WHAT HAPPENS WHEN THESE IMPORTANT CONVERSATIONS DON'T HAPPEN? When there isn’t consultation, what we have is we have ‘no.’ We don’t have ‘maybe,’ so don’t have ‘let’s work together and collaborate to address the issue,’ people just say no. And if there’s too much opposition, the government will eventually just say no as well.

Pipeline is important to the Canadian economy as trade-enabling infrastructure; we need them to get our resources to new markets, but we need to ensure all voices are heard in the consultation process.

DO YOU FEEL THE INDUSTRY TRYING TO IMPROVE? The industry wants to be ahead of regulations, and the CEPA Integrity First program will help the industry to raise the bar on their operations, collectively. It’s about focusing on the areas people are concerned about, as well as some things they might not be thinking about, such as worker safety. A successful Integrity First program will go a long way in helping to gain trust and social license for pipeline operations.

HOW COULD THE INDUSTRY IMPROVE ITS RELATIONSHIP WITH CANADIANS? Relationships are about people, and sometimes there’s a role for information pieces, a role for social media. But in the course of the day you can’t beat face-to-face. I think people need to become more familiar with the faces behind the industry and hopefully that will lead to a greater level of trust.

We’re in a transition period where we need all types of energy to be working for us to make the economy go and to provide the energy we need as a population.”

Valerie Roy is the CEO of the Atlantic Chamber of Commerce and a member of CEPA’s External Advisory Panel (EAP). As an EAP member, she listens to what people in her area think about pipeline projects and shares insights with the pipeline industry.

WHAT ARE YOU HEARING FROM PEOPLE IN YOUR AREA? The pipeline industry is not trusted; people are concerned about spills and the environment, and particularly in our region, water resources. They don’t know who is responsible and who will pay when things go wrong.

WHAT SHOULD THE INDUSTRY DO ABOUT THESE CONCERNS? It comes down to communication—very early on—‘what are the facts’—they might see a headline in the newspaper, but the general public isn’t in the (pipeline) business, so they really don’t have all the information.

The industry needs to explain what it means when they say they’re going to build a pipeline—where is it going to go, what are the safety factors during construction? And once the pipeline is constructed, what are the ongoing safety factors? Monitoring, emergency preparedness, etc?

There’s a lot of talk about transmission pipelines, but what’s actually true? And what should we believe? Most of us have a lot of unanswered questions, as well as some pretty strong opinions.

Pipelines are part of a complex, emotional issue that stems in large part from our level of comfort with fossil fuels altogether. We’ve seen the damage that can result when things go wrong. And we worry about the impact these resources have on our planet, our communities and our children’s futures.

On one hand, we recognize the need for oil and gas products to sustain the lifestyles we have, and understand that they are a big part of our economy. But on the other hand, we’re deeply concerned about the safety of our communities and our environment.

For many, a move to renewable energy sources isn’t come soon enough, yet we’re firmly entrenched in the energy infrastructure—and consumption habits—of the past.

SO, HOW DO WE MOVE FORWARD? While there may be many possible solutions out there, each must be carefully considered and take into account all perspectives and voices.

That’s where this book, the pipeline industry, and you come in—we need to know where we stand today and how we are making improvements for the future. We are all an important part of the conversation.
We live in a huge, northern country with lots of remote places, and the typical Canadian lifestyle uses up a lot of energy.

Even as our thinking and habits become more focused on reducing our energy demands by becoming more efficient, making the transition to cleaner energy sources takes time. More than half of our homes are heated with natural gas, and nearly all of our transportation energy comes from refined petroleum products.

Many of the products we use daily – plastics, pharmaceuticals, chemicals and lubricants – also come from petroleum. While we may still rely on fossil fuels for some time, what we can control now is how we safely transport them from place to place.

Plastics, pharmaceuticals, chemicals and lubricants – also come from petroleum.

Energy Pipeline Association (CEPA) recognizes it can always make improvements to its operations.

While its safety record is excellent, the transmission pipeline industry is focused on improving industry performance and meeting stringent regulations.

Safety is the focus at every stage of the pipeline lifecycle – pipelines are designed, built and operated to be safe, reliable and sustainable.

For CEPA members, a 99.999% incident-free record is not good enough.
CAN WE USE ROAD AND RAIL TRANSPORTATION INSTEAD?

CONSIDERING THE ALTERNATIVES

Canada is vast, and we must ship energy across long distances to reach the people who need it.

Above-ground alternatives to transmission pipelines like trains and tanker trucks are used in the oil and gas sector, but they’re not as cost-effective or reliable as pipelines over long distances. It would take 15,000 tanker trucks a day to move the same amount of oil Canadian pipelines deliver daily, creating a lot more congestion on our highways.

Underground pipelines require significantly less energy to operate and have a much smaller carbon footprint than road and rail transportation. That’s why pipelines are a preferred choice for reducing the impact transporting oil and gas has on our environment.

97% of Canadian natural gas and crude oil production is transported by transmission pipelines.

Canada’s transmission pipelines companies operate 119,000 kilometres of pipelines in Canada.
We know that building a pipeline has some kind of effect on the surrounding environment, so the aim is to significantly reduce that impact through stringent environmental regulations and best practices that govern pipeline construction.

Every pipeline has its own environmental protection plan that’s unique to the animals, waterways and vegetation in the area.

For animals, this includes identifying sensitive species, adjusting the timing of construction to avoid nesting and breeding seasons, doing follow-up studies to see how their populations respond to the construction phase of the pipeline lifecycle, to ensure all concerns and perspectives are considered.

With waterways, studies are done to determine the safest location for the pipeline. Pipelines especially designed for operation in water are used, banks and slopes at crossings are monitored to make sure they remain stable, and the flow of product in the pipe is carefully observed 24/7.

Vegetation is also assessed, biosecurity practices are used to avoid introducing invasive species and construction schedules may be adjusted to avoid growing seasons. After construction, the original soil is replaced, vegetation is replanted and the right-of-way re-seeded.

And in all cases, pipeline operators must restore the land to as close as possible to its original condition.

By following these guidelines and constantly improving how things are done, pipeline operators have vastly improved their processes and significantly reduced the impact of their operations.

**WHAT ABOUT COMMUNITIES THAT ARE AFFECTED?**

It’s about respectful two-way constructive engagement with Canadians.

**ENGAGING STAKEHOLDERS IN THE PROCESS**

Before a pipeline project is built or expanded, operators must first learn about the potential impact it could have on the community.

**Pipelines are in communities all over our country and have been for over 60 years, so operators have a huge responsibility to ensure they are safe and secure. And people within these communities are understandably concerned about how pipelines will affect their quality of life.**

So before any pipeline projects are built or expanded, operators must first learn about the potential impact it could have on the community. They meet with a variety of different stakeholders to gather information about the needs, issues and opportunities a project may create.

This is just the beginning of the conversation – pipeline operators engage with stakeholders at each stage of the pipeline’s lifecycle, to ensure all concerns and perspectives are considered.

By being transparent, minimizing any negative impacts and maximizing positives like job creation and tax revenues, pipeline operators maintain an open dialogue with, and seek positive results for, communities.

**BEENEFICIAL AND CRITICAL RELATIONSHIPS**

CEPA members develop long-term, mutually beneficial relationships within communities by focusing on job creation, using local businesses when possible, and providing tax revenues. For example, in 2015, CEPA members spent $4.8 billion purchasing goods and services in local communities along our pipeline routes. Members are specifically working with Aboriginal communities and governments to improve their participation in the consultation process and increase the economic benefits they receive from pipeline construction and operation.
Canada’s transmission pipelines are responsible for one per cent of the country’s total emissions.

Climate change is a huge concern for everyone. To address this issue, CEPA members have climate change and environmental sustainability programs in place, and continuously adopt new best practices, programs and technology that limit or reduce greenhouse gas (GHG) emissions.

Natural gas pipeline operators are also working to reduce GHG emissions from their pipelines in three critical ways – by reducing their use of fossil fuels:

**ONE**
Cause: Compressor Stations
Solution: Replacing old compressor-station equipment with energy-efficient technologies to reduce methane leaks.

**TWO**
Cause: Venting
Solution: Using technologies that divert or capture methane during maintenance.

**THREE**
Cause: Fugitive Emissions
Solution: Employing portable gas or ultrasonic detectors to find small leaks in pipes so they can be pinpointed and repaired more quickly.

Pipeline operators also have comprehensive emergency response plans in place, and conduct regular emergency response exercises – in both summer and winter, and for both land and water incidents – to ensure the plans work. These plans are required by law and are specific to each pipeline. When it comes to safety, CEPA member companies cooperate. They realize any incident – large or small – hurts the credibility of the entire industry.

One of the most important safety measures the industry has in place is being prepared for an emergency.

To evaluate the effectiveness of MEAA, CEPA members conducted a joint emergency management exercise, including testing their ability to request assistance, follow response procedures and distribute resources. The outcomes from the exercise were used to improve processes and procedures for the future.

**HOW ARE PIPELINE COMPANIES ADDRESSING CLIMATE CHANGE?**

**REDUCING GREENHOUSE GAS EMISSIONS**

Pipelines are governed by regulations that cover their entire lifecycle – from design and construction, through operation and maintenance, and eventually to retirement. These regulations are created by provincial or national regulators (depending on where the pipeline operates), based on standards by the CSA Group (Canadian Standards Association) and other government organizations. Regulators ensure pipelines are inspected and audited regularly, and operators are held accountable for their safe operation. Regulators can also severely penalize pipeline companies that don’t comply with their standards. These penalties can include revoking authorization for projects, fines, halting or restricting operations, and even criminal charges.

CEPA members have trained crews standing by to respond quickly with oil spill containment and recovery equipment (called OSCAV units) to contain the leak.

**1. COMPLIANCE**
Inspecting and auditing pipelines over their lifecycle.

**2. REGULATION**
Ensuring pipeline operators are accountable for safe operation.

**3. COMPLIANCE**
Inspecting and auditing pipelines over their lifecycle.

**HOW ARE PIPELINES REGULATED? WHO ENFORCES THEM?**

**GROUND RULES**
The safety mandate for federal and provincial pipeline regulatory bodies encompasses three main areas:

1. **PUBLIC INTEREST**
   Determining if the pipeline project is in the public’s best interest.

2. **REGULATION**
   Pipeline operators protect the pipeline against corrosion, do regular maintenance and surveillance, and monitor the entire system from sophisticated control centres.

3. **COMPANIES**
   CEPA members have comprehensive emergency response plans in place, and conduct regular emergency response exercises – in summer and winter, and for both land and water incidents – to ensure the plans work. These plans are required by law and are specific to each pipeline.

When it comes to safety, CEPA member companies cooperate. They realize any incident – large or small – hurts the credibility of the entire industry.

**SHARED RESPONSE**
CEPA created the Mutual Emergency Assistance Agreement (MEAA) in 2014, to prepare members to share critical resources, such as equipment or personnel, during an emergency.

**HOW DO PIPELINE OPERATORS PLAN FOR EMERGENCIES?**

**PLANNING FOR THE UNPLANNED**

One of the most important safety measures the industry has in place is being prepared for an emergency.

**Get the details on the work CEPA members are doing to address climate change at www.aboutpipelines.com/en/safety/regulations-and-approvals/ climate-change/**

Learn more about pipeline regulations at www.aboutpipelines.com/en/safety/regulations-and-approvals/
SO, WHAT HAPPENS WHEN THERE IS A SPILL?

WORKING WITH FIRST RESPONDERS

Not only do CEPA members help each other in an emergency, they’re also working to improve their first-responder training programs by learning from member companies and other industries in Canada and the United States. CEPA has an agreement with the Canadian Association of Fire Chiefs (CAFC), to help ensure firefighters are knowledgeable about the equipment and systems of CEPA members that they might encounter during an incident.

CEPA members follow the ‘polluter pays’ model, which means they are completely responsible for a pipeline incident. In fact, the Pipeline Safety Act requires all major transmission pipeline operators to have a minimum of one billion dollars reserved to cover the costs of an emergency.

The majority of pipeline spills are caused by metal loss, materials, manufacturing or construction defects, and cracking.

Most spills are small, pinhole-sized leaks that can be rectified quickly, but occasionally there are larger incidents. When these happen, pipeline operators work together to contain the spill and begin cleanup. As soon as an incident takes place, operators shut down the pipeline and deploy their incident command system. This system uses standardized terminology, a specified chain of command and procedures that define the specific goals, strategies, and tactics to be used. Pipeline operators work as long as it takes to clean up the spill, and return the area to its previous state.

CEPA and our members are working together to achieve a goal of zero incidents – it’s our commitment to Canadians.

One of the most important ways of doing this is by fostering a safety culture – a mindset shared by everyone within an organization and supported by business leaders.

We’re also leading initiatives like CEPA Integrity First®. Through this program, our members share best practices, operate transparently and cooperate and share resources. This is allowing CEPA members to rapidly advance their practices and develop innovative methods to transport energy safely.

The External Advisory Panel (EAP) also guides us by representing a wide variety of voices including Aboriginal Peoples, environmental experts, first responders and landowners on issues related to the pipeline industry. The EAP advises CEPA’s board of directors and Integrity First.

Industry collaboration is key to improving pipeline operators’ performance and earning the trust of Canadians.

For pipelines that cross water, their emergency response plan includes information about the specific waterway – including currents, spring run-off and habitats.

SO, WHAT HAPPENS WHEN THERE IS A SPILL?

TAKING RESPONSIBILITY FOR AN INCIDENT

For pipelines that cross water, their emergency response plan includes information about the specific waterway – including currents, spring run-off and habitats.

The majority of pipeline spills are caused by metal loss, materials, manufacturing or construction defects, and cracking.

Most spills are small, pinhole-sized leaks that can be rectified quickly, but occasionally there are larger incidents. When these happen, pipeline operators work together to contain the spill and begin cleanup. As soon as an incident takes place, operators shut down the pipeline and deploy their incident command system. This system uses standardized terminology, a specified chain of command and procedures that define the specific goals, strategies, and tactics to be used. Pipeline operators work as long as it takes to clean up the spill, and return the area to its previous state.

CEPA members follow the ‘polluter pays’ model, which means they are completely responsible for a pipeline incident. In fact, the Pipeline Safety Act requires all major transmission pipeline operators to have a minimum of one billion dollars reserved to cover the costs of an emergency.

CEPA and our members are working together to achieve a goal of zero incidents – it’s our commitment to Canadians.

One of the most important ways of doing this is by fostering a safety culture – a mindset shared by everyone within an organization and supported by business leaders.

We’re also leading initiatives like CEPA Integrity First®. Through this program, our members share best practices, operate transparently and cooperate and share resources. This is allowing CEPA members to rapidly advance their practices and develop innovative methods to transport energy safely.

The External Advisory Panel (EAP) also guides us by representing a wide variety of voices including Aboriginal Peoples, environmental experts, first responders and landowners on issues related to the pipeline industry. The EAP advises CEPA’s board of directors and Integrity First.

Industry collaboration is key to improving pipeline operators’ performance and earning the trust of Canadians.

Most spills are small, pinhole-sized leaks that can be rectified quickly, but occasionally there are larger incidents. When these happen, pipeline operators work together to contain the spill and begin cleanup. As soon as an incident takes place, operators shut down the pipeline and deploy their incident command system. This system uses standardized terminology, a specified chain of command and procedures that define the specific goals, strategies, and tactics to be used. Pipeline operators work as long as it takes to clean up the spill, and return the area to its previous state.

CEPA members follow the ‘polluter pays’ model, which means they are completely responsible for a pipeline incident. In fact, the Pipeline Safety Act requires all major transmission pipeline operators to have a minimum of one billion dollars reserved to cover the costs of an emergency.

CEPA and our members are working together to achieve a goal of zero incidents – it’s our commitment to Canadians.

One of the most important ways of doing this is by fostering a safety culture – a mindset shared by everyone within an organization and supported by business leaders.

We’re also leading initiatives like CEPA Integrity First®. Through this program, our members share best practices, operate transparently and cooperate and share resources. This is allowing CEPA members to rapidly advance their practices and develop innovative methods to transport energy safely.

The External Advisory Panel (EAP) also guides us by representing a wide variety of voices including Aboriginal Peoples, environmental experts, first responders and landowners on issues related to the pipeline industry. The EAP advises CEPA’s board of directors and Integrity First.

Industry collaboration is key to improving pipeline operators’ performance and earning the trust of Canadians.

Most spills are small, pinhole-sized leaks that can be rectified quickly, but occasionally there are larger incidents. When these happen, pipeline operators work together to contain the spill and begin cleanup. As soon as an incident takes place, operators shut down the pipeline and deploy their incident command system. This system uses standardized terminology, a specified chain of command and procedures that define the specific goals, strategies, and tactics to be used. Pipeline operators work as long as it takes to clean up the spill, and return the area to its previous state.

CEPA members follow the ‘polluter pays’ model, which means they are completely responsible for a pipeline incident. In fact, the Pipeline Safety Act requires all major transmission pipeline operators to have a minimum of one billion dollars reserved to cover the costs of an emergency.

CEPA and our members are working together to achieve a goal of zero incidents – it’s our commitment to Canadians.

One of the most important ways of doing this is by fostering a safety culture – a mindset shared by everyone within an organization and supported by business leaders.

We’re also leading initiatives like CEPA Integrity First®. Through this program, our members share best practices, operate transparently and cooperate and share resources. This is allowing CEPA members to rapidly advance their practices and develop innovative methods to transport energy safely.

The External Advisory Panel (EAP) also guides us by representing a wide variety of voices including Aboriginal Peoples, environmental experts, first responders and landowners on issues related to the pipeline industry. The EAP advises CEPA’s board of directors and Integrity First.

Industry collaboration is key to improving pipeline operators’ performance and earning the trust of Canadians.
The Canadian Energy Pipeline Association (CEPA) is a non-profit organization representing 12 member companies who operate transmission pipelines to transport virtually all of the natural gas and crude oil produced in Canada to markets across North America.

Since 1993, CEPA and our members have been working together to continuously improve pipeline operations in the areas of safety, environment and innovation. Our members have embraced accountability across the industry, and dedicate themselves to continuous improvement, common metrics and shared best practices.

We believe in the power of transparency among peers – of respectfully challenging one another to improve – and are committed to taking the industry to a higher level of safety and industry performance.

WHAT KINDS OF INDUSTRY-SUPPORTED RESEARCH PROJECTS ARE OUT THERE?

**UNIVERSITY OF WATERLOO**

Metallurgical science experts are exploring ways to improve welding techniques and make pipeline welds tougher—critical for improving pipeline construction and maintenance.

**UNIVERSITY OF CALGARY PIPELINE ENGINEERING CENTRE**

Fourteen interdisciplinary researchers are working to advance research in three main areas—prevention of corrosion and cracking in pipelines, sensor technologies for faster leak detection and monitoring, and reliability and risk assessment using geotechnical modeling.

**THE UNIVERSITY OF BRITISH COLUMBIA PIPELINE INTEGRITY INSTITUTE**

The Institute is helping the transmission pipeline industry reach its goal of zero incidents by researching projects focusing on reducing the risk of damage to pipelines caused by ground movement, the degradation and corrosion of pipeline materials, and monitoring and controlling internal and external pipeline corrosion.

In 2015, the pipeline industry invested $1.3 billion into pipeline safety.

CEPA members have a duty to move energy with care—now and for the future. That’s why the pipeline industry continuously invests in new innovations to ensure Canadians get the energy products they need, safely and reliably.

How are pipeline companies advancing research, technology and innovation?

Canada’s leading experts in pipeline technology are working together to develop innovations that boost pipeline safety.

FULL MEMBERS

- Access Pipeline Inc.
- Alliance Pipeline Ltd.
- ATCO Pipelines
- Enbridge Pipelines Inc.
- Inter Pipeline Ltd.
- Kinder Morgan Canada
- Pembina Pipeline Corporation
- Plains Midstream Canada ULC
- Spectra Energy Transmission
- TransCanada PipeLines Limited
- TransGas Limited
- Trans-Northern Pipelines Inc.

TECHNICAL MEMBERS

- Eners Brunswick Pipeline
- FortisBC Inc.
- Maritimes & Northeast transmission
- Sun-Canadian Pipeline Company Limited

WHO IS CEPA?

ENABLING DIALOGUE, COLLABORATION AND INDUSTRY ADVANCEMENTS

CEPA’s vision is a safe, socially and environmentally sustainable energy pipeline industry for Canadians.
HOW DO I LEARN MORE?

Join the conversation by visiting aboutpipelines.com, emailing us at aboutpipelines@cepa.com or following us on social media.

@aboutpipelines
facebook.com/aboutpipelines
linkedin.com/company/aboutpipelines