New Brunswick Anti-Shale Gas Alliance, Inc.

Comments on the Provincial Climate Plan

Feb. 10, 2022

Introduction

The New Brunswick Anti-Shale Gas Alliance (NBASGA) is a non-profit organization representing Anglophone and francophone civil society groups across the province. Its twin mandates are to keep unconventional fossil fuels out of the province, and to promote the transition to a clean energy economy to cope with climate change.

In our ten-year history we have used peaceful activism of all sorts, education, written and oral presentations to governments and businesses (including providing expert testimony) and, as a final resort, have been a party to several court actions, the most recent as an intervener at the Supreme Court of Canada to establish the federal government's authority on carbon pricing.

We had the privilege of presenting our views to the first NB legislative climate committee, and were pleased to be taken seriously and respectfully. We also were gratified to see that the plan produced from those proceedings, while not perfect, contained many appropriate and useful actions.

The years since then have, however, produced mixed results. While providing many useful plans, aspirations and needed data, the actions based on that good work have not been as timely or as vigorous as is necessary to address the scope and imminence of the climate crisis.

Therefore, we thank you for this opportunity to provide our thoughts on how to improve the province's performance going forward. We gear our remarks towards general policy goals and the steps to achieve them, rather than specific programs (except where merited.)

In considering our comments we understand that there are many completed reports, mandated by the first climate plan, that apparently are not available to the public. **We urge you to make public all of the reports stemming from the plan's action items.** As always, science is our guide, and the absence of all the available data makes commenting like this more difficult.

Comments on Context

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At present, climate change denial is no longer an acceptable public position. The science and world events have provided evidence too strong to deny. However, despite the climate crisis, former deniers, and groups with interests in preserving the status quo, continue to muddy the details of the discussion in order to delay and forestall change. We hope to bypass these distractions and reduce the issue to its few clear fundamentals.

Of course, the Committee is aware of the many reports and the science demonstrating the potential consequences of failing to adequately address climate change, and has taken note of the climate related weather disasters that the province has faced in recent years.

However, as could be expected in reaction to a crisis years in the making, human beings may lose sight of where we are on the climate timeline, and thus wait too late to react with sufficient speed or effort.

So, while we won't dwell very much on the consequences of the climate crisis in our comments, for context we mention two reports released as we were preparing these remarks. Both illustrate the immediacy of climate catastrophe to New Brunswick in time and space.

This year the Gulf of Maine broke its previous record high temperatures by an unprecedented 3 plus degrees Celsius. **[1]** This aligns with a recent climate trend showing these waters are heating faster than 99% of the earth's oceans.

Connecting this local event to global trends, the second study reveals that, since 2014, ocean heat waves – once rare occurrences – have affected more than 50% of the world's oceans with steadily increasing temperatures. *"Ocean heat waves, fuelled by human-caused climate change, passed the 'point of no return' and have become the 'new normal'.* ***Climate change is not a future event."*** (*Emphasis added)*

This heat *"will wreak havoc on ocean ecosystems, leading to seabird starvation, coral bleaching, dying kelp forests, and migration of fish, whales, and turtles in search of cooler waters." [***2, 3***]*

We are already seeing the effects of this warming in our seafood economy and that of our neighbours. It also affects our weather and climate, which in turn impact agriculture, forestry, invasive species and diseases, and virtually all we do.

The one, obvious, overarching truth in dealing with the climate emergency is that we must, in short order, stop producing and burning fossil fuels. Unfortunately, most climate actions and plans to date have not seriously addressed this one self-evident and salient fact.

To date, no country in the world has implemented climate plans that will meet the Paris climate goals. **[4]** The International Energy Agency, *"specifically finds that even if nations meet their current climate pledges, the world will see just 20% of the greenhouse gas* [**ghg**) *emissions reductions necessary by 2030."* **[5]**

Instead, global leaders have proposed a multitude of schemes to curtail climate change, without actually limiting the production and burning of fossil fuels. At the COP26 conference only 2 of 35 countries touting their plans included reducing the production of fossil fuels. **[6]**

Had governments begun serious efforts in 2010, the ghg cuts required to keep warming at 2 °C would have been around, on average, 2% per year up to 2030. Instead, emissions increased. Consequently, we must now cut emissions by more than 7% per year on average to stay below 1.5 °C (Paris goal). This means we must now do nearly four times the work in roughly one-third of the time. **[7]**

Urgent and large scale limiting of carbon emissions is the crux of climate action. Accepting that fact brings necessary climate actions into focus, making steps apparent and logical.

The moratorium on hydrofracking was the clearest and most effective climate action the province has ever taken. We must continue to observe it, or, like Quebec, go even further and ban all fossil fuel extraction. Going forward, our climate view calls for the province to take the following self-evident actions.

Strategies

Each following strategy, founded on science and reason, describes the pathway to addressing the climate crisis via a clean energy economy. Each deserves consideration. However, we recognize the necessity to establish priorities.

The bedrock of all our strategies is the availability of ample renewable energy to replace fossil fuels.

Therefore, our top three priorities would be:

- **Greatly and quickly expand renewable energy – particularly wind and solar.**
- **Implement the Atlantic Loop as soon as possible.**
- **Modernize the grid to enable the expansion of renewable energy, the trade of energy among provinces, the connection of local energy projects, and the monitoring of the system to conserve energy.**

We hope, and believe, that with these as guiding priorities, the rest of our suggestions will flow naturally and logically as appropriate tools.

1. Replace fossil fuels with renewable electricity - quickly and at large scale.

Promoting renewables may seem obvious, but the current pace and scale of renewables construction is not nearly adequate to meet our needs or timelines.

- **Wind and solar energy must be vigorously pursued, as these technologies are now widespread, and the source of the cheapest energy on earth**. Our slow adaptation of these technologies is inexplicable. **[8, 9]** NBPower's claims of insufficient quantities of sun and wind in the province contradict many reports stating otherwise, **[10, 11]** and belie the successes of jurisdictions with even less potential. At this point, wind and solar are our best options. Emerging renewable technologies like tidal and geothermal should be tracked and supported if proven and appropriate.
- **The Atlantic Loop should be a top priority.** While large-scale hydropower has its own set of environmental problems, it already exists in our neighbouring provinces. It can provide the answer to the intermittency issues of wind and solar, without need of fossil fuels, or exotic or non-existent technologies.
- **Quickly modernize the electrical grid.** We have heard for the last decade or more that the grid is being modernized. The pace and scale of that work must be accelerated to

accommodate the increase in electric power that will necessarily accompany whatever climate plans are adopted.

- **As renewables grow, electrify everything that makes sense**. The direct replacement of other fuels by clean electricity should be the essence of our plan - requiring all of the above.

- **Discourage new fossil fuel based projects.** All facets of government should examine new undertakings for their ghg emissions and fossil fuel usage before granting permits and licenses. The use of renewable energy based alternatives should be required by government regulations and permitting agencies whenever possible.

- **Empower the Energy Utility Board (EUB) to take the impacts of climate change and public health into account when granting permits - not just rates**. **Allow it to determine if an electric alternative is possible.** Recently the EUB granted permission to Liberty Utilities to expand a gas pipeline on behalf of one customer (Graymont), which is the 10th largest emitter of ghg emissions in the province. **[12]** There was no apparent attempt to ascertain if an electric alternative was feasible, and the rate structure approved by the board actually rewarded the company for using more gas by lowering the rate based on volume. This was the opposite of a climate-wise decision.

- **Close Belledune as quickly as possible – abandon all schemes to extend its life.** This should be self-evident, particularly when coupled with the knowledge of the serious public health implications for citizens living near the facility.

2. Avoid the following energy distractions and pitfalls.

Vested interests often present climate solutions based on misleading rhetoric, and a misconception of the urgency necessary to deal with the climate crisis. The 'non-solutions' below share a number of characteristics; they depend on unproven or novel technologies; they require development timelines insufficient to meet the immediate need to address the climate crisis; or they have other limitations that implicitly call for the continued use of fossil fuels for many years beyond what we can afford; they are generally very expensive (if not totally uneconomic); and they do little combat climate change.

- **Small modular nuclear reactors.** Regretfully, Canada and the province have already invested in this theoretical and questionable technology, which will not be available (let alone in practical usage) for more than a decade. **[13]**
    - They will be very expensive to build, and the electricity they produce is estimated to be more costly than renewables and other sources.
    - They will present storage problems for a new type of liquid nuclear waste, while – even after 50 years - we haven't solved the problem of current nuclear waste.
    - **If the private markets don't deem this technology worth investing in, taxpayer money should not subsidize it**. Our tax dollars should be invested in substantiated and achievable climate endeavours.
    - Even if the technology eventually works, by the time SMR's are widespread enough to affect our ghg emissions, our climate fate will have been determined.
    - Tellingly, four of the former heads of nuclear regulation in major nuclear nations just stated that, "nuclear power has no place in fighting climate change." **[14]**

- **Blue hydrogen.** The concept of making hydrogen from natural gas is a gas industry strategy to allow continued extraction of its product. As multiple studies have noted, the process of getting hydrogen from natural gas requires so much energy that it would make more climate and economic sense to just burn the natural gas. It is also subject to methane leakage and all of the other environmental problems associated with gas extraction, such as fracking. **[15,16,17]**. In addition, its claim to produce fewer ghg's depends on another unproven technology, Carbon Capture and Storage (CCS). See below.

  However, if New Brunswick was able to separate hydrogen from water, using renewable energy, to produce zero ghg's, this true 'green hydrogen' could play a role in the future. **[18]**

- **Carbon Capture and Storage (CCS).** Though pursued primarily to allow the continued burning of fossil fuels, this technology has never performed as promised, either technically at scale, or financially. Its usage in power generation is not sanctioned in Europe. There are no large-scale facilities running anywhere in the world, and many projects have been abandoned after years of development and billions of dollars wasted. As

studies have pointed out, *"wind and solar are displacing roughly 35 times as much CO2 every year as the complete global history of CCS."* **[19]** And most of the few existing CCS projects use the captured CO2 to recover additional hard-to-get fossil fuels – hardly helping the climate crisis. Like SMR's, it is a technology that will not provide any benefit for many years, if ever, while diverting funds from developing renewable energy. **[20]**

- **Biomass (woodchips/pellets) for electricity.** Biomass for heating may have some local, acceptable and efficient applications, but should not be used for generating electricity.
  - Its claim to be renewable is specious. The burning of wood releases huge amounts of ghg's immediately. The reabsorption by growing trees is slowly gradual, creating a carbon debt starting at the time of burning. Studies have found that, ***"The payback time for this carbon debt ranges from 44–104 years*** *after clearcut, depending on forest type—assuming the land remains forest." "Because combustion and processing efficiencies for wood are less than coal****, the immediate impact of substituting wood for coal is an increase in atmospheric CO_2 relative to coal."*** **[21]**
  - It is very inefficient for the production of electricity, as it has a low energy density relative to fossil fuels, meaning that a lot of it would have to be burned.
  - If it were in widespread use, the vast demand for it could not be met without serious repercussions. A recent study specifically calculated if large-scale bio-energy, with the addition of CCS, would lower the climate change pressure on the planet. The study found that large-scale use of biomass would most likely have negative impacts on many facets of our planet's ecological boundaries. "*The required forestry and agricultural technologies would be difficult to reconcile with planetary boundaries — that is, it would impose such devastating costs in terms of forest cover, biodiversity, agriculture, and fresh water that doing so might undermine the stability and resilience of the earth system."* **[22]**
  - **It should not be a plan B for Belledune replacement**.

- **Renewable natural gas. (RNG)** This refers to methane from sources other than extraction, such as landfills and industrial waste. This may have some merit in specific individual, localized

cases, but it does not work at the provincial scale. At best, it can provide only a small percentage of energy needs. A study in California found that using all available sources of RNG will provide a maximum of 4% of gas needs. Even as a supplement to ordinary natural gas, it requires gas infrastructure, including its associated methane leakage. Burning RNG produces the same amount of ghg's as extracted natural gas. **[23, 24]**

- **Using the Net Zero concept to set goals.** The idea of net zero is to offset the ghg's coming from burning fossil fuels, by sequestering (somehow) an equal amount of ghg's through manmade carbon capture or natural sequestering. It sounds alluring, but has questionable substance. It is another excuse for burning fossil fuels now, while hoping that some means will be found in the future to efficiently and economically capture ghg's.
    - As noted above, CCS is not yet nearly up to that task.
    - Natural offsets, such as protecting forests or planting trees have been found to lack scientific credibility, are hard to evaluate, are susceptible to fraud, and generally not effective. **[25]** They may even have negative consequences by altering local ecosystems.

  Our primary goal should be to actually reduce ghg emissions, rather than offset them. A study notes that*, "not emitting carbon in the first place is preferable over carbon dioxide removal, even if technologies would exist to efficiently remove CO2 from the atmosphere and store it away safely."* **[26]**

  This is easily understood, because once the carbon is in the atmosphere, it has multiple negative effects on *"surface air temperature, upper ocean heat content, ocean deoxygenation, and acidification,"* for examples. This damage cannot be undone by the subsequent removal of other carbon from the air.

3. Reduce Energy Demand

Reducing energy demand is as important as renewable energy. Developing clean energy to satisfy increased energy demand, rather than using it to replace fossil fuel energy, will have us chasing our tails, and we will never achieve our goals. To paraphrase an old saying, "the cheapest and cleanest fuel is fuel you never had to burn."

Many of the following energy reduction suggestions could be funded, to the extent possible, by the province's carbon pricing refund. All would result in improved living conditions for the citizenry, and are filled with employment opportunities.

- **Insulation.** Programs to help residents – not just the poor – to properly insulate homes should be greatly expanded.

- **Electric heat pumps**. Programs to make these available and affordable should follow insulation programs, or be offered separately to those with already well-insulated houses. Programs providing these energy saving devices in the coldest parts of Europe result in notable energy saving and ghg reductions. **[27]**

- **Building standards for all new construction should be the latest available, and require proper insulation, heat pumps and all electric appliances.**
  A good example of this would be the denial of new natural gas infrastructure for residential use. Jurisdictions in Canada and globally are forbidding the use of natural gas for cooking and heating in new buildings, based on new science that shows serious health effects from indoor air pollution, and serious greenhouse gas emissions from methane leakage in appliances and supply lines. **[28, 29, 30]** The last thing we need to encourage is new fossil fuel infrastructure.

- **Determine if the energy savings by reducing unnecessary lighting may warrant standards or regulations.**

- **Transportation.** Being a rural province, transportation will be one of the most difficult changes to make. However, it seems clear that the auto industry will be going electric, and we will have to follow. While inevitable, it will put new strains on the electrical grid sooner rather than later. **That stresses even more the need for rapid expansion of renewables, the Atlantic Loop, and grid modernization**. Along with this we must simply drive fewer miles, especially as we make the transition. There are efficient ways to reduce transportation energy requirements:
  - **Increasing the amount and accessibility of energy efficient public transportation**
  - **Creating and expanding walkable, bikeable urban and suburban areas**

- **Devising programs to encourage changes in driving habits**
- **Localizing and shortening supply chains wherever possible, using energy efficient transport and alternative local delivery systems**
- **Making all the above standard considerations in all land use planning.**

The government should be a model in its actions for all these energy saving endeavours, from making government buildings energy efficient, to adding renewable energy sources where possible, to electrifying its transportation fleet. Doing so will stabilize new 'green' markets, boost employment, and build public awareness and acceptance.

4. Extend climate-wise decision-making to other resource sectors

The effects of climate change and many of its causes occur across all segments of society, each of which has its own advocates with great expertise. However, we would like to make a couple of suggestions in a few areas that seem obvious and appropriate to us.

- **Improve Forest/land use Policy**
  - **Decrease clear cutting and spraying.** These affect climate change in many ways, besides the obvious loss of trees as carbon sinks. Canada's managed forests have turned from being carbon sinks into being carbon emitters. **[31]** It also causes loss of forest biodiversity and contiguous forestlands, which research shows have greater productivity, and absorb more carbon, than tree plantations. **[32]** It causes loss of topsoil, and soil compaction; while research shows that, *"in temperate* forest *ecosystems, the amount of* carbon *stored in* soils *is often greater than the amount stored aboveground in living and dead plant biomass."* **[33]** It also leads to increased temperatures of the land and water, exacerbating other climate effects.
  - **Promote afforestation and reforestation wherever appropriate and possible, following scientific evaluations in each case.** A haphazard approach to either could be counter-productive.

- **We should better protect and preserve wetlands, bogs and other carbon sink landforms**. *"Wetlands store more carbon than any other ecosystem, with peat lands alone storing twice as much as all the world's forests"*, according to the United Nations Environment Programme. **[34]** There is much for government to do here with both regulations and enforcement.

- **Encourage local and Sustainable Agriculture**
  - **Support local food sources and networks, sustainable farming and the services it requires**.
  - **Provide financial programs to help new farmers buy land and weather the first few years necessary to develop a farm and make it profitable**.
  - **Provide government agricultural extension services for research, and educate farmers on sustainable crops and methods to preserve soil health.**

Adaptation

We haven't dealt with adaptation, as that is the area where most people and the government already seem focused, following the recent weather and climate disasters both locally and globally. We will only note that things on this file also need to proceed more quickly.

To date, climate related problems have tended to arise sooner than predicted, and with little global action to deal with the climate, there is every reason to expect that trend to continue.

Government research and plans on this topic need to be publicly accessible. Actions must be prioritized and the public engaged in reaching decisions on lasting, achievable solutions, based on science and economics.

Conclusion

Much has been made of the fact that New Brunswick has exceeded its greenhouse gas emissions goal. While that sounds great, it is due in large part to events that had little to do with our climate policy, and ignores the fact that Canada has the highest per capita energy use in the world, and we rank 5th in per capita use within Canada. **[35]**

Metrics may be needed to make plans and measure progress on very specific activities, but they cannot tell us whether something is a success in human terms.

For instance, citing a growing GDP as a measure of progress reflects increased economic activity. But if that activity is in response to an increasing number of disasters, is that really progress?

Ghg metric goals may be achieved through various means, but if we haven't kept pace with a changing world, we will remain an increasingly have-not province despite meeting our metric.

The goal of our climate plan should not be to simply achieve some number we can flaunt. The goal should be to bring New Brunswick's people, society, economy and politics into synchronization with a changing world that will encompass all that we do.

In our presentation to the first climate committee, we ended by saying, somewhat dramatically, that each MLA, and their political counterparts around the world, would be making decisions that would affect the fate of the earth. Nothing since then has changed the truth of that statement, except that, with every passing year, our choices become more limited, harsher to implement, and require tighter timelines, to make up for years of inadequate action.

From scientists to the Supreme Court of Canada, the climate crisis has been called an "existential issue." Many people now use that phrase, but we are not sure they understand it, or have taken it to heart.

In Shakespearean terms we are at the moment where Hamlet ponders, "To be, or not to be, that is the question."

It is the question you will answer. We hope that you will view it in that context and not just as another political issue.

Thank you for considering our comments in your deliberations.

Sincerely, *James D Emberger*

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