

SLIDE 1 - Title

It is gratifying to see the federal and provincial governments talking about climate change and making plans to both combat it and adapt to it. This committee is a healthy sign of that, and we thank you for the time and effort you are contributing this summer.

I serve as Spokesperson for the New Brunswick Anti-Shale Gas Alliance. From our creation 4 years ago, we have had a dual mandate – opposing unconventional oil and gas development, and combating climate change, particularly through the move to a clean energy economy.

While everything I say factually in my presentation should be considered as coming from my organization, the recommendations that I will make are mine alone. While I have no doubt that they would be supported by our member groups, due to time and circumstance I have not submitted them for full organizational approval.

My remarks will be addressed generally to “Heading 3 - Provincial government leadership” and specifically to “Building broader awareness.” In your package, the Recommendations are pulled together in a separate document.

SLIDE 2

First, I'd like to welcome you to the Anthropocene Epoch, the first geologic era since the last Ice Age to be added to the official Geologic Time Scale. On Monday, after seven years of deliberation, scientists recommended that roughly speaking the year 1950 was the start of a new period in which human activity is permanently influencing the chemistry of the atmosphere and Earth's climate.

We can say goodbye to the Holocene age that we've been in for 11,700 years and hello to the era of man.

SLIDE 3

This is a partial list of how we earned this distinction. The categories are chosen because of the permanent or long lasting nature of their effects. You might notice that the common denominators in all of these are that they stem from energy use, or fossil fuel use – plastics and fertilizers being made from fossil fuels. Thus they nicely frame the theme for my presentation.

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Right now there are forces from all points of view that are trying to frame the narrative around climate change. Narrative is central to how we as a species decide how to make decisions and live our lives. Facts are important, certainly, but it is the story that incorporates the facts, and the access people have to the story, which shapes the future.

Here is a statement and conclusion based on historical facts that few would argue with.

SLIDE 4

SLIDE 5

It's a simple logical syllogism: moving to renewable energy will bring transformative change.

What this doesn't tell us is "why" we must have change, or "what" will that change entail.

Here we run into a basic fact of human nature – we are reluctant to change.

SLIDE 6 – First Point

To persuade, we need to have a believable story to tell and a way to get it to people.

During these hearings many people – including those from groups within our Alliance - will present evidence of the benefits of moving to a clean energy economy. Evidence that is based on solid analysis. But the benefits described will not apply uniformly to everyone and may take time to realize. Meanwhile, citizens will be asked to change their lives.

Therefore, I believe these messages of hope and benefit must also be accompanied by the stark truth about the inevitability of change in order to build popular support for whatever solutions are adopted as necessary.

I realize that you, of all people, have recently been getting an education on the seriousness of climate change, but at the risk of telling you some things you already know, I will take just a few minutes to walk you through the dire state of the situation to make a

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point I believe is necessary before making my recommendations for action.

The Discussion Guide covers climate change events related to New Brunswick, which is certainly necessary. However, I don't believe that any current discussions of climate change outside the scientific and activist communities are adequate to convince the public of its extent, immediacy and seriousness, particularly as viewed by the experts on the topic.

The following slides are just sentences or headlines from recent peer-reviewed studies or responsible climate-science journalism. Some are as current as yesterday. To keep things simple I only cited authors when using an extended quote, but if you need a citation for something I can get it for you.

SLIDE 7

We are not only continuously breaking records, but also by greater margins.

SLIDE 8

For perspective: 280 ppm is the preindustrial level of CO₂. We accomplished over half the increase to 400 in the last 50 years. The rate of increase is increasing, meaning that in a decade we may be at the dangerous level of 450 ppm - the maximum amount to preserve a 2° C increase.

SLIDE 9

Some are listening to scientists' warnings. This warning for 'Immediate Action' comes from the World Bank, not environmentalists. I know you have heard from the insurance industry...

SLIDE 10

"Climate change in particular represents the mother of all risks - to business and to society as a whole." This happened Monday. More from these folks later.

SLIDE 11

Only 8 eligible cities are considered safe.

SLIDE 12

In those countries with high temps – life literally stopped. These real temperatures preclude almost any economic activity and approach the limits to life itself.

Fredericton had a record number of heat warning days this summer.

SLIDE 13

These historic floods are happening on all continents. I just used the US for familiarity and good statistics on this and the next slide.

SLIDE 14

10 states in west battling huge fires

SLIDE 15

Note how nearly every aspect of life and health is affected by climate change.

More infectious diseases - Ebola, Zika, Lyme. **Allergies** may be the most immediate, easy to recognize ailment - they have increased by 25% in recent years.

SLIDE 16

In New Brunswick we are already witnessing the effects on salmon, sea birds, whales and lobsters. But it's the keystone species in Antarctica that are the most worrisome, as the next slide points out that such species are involved in producing oxygen and a worldwide food chain.

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SLIDE 18

Just a sampling of areas, all of which will produce famine, war, refugees and poverty.

SLIDE 19

This message was delivered in 2012, but could appear just as well in every year or month since then. This is the main message.

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The uncertainty of how fast tipping points and feedback loops will have effects has often caused scientists to underestimate the speed of change. Slowdowns in ocean circulation, which are still very small, were not expected to be noticeable until later in the century.

SLIDE 23

The last quote is from a report released just yesterday. Canada's own Minister McKenna proposed the 1.5 degree goal to great acclaim just last year. 1.5 already appears very doubtful.

SLIDE 24

This is where we are now. **Business as usual politics, irresponsible mainstream media coverage and a distracted citizenry will result in catastrophic consequences."**

These are the areas I want to discuss.

It is easy to see that scientists and those who are aware of the situation speak in terms that are just short of panic. They are screaming warnings, yet, except for the stories on huge floods and fires (which often don't mention climate change), I believe that few, if any, of the studies or reports I used have appeared in the mainstream press. **The citizens of New Brunswick are certainly not aware of the dire nature of the threat conveyed by the science.**

SLIDE 25 –Second Point

SLIDE 26 – First Recommendation

The people must all be exposed to the same 'facts' – this cannot become an issue debated on opinion pages or spun on competing websites often run by vested interests.

In the shale gas campaign, we collected and distributed the science ourselves for many years, but as an advocacy group, we could be cast as prejudiced, even though we were quoting the science. However, two groups of professionals and experts put together collections of all the peer-reviewed literature.

SLIDE 27 – First Recommendation - Examples

The Concerned Health Professionals of New York put together a Compendium, which can be viewed or downloaded at:

<http://concernedhealthny.org/compendium/>

It is arranged by topic, with most recent papers first, and contains a short readable abstract of each paper.

Physicians, Scientists and Engineers for Healthy Energy maintains a citation database online, arranged by topic and with online tools to search and manage the data.

<http://www.psehealthyenergy.org/site/view/1180>

Both of these provide good examples. Had such a neutral database existed for shale gas, that issue would not have dragged on for so many years. Once we were able to take advantage of these sites it became much easier to direct people and the press to actual news and developments.

The government cannot wait and hope that the non-profit sector will fill this gap. Plus, the government itself should use this resource and direct its internal departments to it for keeping current on climate issues that affect them.

SLIDE 28 – Second Recommendation

Having the facts is necessary, but to convince, the facts must be fed to the people. This we also learned from shale gas. People may be interested in the topic, but not have the time or resources or knowledge to access the information they need. We did educational tours around the province to give people the basics and to direct them to additional sources.

The government could do this much better, as we had the disadvantage of having few financial resources and being an 'advocacy' group whose views could be seen as prejudiced.

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This would require very little effort and could be added to the government's existing website. After creating the template for the site and deciding on details such as how far back in the literature to start, a knowledgeable staff person could just check each day through existing science news feeds for relevant articles.

NGO's I am certain would help with all of this, but the information must be seen as impartial.

The overall solution to climate change is simple and is known to all scientists, activists and anyone paying attention. We need to be using far fewer fossil fuels with each passing year.

SLIDE 30 – Third Point

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The government cannot be the source of cognitive dissonance on this reality.

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SLIDE 32

Some scientists state that two-thirds to three-fourths or more of known fossil fuel reserves must stay in the ground. Others put it in terms of current fossil fuel usage and note that in 5 years of current usage, we will have burned all the fossil fuels allowable in order to keep global warming under 1.5 C.

Yet others note that no new fossil fuel sources, especially unconventional sources that produce greater warming, can be developed.

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There is essentially only one answer to this problem – produce fewer greenhouse gases, meaning the end of the fossil fuel age.

SLIDE 34 – Third Recommendation

This may be just ambiguous language, but if not, the government must decide on one policy or the other, or it will not succeed in either.

Given what you have just seen, any government that decides to create infrastructure for the dirtiest of fossil fuels – infrastructure that will cost billions and be designed to last decades – cannot at the same time claim to be fighting climate change. The countries that attempt to do both - the US, Canada, Australia – are those whose populations remain the most sceptical about climate change.

Populations will not believe that the climate situation is serious or dire, and will not support climate change policies calling on them for change or sacrifice. Any climate action will be perceived as simply a bone thrown to environmentalists, while with a wink and a nod it will be perceived as business as usual with the fossil fuel industry. The general population will tune out of the issue, and the informed population will lose trust in the government.

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This is the unvarnished truth.

SLIDE 36

This is the decision to be made.

And not only is this industry reeling financially, its days are numbered.

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Aviva, Aegon NV and MS Amlin, three of the largest global insurers called on the G20 leaders, to set "a clear timeline for the full and equitable phase-out by all G20 members of all fossil fuel subsidies by 2020", calling them "simply unsustainable."

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EROI is the Energy Returned on Investment. And in socio-political-economic terms, 3 is about the minimum EROI for any kind of civilization. For comparison – old oil wells had EROI's of 100, and new conventional ones are from 10 to 20.

Investing our time and treasure in a doomed and unprofitable industry, to the detriment of dealing with the existential crisis of our time should be inconceivable.

This is, in any case, a prime example of cognitive dissonance. Fighting climate change while promoting fossil fuels simply cannot be done at the same time. Witness the scorn and sarcasm about the absurd Energy East hearings, where climate change cannot even be discussed.

Leading to my Fourth and last recommendation is a statement from the Discussion Guide.

"Requiring that future climate impacts be considered as part of public funding decisions for roads, buildings and other infrastructure," This is sound policy, but does not go far enough.

SLIDE 38 – Fourth and Final Recommendation

Each ministry should, of course, assess its own interests relative to climate change. And, of course, there are other issues of importance that must be considered. But they must not be addressed in silos. If ever there was an issue that has to be coordinated across all levels of government, this is it.

Political figures inside the government in the US are recommending a climate change office modeled on the National Security Council.

Scholars, engineers and scientists have even given us roadmaps to combat climate change, and private enterprise in the energy sector has made truly amazing strides in kick-starting the transition with technological breakthroughs. Economists have shown how we can survive and prosper in the transition, albeit with changes in how we live.

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The missing ingredient is political will. Without commitment coming from both government and citizens, the large actions that must be taken will not be.

Only government can mobilize the entire populace and all institutions to be prepared for changes in the way we live our daily lives. Changes will be forced on us later with great cost and pain, and may not even be effective, if we don't act now. For governments and people to act they must cooperate as never before. This cooperation must be built on trust and fact, both of which require honesty and persuasion.

We need not manufacture fear or create false promises; we must simply recognize the dangers and then demonstrate how we can overcome them.

Science tells us that at the current rate of emissions, we have about six years before we have burned the amount of carbon that will allow us to escape locking in severe climate change.

We don't have time to wait for the next elections or to indulge in the normal political horse trading or posturing for partisan advantage. I am certain that there will be honest differences about some details, but the gravity of the situation must bring unity of purpose to everyone in government from all parties, and all must agree on the basics – and that the situation calls for immediate and drastic action.

The government must lead, educate and constantly reassess its policies. **Climate change must become a principal and central area of governance and not just another file.** There are tough decisions to be made, some which may be unpopular, but necessary. **That is why the government must be out front in demonstrating its seriousness on the issue and educating the public so they accept the changes that must come.** This is the basis of my recommendations.

When you became MLA's for the little province of New Brunswick, I am sure that you never imagined that you would be making life and death decisions that affect the entire planet. But the truth is that every one in every government for the next decade will be making decisions that may affect the survival of the planet's inhabitants. It is the issue that overshadows all else.

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With current media information about climate being muddied by special interest propoganda, much of the public remains understandably sceptical.

The government must be the honest arbiter of the situation and certainly should not worsen the situation by sending the citizenry mixed messages based on illogical and specious wishes that serve only to extend the life of a doomed industry.

It is true that fossil fuels may be with us for a while, as transitions take time, and there are some uses of fossil fuels for which substitutes are difficult to find. But the trend of their usage has to be going inexorably and dramatically down year after year.

That is why it is necessary to convince the populace, which can only be done if the government itself honestly believes in the unfolding emergency that scientists have been struggling to tell us. We can be like British Columbia, whose new climate plan is perceived as a cynical support for a floundering fossil fuels industry, or California, whose new plan was passed despite a multi-million dollar lobbying effort by the fossil fuel industry.

Oh, and by the way, analysts say that California's already-world-leading policies have added \$48 billion to its economy.

But in the end it cannot be about whether or not it is profitable. We are in uncharted territory, where decisions cannot be based on economic statistics alone.

I started with quotes from scientists about climate change and I would like to finish by letting you read a few quotes by and about climate change scientists themselves.

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Thank you for your time and attention.