of Carbon Capture and Storage (CCS)**.

STRATEGY MEMO: Alberta and Federal Climate Policy

To: Prime Minister Mark Carney **From:** Climate Strategy Advisory

Date: June 2025

Subject: Managing Alberta's Resistance to Climate Policy and Mitigating Political Risk

OVERVIEW

Premier Danielle Smith represents a formidable obstacle to the federal government's climate ambitions. Her advocacy for Alberta's oil and gas sector, resistance to net-zero mandates, and secessionist rhetoric have elevated tensions between Ottawa and Edmonton. Alberta's economy remains heavily dependent on fossil fuels, and Smith capitalizes on populist narratives of federal overreach and Eastern elitism.

STRATEGIC OBJECTIVES FOR THE FEDERAL GOVERNMENT

1. Assert Federal Jurisdiction — Selectively

- 0 Uphold carbon pricing and 2035 clean electricity regulations (validated by the Supreme Court).
- O Avoid overreach that feeds into Smith's sovereignty narrative.

2. Make the Transition a Win for Alberta

- O Prioritize Alberta for clean energy investment (hydrogen, geothermal, renewables).
- O Guarantee training and jobs for oil patch workers.
- O Promote Indigenous-led energy development.

3. Empower Local Pro-Climate Leadership

- O Support municipal leaders (e.g., Calgary and Edmonton mayors).
- o Fund regional climate hubs to amplify progressive voices.

4. Use Economic Messaging, Not Just Moral Framing

- o Frame climate action as national economic modernization, not just environmental duty.
- Emphasize global competitiveness and future-proofing Alberta's economy.

5. Contain Secessionist Threats Through Facts and Transparency

- O Publicly highlight the real economic and constitutional costs of separation.
- O Engage the public directly with town halls and open forums in Alberta.



Risk Level:

- Short-term: HIGH (due to potential backlash, regulatory defiance, or legal challenges).
- Medium-to-Long-Term: MODERATE, with a proactive economic and diplomatic approach.

Key Risk Factors:

- Alberta invoking the Sovereignty Act to defy clean power mandates.
- Escalating separatist rhetoric that undermines national unity.
- Delayed or sabotaged national climate targets due to provincial non-compliance.
- Federal overreach narrative fueling populist backlash across Prairie provinces.

Mitigation Strategy:

- Minimize top-down mandates; maximize economic incentives.
- Build cross-sector alliances with industry, municipalities, and Indigenous nations.
- Focus on what Alberta can gain, not what it must give up.
- Maintain firm legal ground, but soft communication tone.

CRITICAL ANALYSIS: Carbon Capture and Storage (CCS)

Claim: CCS is an essential tool for decarbonizing the fossil fuel sector.

Reality: CCS is a highly expensive, limited-scale, and potentially misleading climate solution.

X THE PROBLEMS WITH CCS

- 1. Mot Scalable at the Required Level
 - O Global CCS capacity in 2024 was about 45 million tonnes CO₂/year, less than 0.1% of global emissions.
 - The IPCC warns that overreliance on CCS distracts from scalable, immediate emissions cuts.
- - O Current CCS projects cost \$100-\$150 per tonne of CO₂ captured.
 - O Solar and wind costs are lower and falling rapidly—under \$40 per MWh in many regions.
- - O CCS-equipped facilities require 20–30% more energy, ironically increasing fossil fuel demand to run the capture systems.
- 4. Opportunity Cost
 - Every dollar invested in CCS is a dollar not spent on efficiency, renewables, or electrification, which offer faster returns.
- 5. Risk of Fossil Fuel Lock-In
 - Oil companies use CCS to justify continued expansion, not decline, of fossil fuel operations.

STRATEGIC ALTERNATIVES TO CCS

- Renewable Energy: Scalable, cheap, and emissions-free.
- Energy Efficiency: Building retrofits and industrial upgrades cut emissions immediately.
- Storage Solutions: Batteries, pumped hydro, and smart grids stabilize clean energy use.
- Electrification: Shift transport, heating, and industry to clean electricity.
- Demand Reduction: Behavioral and regulatory strategies to cut energy waste.

Conclusion:

Rather than investing heavily in CCS—which largely serves the fossil industry's survival—Canada should prioritize renewable energy deployment, energy conservation, and system electrification. These strategies offer **greater emissions cuts at lower costs and higher certainty**.

ChatGPT Question

Would you like this memo formatted for presentation? If you like I can present the content of the slide deck directly here in plain text so you can review it or even copy it in plain text so you can review it or even copy it into a presentation tool like PowerPoint or Google Slides. Want me to do that now?

Paul George Answer: Yes, plain text is fine.

ChatGPT

Excellent – here's the **Canada Climate strategy Slide Deck** presented in plain text format, structured like slides for easy transfer into PowerPoint, Google Slides, or Keynote.

Slide 1: Overview — Alberta as a Climate Policy Challenge

Key Points:

- Premier Danielle Smith poses a significant obstacle to national climate action.
- Advocates oil & gas expansion, resists clean electricity regulations.
- Entertains separatist rhetoric and "Sovereignty Act" defiance.
- Alberta's fossil fuel economy complicates transition to net-zero.
- Federal leadership must balance firmness and diplomacy.

Slide 2: Federal Strategy for Alberta

Objectives:

- Assert federal jurisdiction on climate policy (carbon pricing, Clean Electricity Regs).
- Invest in Alberta's clean economy: hydrogen, solar, geothermal.
- Support worker retraining and Indigenous-led energy.
- Empower municipal leaders (Calgary, Edmonton) as climate allies.
- Frame climate as economic opportunity not environmental punishment.

Slide 3: Political Risk Briefing

Risk Levels:

- Short-Term: HIGH regulatory conflict, political backlash, sovereignty tension.
- Medium-Term: MODERATE with targeted economic inclusion and local engagement.

Key Risks:

- Alberta invoking Sovereignty Act against federal climate laws.
- Prolonged fossil lock-in due to stalled transition.
- Polarization over climate as East-vs-West conflict.

Mitigation:

- Focus on economic benefits, not mandates.
- Center Indigenous and local leadership.
- Avoid legal escalation; use public transparency.

Slide 4: Carbon Capture & Storage (CCS) — A Flawed Solution

Critical Weaknesses:

- **Scalability**: Global CCS = <0.1% of emissions.
- Cost: \$100-\$150/tonne CO₂ far higher than renewables.
- **Energy Intensive**: Uses 20–30% more energy to operate.
- Delays Transition: Supports oil/gas status quo rather than replacing it.
- Greenwashing Risk: Used to justify new fossil infrastructure.

Conclusion: CCS is expensive, limited, and risky — not a viable climate strategy at scale.



Slide 5: Smarter Alternatives to CCS

Strategic Investments:

- Massive build-out of **renewables**: solar, wind, geothermal.
- **Electrify** transport, heating, industry.
- Modernize grids with storage (batteries, pumped hydro).
- Retrofit buildings for energy efficiency.
- Behavioral shifts & demand reduction for sustainable consumption.

Why It Works:

- Proven.
- Scalable.
- Lower cost per tonne of avoided emissions.
- Builds local jobs and innovation hubs across Canada.

ChatGPT Question

Would you like a matching visual roadmap or a template for presenting this live or to stakeholders? I can provide that here in plain text or guide you through building it in a tool like Canva or PowerPoint.

Paul George Answer: YES

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 - O Guarantee training and jobs for oil patch workers.
 - o Promote Indigenous-led energy development.
- 3. Empower Local Pro-Climate Leadership
 - O Support municipal leaders (e.g., Calgary and Edmonton mayors).
 - O Fund regional climate hubs to amplify progressive voices.
- 4. Use Economic Messaging, Not Just Moral Framing
 - O Frame climate action as national economic modernization, not just environmental duty.
 - O Emphasize global competitiveness and future-proofing Alberta's economy.
- 5. Contain Secessionist Threats Through Facts and Transparency
 - O Publicly highlight the real economic and constitutional costs of separation.
 - O Engage the public directly with town halls and open forums in Alberta.



Risk Level:

- Short-term: HIGH (due to potential backlash, regulatory defiance, or legal challenges).
- Medium-to-Long-Term: MODERATE, with a proactive economic and diplomatic approach.

Key Risk Factors:

- Alberta invoking the Sovereignty Act to defy clean power mandates.
- Escalating separatist rhetoric that undermines national unity.
- Delayed or sabotaged national climate targets due to provincial non-compliance.
- Federal overreach narrative fueling populist backlash across Prairie provinces.

Mitigation Strategy:

- Minimize top-down mandates; maximize economic incentives.
- Build cross-sector alliances with industry, municipalities, and Indigenous nations.
- Focus on what Alberta can gain, not what it must give up.
- Maintain firm legal ground, but soft communication tone.

CRITICAL ANALYSIS: Carbon Capture and Storage (CCS)

Claim: CCS is an essential tool for decarbonizing the fossil fuel sector.

Reality: CCS is a highly expensive, limited-scale, and potentially misleading climate solution.

X THE PROBLEMS WITH CCS

- 1. Not Scalable at the Required Level
 - O Global CCS capacity in 2024 was about 45 million tonnes CO₂/year, less than 0.1% of global emissions.
 - The IPCC warns that overreliance on CCS distracts from scalable, immediate emissions cuts.
- 2. **Karley State Karley State Migh Cost**
 - Current CCS projects cost \$100-\$150 per tonne of CO₂ captured.
 - O Solar and wind costs are lower and falling rapidly—under \$40 per MWh in many regions.
- 3. Increased Energy Use
 - O CCS-equipped facilities require 20–30% more energy, ironically increasing fossil fuel demand to run the capture systems.
- 4. Opportunity Cost
 - O Every dollar invested in CCS is a dollar not spent on efficiency, renewables, or electrification, which offer faster returns.
- 5. Risk of Fossil Fuel Lock-In
 - Oil companies use CCS to justify continued expansion, not decline, of fossil fuel operations.

STRATEGIC ALTERNATIVES TO CCS

- Renewable Energy: Scalable, cheap, and emissions-free.
- Energy Efficiency: Building retrofits and industrial upgrades cut emissions immediately.
- Storage Solutions: Batteries, pumped hydro, and smart grids stabilize clean energy use.
- Electrification: Shift transport, heating, and industry to clean electricity.
- **Demand Reduction:** Behavioral and regulatory strategies to cut energy waste.

Conclusion:

Rather than investing heavily in CCS—which largely serves the fossil industry's survival—Canada should prioritize renewable energy deployment, energy conservation, and system electrification. These strategies offer **greater emissions cuts at lower costs and higher certainty**.