Thank you. And deep thanks to the ATA for both inviting me to speak today and for continuing to support an open dialogue in the face of intense pressure.

I would like to begin by acknowledging and respecting that we are gathered today on Treaty 6 territory, and specifically on the traditional territory of the Enoch Cree First Nation.

Whew. It’s been quite a month. For me, it’s given that old saying “don’t shoot the messenger” new meaning and importance. The debate over this speech has revealed a deep underbelly of fear in Alberta, for good reason. Change is hard, and in the climate era there are no easy answers. Given the importance of oil and gas production to Alberta’s economy, the fluctuation of price, the destabilizing impact of new technologies like electric cars and renewable energy, the growing opposition to new fossil fuel projects and infrastructure at home and around the world – it is no wonder people are angry and
scared. Vilifying each other, pointing fingers, ignoring global trends won’t help us make a plan to ensure a strong economy, resiliency in the face of a changing climate.

When we are all at our best, we face these issues with an open mind, we seek to understand, to find solutions to bridge the divides. Instead, we have seen elected decision-makers whipping up hate, denial, defensiveness and fear.

But it’s not just those responsible for the personal attacks, the vitriol who are to blame. Faced with conflict over the Trans Mountain pipeline, we all have retrenched and moved backwards.

In the environmental community, we need to hold ourselves accountable for vilifying those who work in the oil industry, for not acknowledging how we have all benefitted and continue to benefit from oil, for not acknowledging how painful change is and will be.

At the same time, many in industry and government need to be held accountable for trying to silence much-needed debate. For playing on people’s real fear about their livelihoods, their families, and using that for political gain. We are better than this. Regardless of your opinion of the Trans Mountain pipeline or the growth of the oilsands…we are better than this.

I have been called a lot of things in the past month. An eco-terrorist. Try explaining that one to your kids. An enemy of the state. A traitor, a liar, an extremist, a scumbag…and much worse that I can’t even repeat. In reality, I am an adjunct professor of environmental studies. I have been a policy advisor to many different governments and corporations, an author, an environmental advocate in Canada and beyond for the past 25 years. I am a mom who worries every day about the safety of my children, of the world that this next generation is growing up in. The attacks on my character are meant to drown out what I am saying, to foment fear and anger in Alberta that paralyzes us from progress. This is not leadership. The hate is so thick there can be no meaningful conversation about the future of energy policy, climate response, and economic diversification. The so-called debate
we do have has become a crass, simplistic call to arms that is a disservice to Albertans and Canadians. It forces people to “take sides” instead of finding solutions.

Years ago, embroiled in the forestry debates of the nineties, the so-called “war in the woods”, I learned a very valuable lesson – I learned that if we really want to see progress, solutions, we needed to listen, to work to see people and not just positions.

I will be honest with you. It's a hard thing to hold onto. At the time, I thought there were good guys and bad guys. And I knew what side of the fence I was on. There was a time when I thought if I could just get people to know what I knew, the world would be different. And when they didn’t listen, I just talked louder. It was pretty unbearable.

But then something happened: I got to know the people on the other side of the blockade. I will never forget the day that the chief forester of one of Canada’s largest logging companies lost it at me: “Do you think I get up every morning thinking, how can I destroy more forests today? I became a forester because I love forests.” I responded: “Do you think I get up every day thinking about how I can destroy jobs? I have family and friends that work in this industry.” We sat down and started really talking. Those conversations led to some of the first solutions process and collaborations in Canada’s history. They changed the way that forestry is done and protected millions of hectares of old growth rainforest.

Don’t get me wrong, I am not saying if we are all just nicer to each other, we can work out these issues over lunch. I think respectful, safe conflict is sometimes necessary to force debate. It was the blockades in the forests that led to those conversations, that forced changes in the status quo. And it is conflict over Trans Mountain and over the oilsands that is forcing this conversation today.

With that experience from the war in the woods in mind, knowing that, of course, there are good people everywhere and that we cannot find solutions unless we understand different perspectives and the barriers to change, I spent five years trying to understand what the
leaders of some of the world’s largest oil companies think about climate change. Whether we have any common ground. Whether it is possible to break the gridlock that we are experiencing, not only in Alberta, but in Canada and around the world, to get out from under this terrible polarization and finger-pointing and see if we could find common ground.

I got to know, like and admire many of them. I realized that they and the people who work for them are smart, good people. This speech is, in part, that story. I want to take the opportunity to reflect on what I learned and why we find ourselves once again in this terrible place of polarization and mudslinging.

In 2013, working with David Collyer, the former CEO of CAPP and Shell Canada, we organized a dinner in Calgary with five of North America’s leading executive directors of environmental groups and five CEOs of the largest oil companies to talk about climate change.

The dinner didn’t go as planned. Concerned that the ENGO leaders think I have gone over to the dark side by even organizing this dinner, I start out with a hard-hitting, fully referenced, statistical ‘presentation’ to the CEOs on climate change, carbon budget and oilsands. Looking back on it, I realize now that it was likely insulting and unbearable.

Steve Williams of Suncor lasted about four minutes. “Yes, yes, we know. Can we move on? Let’s not waste time. The question is what we should be doing about it.” I froze like a deer caught in the headlights. Did the CEO of one of Canada’s largest oil companies just acknowledge the climate threat, climate science and carbon budget? What now?

Murray Edwards CEO of CNRL, came to my rescue like a helpful giant. “Tzeporah, I think what Steve is saying is that we know and we are already addressing it. We understand the science. We are not denying it. I think we likely disagree on what needs to be done.” And we were off – into a conversation that lasted off and on for the better part of four years and showed brief glimmers of breakthrough, of agreement and hope, only to spit us out the other side facing attacks
from both our closest colleagues and those on the so-called “other side”, and in my case threats of violence and even death threats.

I want to fast forward to one of the moments that showed glimmers of hope.

It’s 2016, and I have just finished describing the Alberta Climate Plan, and the agreement between the leaders of the oil industry and environmental leaders who will stand on stage to support, it to my old friend Mike Brune, the CEO of one the largest environmental groups in the world, Sierra Club US. “It’s historic … and insufficient.” He was right.

The first climate plan in Alberta – an economy-wide price on carbon, a limit to emissions from the oilsands, methane regulations and phased-out coal plants, escalated efficiency and renewables efforts. It’s historic. A year before, a staffer walking through the halls of the
Alberta legislature asked me to whisper when using the words ‘climate change’ because her colleagues would ridicule her if they heard her talking about it.

The Alberta Climate Plan was historic. It was also insufficient, because the plan will not reduce overall emissions from the oilsands and is not in line with the Paris goals of keeping the world below two degrees. Historic and insufficient at the same time.

To make a very long story very short, the dinners with the CEOs led to working groups over the period of four years that struggled to try and find common ground on climate policy between oil companies and environmentalists, based on a basic premise that we all wanted to “do our fair share on climate change” and “ensure a strong economy”. Many of us were appointed to formal government commissions (the Alberta government appointed us to the Oilsands Advisory Working Group to design regulations to implement the climate plan). For a while we were real people, almost friends. In breaks we talked about our kids, our vacation plans. We shared stories of difficult conversations with colleagues that were remarkably similar. Our colleagues were horrified that we were talking to ‘the other side’. Some within the environmental movement were outraged that I would support climate policy that was “not enough”. Oil industry executives talked about conversations with colleagues who were horrified that they supported a carbon tax and a limit on emissions at all.

At the Oilsands Working Group table that the government set up, we worked together for the next year with union and Indigenous leaders and successfully designed consensus recommendations on how to implement the climate plan, and principles on how to divide up the funds that would come in from the carbon tax. It was hard, difficult work, but we managed to have solutions-based conversations that were respectful and grounded in shared values. It seems a lifetime from where we are today.

I think it was three things that led to the end of our conversations:
• An inability to reconcile short term politics with our problem-solving conversations;

• The industry’s, and now Alberta and Canadian governments’, willingness to bet the farm on technological advances to address climate change – to green oil instead of planning on how to reduce our dependence on it;

• And short-term decisions that we face over new projects and infrastructure like the Kinder Morgan pipeline and how they square with a longer-term pathway.

I think it would have been different if we could have reached agreement at least on the math – on a peak and decline of oilsands emissions – even if we didn’t know how we would get there, if industry had aggressively supporting the carbon tax and other policies that would reduce emissions in other sectors like vehicle efficiency or fuel switching from gas to electricity for heating like they talked about, to “make more room for emissions from oil and gas”. They haven’t, and the math doesn’t add up. Emissions reductions have to come from somewhere, and we need a plan.

While there were always ups and downs in our work together, the break happened when the Canadian Association of Petroleum Products (CAPP) released a report and launched a campaign attacking the carbon tax in Alberta. Many of the oil companies that we were in dialogue with had stood on the stage to support the carbon tax yet were members of CAPP. The carbon tax has again become a political football, an easy target for Conservatives fear-mongering on price increases, and it seems that the oil industry has decided to play both sides of the fence. Leaders from these oil companies still talk about reducing carbon and supporting progressive policies like carbon taxes as good business that will “stimulate innovation and solutions” when in international forums or shareholder meetings. But they are remarkably silent in Alberta, where the far right is whipping up opposition to the carbon tax and the emissions limit, even though when it was put in place they not only supported it: they talked about how it was good for innovation and for industry.
I truly admire the spirit of innovation in places like the Alberta oilsands and in many of the executives I had the pleasure of getting to know. But I remain convinced that they are ignoring the time frame that even conservative scientific assessments have given us to cut emissions.

The final nail in the coffin for our conversations came in the form of the Trans Mountain Kinder Morgan pipeline. Our disagreement over whether we need more pipeline capacity, whether this project is economically and environmentally responsible, and how to address the opposition from First Nations peoples given our country’s commitment to truth and reconciliation and both governments’ commitments to the United Nations Declaration on the Rights of Indigenous Peoples, has led to not only a breakdown of those productive conversations but to a divisive, angry debate that is moving us backward instead of forward.

Moving forward requires facing the challenge honestly and understanding the magnitude of change happening in the world. These issues are, I think, critical for you as teachers.
My perspective on the climate challenge changed forever because of a chance encounter on the way to the United Nations Convention on Climate Change in Indonesia. On the plane there, I had a conversation that changed my life. It forced me out of shuttered debates and into the global conversation.

I happened to be sitting on the plane next to the chief negotiator for Liberia. He asked me about the issues in my country and I told him about the debates in Ontario over wind farms and in Alberta over oilsands. His sad smile and words stopped me in my tracks:

“It’s so nice that you still have time for those discussions. In my home, people are dying every day because of climate change, and thousands more are struggling to get access to water, let alone electricity.” He seemed less like a negotiator than a mourner.
That was the moment when I realized climate change is not just an environmental issue. It is an economic issue, a human rights issue.

We now know that climate change is the greatest challenge humanity has ever faced. More people lose their homes today from climate change than war.

It’s no longer about what will happen in the future. It’s happening now. It’s changing policy and investment around the world. And we have to talk about it.
This year, it was reported that we have experienced a dramatic increase in refugees over the last couple of years—65 million people a year.\(^1\) And we are not dealing with it well as a global community.

UN representatives this year told the Security Council that water scarcity produced by climate change was driving a “cycle of conflict” in developing countries.\(^2\) That the dramatic increase in refugees is in part because of conflict and scarcity – due to climate change.

The most commonly-cited estimate of total climate migrants is 200 million by 2050, according to the International Organization for Migration.

Simultaneously, by 2050, the UN Food and Agriculture Organization estimates food production will plummet in Europe, many parts of Asia...
and Africa between 35-50%. Food costs globally are already increasing and expected to skyrocket.

This year, UN agencies told us that droughts and flooding had reversed progress on global hunger and driven food shortages and malnutrition to 10-year highs.

Not addressing these issues is not an option. Because if we are unsuccessful at changing the trajectory of emissions, everything changes. It’s already changing.

So why is this happening?

It’s happening because global emissions have increased 70% since 1970 and are literally trapped in our atmosphere, creating a blanket around the earth.
Since 1970, we are seeing a 50% increase in severity and frequency of violent storms.

All that, and the planet has only warmed by one degree.

If the average temperature stabilizes between 1.5 and 2.5 degrees, we can expect up to two billion people to face water shortages, up to 30% of plant and animal species will risk extinction. And we are not remotely on track to stabilize the climate anywhere near that level.

I’m sure you’ve heard about the new report from the Intergovernmental Panel on Climate Change. President Trump famously questioned the report, asking who “drew” it. Well, they weren’t using crayons to ‘draw’ it. The IPCC is the gold standard for the latest climate science. It is asked by the governments of the world to summarize the state of knowledge. This report was written by 91 leading scientists from 40 countries who together examined more
than 6,000 studies. It was then reviewed *and approved by 195 countries, including our own – and including the American government, for that matter.*

The report notes that we are already experiencing one degree of warming. It catalogues the benefits to us all if we can limit warming to 1.5 degrees and lays out pathways to doing that. I urge you, especially the teachers in the room, to download the summary and read it. Use it.

What’s critical in this conversation is that we recognize that climate impacts are already worse than we expected. **We are facing huge human health impacts, erratic weather, dangerous heat waves, rising seas and large scale disruption to infrastructure and migration patterns.** The report warns that we have about 12 years to avoid ‘catastrophe’, and that staying below 1.5 degrees requires slashing global greenhouse gas emissions to get to net zero by 2050.
Yet, even with (yet unfulfilled) promises made as part of the Paris agreement, we are on track for between two and a half and over three degrees of warming. And if we look not at promises, but at actual emission and demand trends, we are on a much higher pathway.

Often in Alberta, when we talk about climate change, I hear the same refrains: It’s not fair; we are only a small part of the problem. The problem is China and India, the US, not us. It’s not fair that we are targeted. If others continue to expand production of oil, we have a right to, as well.

**Fair. Climate change isn’t fair.**

It’s not fair that vulnerable countries are starting to report spiraling rates of refugees, starvation, and millions without access to water due
to climate change.

It’s not fair to the reported 300,000 people who have lost their lives this year due to climate impacts.

It’s not fair to the families who have been fleeing fires and floods in Alberta…
...Or in British Columbia, and in fact around the world.

It’s not fair that 100 companies are responsible for 71% of global emissions. It’s not fair that 10% of the population, the world’s richest, including Canadians, are responsible for 50% of global emissions. And that the world’s poorest have to bear the brunt of the worst of the impacts.

And it's not fair that wealthy, developed fossil fuel producers are fighting to be the last ones standing in the global oil economy when we have the tools, ingenuity and resources to plan for and support a just transition for workers, communities, and the economy. That's not fair.

The thing is that this is a global problem that is having serious local consequences. Granted, in Canada, we have it better than a
lot of places, though better is relative, isn’t it? The floods and fires in Alberta have already cost Albertans $6 billion in the last five years.\textsuperscript{vii}

In my conversations with the oil industry, I heard repeatedly: the world needs oil, we use oil, others are producing it, why can’t we? We can and we will. No one is saying oil and gas production should be shut down overnight. But how much will we produce and for how long? Is it big enough?

Here’s a crucial point that gets lost in the debate here in Alberta. \textit{The storm of controversy is not about having an oil industry – that would just be a ‘normal’ controversy. The storm is happening because government and industry want to grow production instead of planning for a peak and decline.}

At this moment in history, we should not be growing production and infrastructure. This a key point at the heart of the Trans Mountain debate. You don’t build a $10-billion pipeline (especially with taxpayers’ money) for five to 10 years. You build it for 40 to 50. If in 50 years we are still producing so much oil that we need that extra capacity, we are globally in big trouble. If every country decides it has the right to produce more fossil fuels, we all lose. We are betting that humanity will fail to tackle climate breakdown.

The National Energy Board, government and industry all use the International Energy Agency World Energy Outlook report to show that there will be demand for more oil and gas projects. What they don’t mention is that the oil demand projected in that report also assumes complete failure to prevent catastrophic warming. Approving and building new fossil fuel projects helps to lock us into that grim future. In IEA studies that look at what is required to meet the Paris goals – Trans Mountain, Teck, LNG Canada would not go forward because the market would simply not be there. We must marry our decision-making with our goals on climate change. Put more simply, I don’t think it’s too much to ask to have our elected decision-makers
analyze project decisions based on whether they would be needed in a habitable world.

Here’s the bottom line.

We are now able to calculate the cumulative amount of carbon dioxide (CO₂) emissions that can be released into the atmosphere over the rest of this century to keep within a certain temperature threshold. A “carbon budget.”
Adding up the fossil fuel projects that are under construction and currently producing from the Rystad database (analysis used by the industry itself), we can see that:

- The potential carbon emissions from the oil, gas, and coal in the world’s currently operating fields and mines would take us beyond 2°C of warming.
- The reserves in currently operating oil and gas fields alone, even with no coal, would take the world beyond 1.5°C.
“No more than one-third of proven reserves of fossil fuels can be consumed prior to 2050 if the world is to achieve the 2°C goal.”


“The vast majority of reserves are unburnable if global temperature rises are to be limited to below 2°C.”


Three years ago, Bank of England Governor Mark Carney, HSBC Global Research, and Citigroup Research Equities were warning of the stranded asset risk and other climate-related change that high-emitting industries will face in the near future.

In June, a study in the journal Nature Climate Change warned that plummeting renewable energy costs and rapidly-rising investment in low-carbon technologies could turns trillions of dollars of fossil projects into stranded assets and trigger a global economic crisis.
• If we’re going to prevent large parts of this Earth from becoming not only inhospitable but uninhabitable in our lifetimes, we’re going to have to keep some fossil fuels in the ground.
  - President Barack Obama

75% of Canada’s oil reserves are unburnable.
  - McGlade & Ekins study in Nature

A study published in the scientific journal Nature estimated how a two-degree global carbon budget would be divvied up between different global carbon stocks—coal, oil and natural gas reserves—based on how carbon-intensive they were and how expensive they were to develop. The analysis came to the conclusion that oilsands oil, because it was both expensive and carbon-intensive, should be granted enough of the global carbon budget to produce at existing levels for 10 years only, and then would have to decline rapidly.
The most immediate risk to Alberta’s future prosperity is the notion we’ve been hearing several times a day: The false storyline that the next oil boom would be right around the corner if Alberta could just get more pipeline capacity, ideally a pipeline to tidewater to diversify its foreign markets.

The difficult but far more practical reality is that Alberta bitumen is a high-carbon, high-cost product that can’t compete against U.S. shale oil on price, and won’t survive the coming era of absolutely necessary climate change action on emissions intensity. The Alberta oil and gas industry is smart and technologically sophisticated, and over the last generation the province has confronted unimaginable challenges to bring its product to market. But the remaining fundamental problems with the product are not a quick fix, and we are running out of time.
Its carbon intensity has been an issue for a long time, and the problem isn’t going away: As recently as August 31, a paper in the journal Science listed Canadian crude as the fourth-most greenhouse gas-intensive across 50 countries, behind only Algeria, Venezuela, and Cameroon. 

That’s broadly consistent with research by the US Department of Energy several years ago; it found that oilsands bitumen produced three times more emissions per barrel than conventional oil. 

\textsuperscript{x}
The amount of emissions per barrel for oil production in Canada has actually gone up over the recent decades. The emissions intensity of oilsands, specifically, has decreased since 1990, primarily due to the use of natural gas, cogeneration and efficiency measures a decade ago. Between now and 2030, the Government of Canada foresees no improvement in GHG emissions per barrel in oilsands production, since improvements in technology will be offset by “declining reservoir quality, aging of existing facilities, and shifts from mining operations to more emissions-intensive in situ extraction processes.” Bottom line – there are some projects that are cleaner, but the industry average is not getting better.
The fact is that Canadian oilsands are some of the highest-carbon resources in the North American market.
And oilsands have some of the highest costs per barrel of production on the planet.
International oil majors are already recognizing Canada’s baked-in disadvantages. And they’re moving on.

You were here when it was playing out in real time, so you don’t need me to belabour the details. Over a period of a few months in 2016 and 2017, Statoil, ExxonMobil, ConocoPhillips, Total, Shell, and Japex all “de-booked” significant holdings in the oil sands. And the fearmongering that those decisions were driven by the carbon tax is simply not true.
The markets are changing, and it’s not just oil majors moving. It’s also major financial institutions. They are specifically moving away from oilsands, but increasingly we are hearing commitments on restricting insurance and investment in all new oil and gas projects.

Major financial institutions, including the World Bank, AXA and ING, have committed to no longer financing or insuring new oil and gas projects and infrastructure. In addition, 140 of the world’s leading economists have called for an immediate end to investments in new fossil fuel production and infrastructure, and encouraged a dramatic increase in investments in renewable energy.
Earlier this week, Dutch investment group NN said:

- **If global warming is to be kept below 2 degrees in line with the Paris Agreement, we believe oilsands should not be developed. After evaluating the oilsands sector, we concluded exclusion sends an important signal in support of the quest for alternatives.”** – Dailah Nihot NN Group Management Board, October 2018

Aside from the critical global imperative to constrain emissions from the oil and gas sector, there is an emerging economic threat to future growth.
The world is changing quickly. Recent trends point to a faster move globally toward the decarbonization of transport and electricity, faster than anyone ever thought possible.
My point is that, globally, the energy system is transitioning from a system based on fossil fuels to one based on different energy sources that are cleaner. Respected energy analysts and the oil companies themselves are now talking about peak oil demand.

And while there is no end to the different models, this one comes from Shell.

All the models have the same structure that we learn from history – innovation results in high cost, high risk and niche products. Demand for old technology peaks. New technology gets cheaper, and then there is a period of rapid change. Think fax machines. Blockbuster to Netflix. Horse and cart to combustion engine. Disruption, not linear change.
The change we are witnessing in our lifetimes is in part because of the growing impact of climate change, but it’s also because of technological advancements and economies of scale that have led to massive drops in the price of renewable energy.

The cost of electricity from solar and wind has fallen to parity with that of fossils. By 2020, they will likely be cheaper than fossils in every major area of the world.

Wind in the United States is down from $50 to $20 per megawatt-hour in just eight years – that’s just 2¢ per kilowatt-hour. Solar was down to 2.91¢/kWh in Chile and 2.42¢ in Abu Dhabi in 2016, and it’s been falling since.

And battery storage – which is often touted as what will hold electric vehicles back – is becoming cheaper and cheaper, meaning that
electric vehicles could be cost comparable with conventional cars by the early 2020s.

Electric vehicles are small in number. EV sales in 2017 were one million out of total vehicle sales of 85 million. And there were only three million EVs out of more than 800 million cars on the road.

But look at the trends. In 2017, they made up 22% of the growth in demand, and at current growth rates they are likely to take all growth by 2023.

This is similar to the transition from horses to cars after 1900. Horse demand peaked when cars made up just 3% of their number.

Change is not linear. Peak moments are followed by quick change.
Peak fossil fuel demand will come when non-fossils take all the growth in demand.

Estimates vary, but some say we can expect peak oil demand by as early as 2022. In the majority of the scenarios, it happens by 2030. This one is from Carbon Tracker, using BP data.

So why are these projections important? They are critical because we use oil demand projections to analyse the potential for success – to make decisions like building the Trans Mountain pipeline. Industry likes to argue that we will need oil for decades to come. But how much? And where will it come from? Most global projections say as oil demand peaks and then declines, the first oil to go will be the most expensive and the most carbon-intensive. We need to plan for that.
Now I want to turn to Trans Mountain. I will start with the implications of these market changes.

As we’ve seen, the overseas markets in Asia and India that we hear so much about have a number of cheaper, cleaner, more convenient options available. We may also be getting an incomplete picture of how much of that oil they’re going to need, or for how long. The Canadian Association of Petroleum Producers relies on outdated International Energy Agency figures to project combined oil demand in China, India, and Japan at 27.4 million barrels per day in 2040.
Last year, China announced it will require one-quarter cars to be electric by 2025, and will ultimately ban fossil fuel cars. The UK, Norway, France, California, India and The Netherlands have proposed policies to ban fossil fuel cars.

The uptake of EVs is going to affect oil demand. If it happens as quickly as Bloomberg expects, for example, it will reduce oil demand in 2040 by eight million barrels per day—that’s equivalent to all Saudi exports. It will reduce demand by almost three times by what Canada produces.

And yet we continue to argue that we need new fossil fuel infrastructure and expansion of the industry.
We also hear a lot about the price differential and how much money we are losing by not building the Trans Mountain pipeline. That there is a higher price in Asia.

There are three elements to price differentials: quality, transport cost, and supply/demand. Alberta can't do much about its quality and transport cost.

Oilsands require a heavier refining process. That's more expensive. We have a big country. Transport costs are high.

The US Gulf Coast is the world’s largest concentration of the refineries needed to refine heavy oil, and Canadian-equivalent heavy crude has been trading there at a $2–$3 per barrel premium compared to Asian markets. Transport costs to the US Gulf Coast are lower than sending oil to Asia via TMX and tankers, which raises the total price premium compared to Asian deliveries to $4–$5 per barrel.

Improving pipeline capacity might create a marginal improvement for Canadian producers. It cannot overcome the distance, low quality, refinery industry trends and existing trade relations that push it out of the money. The onset of new international marine sulphur guidelines in 2020 will only make the picture worse.

The bottom line is that if getting oil to Asia was our silver bullet for getting a better price, the oil in the existing Kinder Morgan pipeline would be heading to Asia. It’s not. It’s heading to California and the Gulf, where the refining capacity for heavy crude exists.

We could build 10 pipelines and it wouldn’t fix the price problem or ensure we have a resilient economy.

We frequently hear the refrain that we can grow the industry – we can build Trans Mountain and even Teck Frontier and still be addressing climate change.

The National Energy Board, Kinder Morgan and the Canadian Association of Petroleum Producers all use a business-as-usual
market economic analysis as the basis for the business case for these projects. The International Energy Agency notes that business-as-usual will lead to catastrophic warming. Do we really want to base our future on plans that assume failure in the effort to keep the world habitable? It doesn’t seem too much to ask our decision-makers that they align our planning and project decisions with a *habitable* world.

If we look at the emissions associated with the projects and growth of the oilsands, it’s clear the math just doesn’t add up. Emissions reductions have to come from somewhere.

A quick look at Canada’s current and projected emissions trends tells the story. We are reducing emissions as a nation. We have a long way to go. We are nowhere near meeting the targets the Harper government set, which many have criticized as being too weak (including Prime Minister Trudeau).
In 2016, oilsands emissions were 72 Mt and rising. In all, the oil and gas sector is responsible for 183 Mt of emissions, the highest and fastest-growing source of GHG emissions in Canada.

The feds figure oilsands emissions will grow to 115 Mt in 2030, and oil and gas emissions (including those from oilsands operations) will grow to 215 Mt that same year. That’s even if everything they’ve proposed in their national climate plan actually happens.

Unlike conventional oil development, oilsands projects are designed to produce steadily for decades. Once they’re built, their financial structure makes early retirement of projects difficult. High production levels, high carbon intensity, and long production are the perfect storm which leads to extremely high cumulative emissions from the sector over time. Similarly, new pipelines which facilitate oilsands growth would create incentives to fill them for upwards of 50 years.
If Canada is to reach its existing 2030 GHG emission reduction target under the Paris Agreement, national emissions will have to shrink to 512 Mt. Let’s assume for now that this “highly insufficient” target is kept, even though Minister McKenna has committed to strengthening it.

Under this scenario, assuming that the oilsands industry respected the emissions cap, an industry representing 2.5% of Canadian GDP would be using 22% of Canada’s GHG allocation. The oil and gas industry as a whole would be responsible for 42% of Canada’s GHG emissions in 2030. This means that, for Canada to reach its 2030 target, the rest of the Canadian economy would have to cut its emissions almost in half (43%), while the oil and gas industry increased its emissions by 17%. That's not fair. Or possible.
In 2050, the industry would be using up 79% of Canada’s allocated carbon. You can see the magnitude of the challenge, and the starkness of the GHG inequity between fossil fuel industries and every other business and every other part of the economy.

It’s not actually possible for all of Canada agriculture, transportation, and other industries to have only 21% of the carbon budget. We couldn’t do it even if we banned the sale of all fossil fuel cars in Canada today and legislated fuel switching from natural gas to electricity for heat.

The reality that no one wants to talk about is that oilsands emissions will need to decline over the next few decades, just like every other business.

Should we not be planning for this? These are hard questions, but if we want to protect workers and their families to ensure safe, reliable jobs, we cannot continue to ignore that the world is changing and we must change with it. That means planning for realistic production levels. It means building infrastructure to support the new economy. If there is one thing that I expect we can all agree on, it’s that Albertans are innovators and hard workers. Builders. And we need to have a realistic conversation about what we are going to be building in Alberta and in Canada, and how we can better support other sectors and industries to grow and thrive.

I spent the months this summer on the blockades on Burnaby Mountain. Jason Kenney and others have criticized me for that and tried to discredit anyone who has taken that difficult stand.

Here is the thing. I don’t like jail. No one does. Civil disobedience is a last resort, and in fact has been necessary throughout history at moments when our leaders have failed us. When decisions are made that are not just, that are not towards the public good but unfairly benefit some and have a negative impact on the majority.

The rule of law is the principle that all people and institutions are subject to and accountable to law that is fully applied and enforced.
Respecting the rule of law would have meant this project went through a full and unbiased review process. This was not the case. Even Trudeau criticized the Harper government’s process: It limited public participation, narrowly defined the scope of what could be reviewed, didn’t allow cross examination – I could go on.

And, most importantly, as we all found out when the courts quashed the pipeline approval – the government botched its duty to respect human rights and consult and accommodate First Nations – the court called the federal team “mere notetakers”.

Later, it was revealed that the Trudeau government instructed public servants to make sure the review process ended in approval, and Trudeau himself acknowledged that the decision to move forward on this project was made as a deal with Premier Notley, long before the risks were assessed or Indigenous consultation was complete.

We are better than this.

The people I have stood beside on the blockades are not taking their decision lightly. They have tried everything else. They are climate scientists who were ignored in the review, doctors, teachers, Indigenous leaders who feel so strongly they are willing to risk their freedom. Some of them are in jail now. Risking their jobs, handing their children over to others to care for while they are in jail. The far majority of them have never been in a courtroom, let alone a jail cell.
Susan Lambert, former president of the BC Teachers’ Federation, arrested and sentenced

Arrested June 30 blocking Trans Mountain pipeline construction in Burnaby, BC

Sentenced to 7 days in jail

“

We are here as faith leaders in solidarity with Indigenous peoples, because they have called us to make real our commitment to Reconciliation; to make real our commitment to the United Nations Declaration on the Rights of Indigenous Peoples.

-Reverend Laurel Dykstra, Anglican Diocese of New Westminster, BC
“Saying 'no' to the Trans Mountain pipeline not only protects the hundreds of thousands of jobs in British Columbia that depend on a clean, protected environment --

Saying 'no' is a crucial signal to companies, industries and investors that we want to build the future in areas like clean energy and technology.”

Tim Bray, tech entrepreneur and founder of OpenText, Canada’s largest software company

Romilly Cavanaugh, former Trans Mountain engineer, arrested for blocking pipeline construction site

If there is a tanker spill or spill from the pipeline itself, the best Trans Mountain will be able to do is between 10 and 20% spill recovery.

We lived and worked in fear when I worked for Trans Mountain, because the reality is that no amount of equipment or people is going to change the fact that in the event of a spill, they will be able to recover very little.”
These are not foreign-funded radicals. They are real people. This is homegrown Canadian resistance to Trans Mountain – professionals, doctors, lawyers, clergy, scientists getting arrested on Burnaby Mountain. Opposition to the project is broad and deep in British Columbia: 19 municipalities, the BC government itself.

Locals have good reasons to oppose it: Trans Mountain and the proposed expanded tank farms are next to the second-largest university in BC. There are homes and elementary schools a block away from the tank farm. The local fire chief has said that responders cannot protect people’s safety or evacuate in an accident. In Chilliwack, a pipeline leak would cause irreparable damage to drinking water. In Vancouver Harbour, a leak could destroy a way of life for Tsleil-Waututh and Vancouverites alike.
Thousands of people have protested in BC, and will continue to take a stand, because this is about more than a pipeline. It is a fight about integrity, honour and rights.

It is also clearly about whether or not Canada – like both the Trudeau and Notley governments promised – will lead in defining a path forward on critical international commitments such as the Paris climate accord and the United Nations Declaration on the Rights of Indigenous Peoples.
Recently, the court found that in approving the pipeline:

- “Canada failed in Phase III to engage, dialogue meaningfully and grapple with the real concerns of the Indigenous applicants so as to explore possible accommodation of those concerns. The duty to consult was not adequately discharged.” – Madam Justice Dawson

150 nations will be impacted by this project. Only 42 support it; over 100 nations have withheld consent. Though the point is not how many do or don’t support. This isn’t a voting process. These are individual Nations with individual rights over their territories. Regardless of the numbers, Indigenous rights – which include the use of their territories to hunt and fish, to traditional foods and to clean water – are human rights, and you don’t get to support the rights of just some humans.
The majority of the First Nations impacted by the project oppose it, but that’s not the point of human rights. It’s not about tallying up a majority. Quite the opposite—human rights protect the minority. Each nation must be consulted, and their concerns must be taken into consideration and addressed. If the concerns cannot be mitigated and Indigenous rights would be violated, a project cannot go forward. This is not about a veto, it’s about redefining “national interest” and therefore project approval in the era of reconciliation.

And then there are the Orcas.

This new pipeline project would increase the overall capacity of the existing pipeline from 300,000 to 890,000 barrels per day. A seven-fold increase in oil tankers. The Tsleil-Waututh First Nation and nature organizations argued in court that the NEB violated the law by not including the impacts of all this added marine shipping.
The recent court decision found that:

- “The unjustified exclusion of marine shipping from the scope of the Project led to successive, unacceptable deficiencies in the Board’s report and recommendations. As a result, the Governor in Council could not rely on the Board’s report and recommendations when assessing the Project’s environmental effects and the overall public interest.”

So what would happen if the NEB actually took into consideration the impacts of all those Aframax tankers on the endangered Orca population? In its May 19, 2016 report to the government, the board noted that the oil tankers from the expansion “would travel through critical habitat that had been identified in the killer whale recovery strategy and is likely to result in significant adverse effects to the Southern resident killer whales and traditional Indigenous use associated with the whales.”
This is a bad project that has had a bad process. It is being sold as the holy grail to our future prosperity. But given that it is now publicly owned (I think we each own about an inch of it now), and if built it will cost taxpayers close to $10 billion, imagine what we could do with $10 billion?

A national housing strategy would cost $4 billion a year.

$15-per-day daycare across Canada would be $5 billion.

For $10 billion, we could give clean drinking water to every First Nations community across Canada. With gold-plated taps.

I am sure we will hear from Premier Notley that the pipeline is essential to our economic health, to keeping our hospitals and schools open. It is true that the oil and gas sector is important to
Alberta’s economy. But it’s not the majority of the economy – it’s 30% in Alberta. What about the other 70%? We need to be honest about the impacts and costs. The fact is that we are getting less and less from oil and gas production, and the costs are racking up.

Royalties are the principal source of public revenue from oil and gas. Data from the Canadian Association of Petroleum Producers and the National Energy Board show that the royalties paid by industry fell by 75 per cent from 2000 to 2016, a period in which production increased by 29 per cent.

So as citizens we are selling more and more and getting less in return. And that’s not even looking at the massive taxpayer liability stacking up due to clean-up costs: According to the Alberta Energy Regulator (AER), less than three per cent of the conservatively-estimated $27 billion needed to reclaim existing oilsands mining sites is currently held in securities by the province.\(^\text{xxvi}\)

And the fact is that numerous reports from leading economists and banks have noted that the economic cost of inaction on climate is much higher than action now to build a clean economy.\(^\text{xxvii}\)

The creation of a more diversified economy is not going to be easy. The transition to cleaner, safer renewable energy systems will not happen overnight. But no one is saying it can. This is not about whether oil and gas jobs are there tomorrow. It’s about whether we are choosing to expand this sector at this critical moment in history, and how we are planning to ensure security and prosperity in the long term.

Communities, families, workers deserve a plan that takes a proactive approach to economic diversification and job retraining so we are prepared for a low-carbon future. Without it, we will likely be faced with further unemployment and social consequences as a result of stranded assets and poor planning.

It is possible to make the changes we need to make. To create a future that is not only healthy and safe but also exciting.
Here is the good news: We are living one of the most challenging times in human history; we are also living one of the most exciting industrial tipping points in human history. We are literally re-envisioning how society functions. Before our eyes.

Slide Cities, States, Countries around the world are all committing to move to 100% renewable energy along with big name businesses...

Green is the New Black—and it’s Good Business

96 cities, states, countries around the globe have set 100% renewable energy targets, along with big name businesses.

“The race for renewable has passed a turning point. The world is now adding more capacity for renewable power each year than oil, natural gas and coal combined.”
- Bloomberg New Energy Finance, April 2015

- “Global investment in renewable energy now outstrips investment in fossil fuels.”
- Bloomberg New Energy Finance, 2018
Canada and Alberta, along with the rest of the world, will move to a low-carbon economy. **By design or eventually by default.** If it is by default, there will be more casualties, more disruption. More negative economic consequences. Our prosperity, our security will be better served by planning for this future.

Our job as citizens, as voters, as parents is to encourage that change, to make sure our elected officials know it’s a priority, and the senior management in industry, to act according to our beliefs.

While I admire the many brilliant minds at work in Canada’s oil and gas industry, it is time for our elected leaders to focus on other industries too. To recognize that what is good for the oil companies in today’s economy might not be good public policy. Change is hard, but by refusing to face the need to plan for a just transition, we are doing workers and their families a disservice. If we have learned anything from the many boom and bust cycles of a resource-dependent
economy over the last decades, it should be that refusing to address hard issues and plan will only hurt us in the long run.

There are moments in our history where our politicians fail us, where the societal change that is required is such large, big shift that our laws have failed to keep up. Civil rights, women’s right to vote –

And that is true today – on climate change and reconciliation with Indigenous peoples.

These are not issues of right or left. All parties, all governments will have to be pushed and pulled to wean us off fossil fuels, to act quickly enough that you and our kids have the choices our generation has had, the freedom we have. They will have to be pushed to ensure that Treaty rights are respected, that those communities impacted most heavily by the fossil fuel economy of the past are respected and supported.

Change is never easy. Our governments need to hear from us. Your students need to hear from you. They need to hear an open, respectful dialogue grounded in the science that does not turn away from the hard stuff. We need to face these conversations and not silence dissent.

Do you know what the most common question I get from students is? “Do we still have a chance?” While it would appear from the news that we get stuck in the same debate, the next generation is not stuck. They have grown up with it. They know. And they want to know what we can honestly do that will be fast enough to make a difference. Fast enough to keep us safe.

These issues can be overwhelming, but the fact is that we have the capacity to make the changes that need to be made, and remarkable change can happen in our lifetimes. I want to end with a story that some of you may recognize from the last chapter of my book.
After attending the UN negotiations in Bali, I spent a week with my ninety-two-year-old grandmother, not long before she died. One day we were sitting in the hospital and I told her about my despair. She said, “I don’t want to hear any more about how hard it is, how big it is, and that you don’t know if it can work. When your mother was growing up, when I was having my seven children, we didn’t have a phone, we had a party line. We didn’t have a car. No one had their own car. We had just gotten electricity. We didn’t have computers. We didn’t have cellphones. No one had even thought of them yet—let alone this raspberry you’re always holding,” she said, looking at my ever-present BlackBerry.

“I never would have thought that in my lifetime I would be sitting here talking to my granddaughter about what the world was like, and it would be an entirely different world. The way we
communicate is different. The way we move about the world is different. By the time I was an adult and having children, I had never met anyone who had been on a plane. You need to hold on to the fact that the world can entirely change in your lifetime.”

So when I do this work every day, I’m holding on to the notion that one day I’m going to be sitting with my grandchildren telling them about this crazy time not too long ago when we were destroying some of the last of the world’s old-growth forests to make catalogues and toilet paper, this crazy time in our history when we clawed at the earth to get at the last of the oil, a simply crazy time in our history when we used to fill our cars with gas. And they will barely believe me, because the world will be such a different place.


xx Ibid.


xxiii http://aptnnews.ca/2018/07/03/weve-got-new-trans-mountain-data-and-were-sharing-it/


xxv science.sciencemag.org/content/361/6405/851


xxvii https://www.theguardian.com/politics/2006/oct/30/economy.uk