

HASAN IMRAN  
Senior Environmental Advisor,  
Climate Change



environment

"TransCanada has one of the best methane emissions management programs in North America. When you compare our emissions to previous years, it's clear we're doing our part, and more, on the issue of climate change."

TransCanada's Environmental Principles provide a consistent, company-wide framework for making decisions and conducting activities to reduce our impact on the environment. That's important since everyone in the company makes decisions that affect the environment in ways big and small.

**Five ways we protect the environment**

- 1** A company-wide environmental management system
- 2** A dedicated team of project managers and environmental scientists, with expertise in, and passion for, the environment
- 3** Activities supporting conservation of fish and wildlife and their habitats
- 4** Active involvement and leadership in multi-stakeholder groups relating to the environment
- 5** An industry-leading program for the monitoring and reduction of greenhouse gas emissions



Photo: Canadian Wildlife Service  
Photographer: B.D. Cottrille



TransCanada selects and funds environmental projects based on their connection to the company's business activities. Since much of TransCanada's work takes place in forested areas, wildlife and habitat conservation are a focus.

#### Site assessment, remediation and monitoring

TransCanada uses a risk-based method to determine how existing sites can best be assessed, remediated and monitored. Our process often involves public and regulatory consultations to create mutually satisfactory results.

#### ENVIRONMENTAL MANAGEMENT

TransCanada pursues a model of continuous scrutiny of our environmental management practices and is always looking for ways to do business with less impact.

Working closely with leading environmental consultants, our Environmental Management Team is constantly exploring ways to conserve and reclaim habitat, and create conditions where wildlife can thrive throughout the areas near our 41,000-kilometre natural gas pipeline system. This includes supporting significant ongoing research into grizzly and woodland caribou habitats.

#### PROTECTING MIGRATORY BIRDS

TransCanada is the industry co-chair of the Canadian Pipeline Environment Committee (CPEC), a multi-stakeholder group of industry and government representatives with an interest in sound environmental management of pipelines in Canada. As one of its primary projects for 2004, CPEC has developed information resources to help pipeline companies protect migratory birds and their habitat in the vicinity of pipelines.

#### DIGITAL ATLAS HELPS DEVELOPERS TAKE CARE

With the right kind of information, land developers can do a better job of safeguarding significant natural environments. Thanks to a digital atlas of the Northwest Territories – a project of the World Wildlife Fund that received support from TransCanada – now they have it. The atlas identifies key environmental features in sensitive areas, giving developers valuable insight into where to locate and how to build future developments.



The intensity of greenhouse gas emissions from our three major pipeline systems has dropped by approximately 50 to 60 per cent since 1990.



For more information on our Climate Change Strategy, go to [www.transcanada.com/social/environment\\_climate.html](http://www.transcanada.com/social/environment_climate.html)

#### MANAGEMENT OF GREENHOUSE GASES AND NITROGEN OXIDES

At TransCanada, we believe the natural gas we transport and the electricity we generate play a critical role in meeting continental energy demand. We recognize, however, that our facilities produce emissions that can contribute to air-related issues. For this reason, management of air emissions and climate change issues are key areas of our environmental stewardship work.

#### GREENHOUSE GASES

As with other areas of environmental management, what you do matters a lot more than what you say. Over the past several years, TransCanada has invested millions of dollars in understanding, measuring and managing greenhouse gas emissions generated by our operations. We have implemented industry-leading

programs such as our Fugitive Emissions Management Program that have allowed us to identify and repair leaks on our pipeline systems through a Leak Detection and Repair Program (LDAR).

In 2004 alone, TransCanada's efforts through its LDAR Program saved 325 million cubic feet of natural gas, equivalent to:

- 166,000 trees planted,
- 33,000 cars taken off the road, or
- 2,150 homes heated and supplied with hot water.

Overall, the greenhouse gas emissions intensity of our three major pipeline systems has dropped by approximately 50 to 60 per cent since 1990. This intensity reduction (that is, reduction in amount of greenhouse gas emissions that are released when moving one billion cubic metres of natural



gas over one kilometre) is a result of the installation of higher efficiency compressor engines and implementation of methane management programs as well as reduced system throughput.

TransCanada uses highly efficient processes to generate electricity. A number of our power generation facilities conserve fuel by using waste heat from our gas turbine generators to produce steam. In 2004, the 165-megawatt MacKay River cogeneration plant came onstream. This natural gas-burning facility provides electricity and steam to an in-situ oilsands plant near Fort McMurray, Alberta at 75 per cent fuel efficiency, approximately twice the level of conventional combustion turbines.

TransCanada also operates two biomass generators in which more than 900,000 tonnes of forestry byproducts are burned to produce electricity. The process is considered carbon-neutral and the facilities use the latest electrostatic precipitator technology to reduce particulate matter produced in the process.

#### NO<sub>x</sub> EMISSIONS

The combustion of natural gas at our power and compression stations produces nitrogen oxide (NO<sub>x</sub>) emissions that contribute to air quality and acid rain concerns. TransCanada uses a combination of methods to meet NO<sub>x</sub> limits established by legislation or by operating permits for our facilities. These include:

- using front-end technologies designed to prevent the formation of NO<sub>x</sub>, such as Dry Low NO<sub>x</sub> or Dry Low Emissions engines,
- trading or purchasing NO<sub>x</sub> emission allowances and credits in regions that have implemented cap and trade programs, and
- avoiding or minimizing NO<sub>x</sub> formation through our choice of process for generating electricity (such as cogeneration).

While absolute levels of NO<sub>x</sub> from our facilities have risen due to the increased amount of gas being shipped and increased power generation, the intensity of emission levels in newer power facilities has been reduced by 75 per cent in the last decade.

### Environmental stewardship

Environmental performance is central to TransCanada's long-term business strategy. We believe that financial performance is enhanced by our strategic investments in environmental stewardship. Similarly, every step we take to sustain the environment sustains the company's future, as well. There's no need to choose between corporate and environmental performance. You *can* do both, and we are.



For more information on our Environment Programs, go to [www.transcanada.com/social/environment\\_climate.html](http://www.transcanada.com/social/environment_climate.html)

### BIOSTABILIZATION WORK AT STREAM CROSSINGS

In 2004, TransCanada's Environmental Management Team began a study to evaluate past projects where a variety of plant materials and reclamation methods were used to stabilize stream banks at pipeline water crossings.

During their fieldwork, TransCanada workers and a consulting firm gathered performance data from 20 pipeline stream-crossing sites in Alberta that were installed in the 1990s. In addition to stabilizing stream banks, the sites played the key role of providing overhanging vegetation cover for fish and other stream life. Both materials and stabilization techniques were observed and evaluated.

In 2005, the group will produce a report that outlines which biostabilization techniques work best under certain environmental conditions, at which times of year.

TransCanada workers will have this information available for the 2005 field season, allowing them to make informed decisions about biostabilization techniques and materials. This, in turn, should improve the habitat recovery at and near these streams.

It's another example of how a simple investment of time and money can pay substantial and almost immediate dividends.

### WILDLIFE PROGRAM: APPLIED RESEARCH

Our Wildlife Program is built on partnerships with advocates and researchers, including:

- **The Boreal Caribou Committee (BCC)**

The BCC researches the impacts of industrial development on woodland caribou, a threatened species in Alberta, and develops guidelines to conserve caribou and their habitat. It's TransCanada's policy to reclaim our right-of-way quickly after pipeline construction, to minimize our impact on caribou populations.

- **The Northern Watershed Project**

This multi-stakeholder research initiative, started in 1999 by the Alberta Conservation Association, is helping government and industry understand how manmade disturbances impact forests and fish in northwestern Alberta. With this knowledge, we can develop effective management strategies for repairing forested areas.

- **Foothills Model Forest Project**

Researchers and specialists are working together to better understand how grizzly bears use their habitat and respond to changing landscapes. This initiative has contributed to TransCanada's efforts to manage human access to our rights-of-way to achieve minimal environmental impact.

ALISON SCHMIDT  
Senior Health and Safety Advisor



health and safety



"At TransCanada, we believe that health and safety incidents are predictable and preventable. Our goal is to have an incident-free workplace."

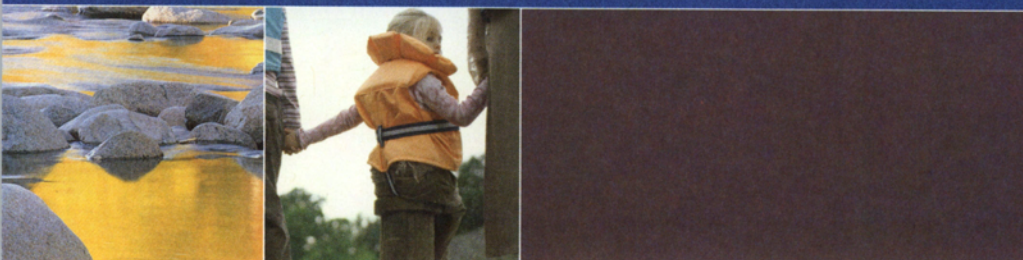
The safety of TransCanada's employees and contractors is always top of mind. The company is committed to having the best safety practices in all aspects of its business.

**Safety – 24 hours a day, seven days a week**

TransCanada's Safety 24/7 program is designed to increase awareness and promote safe behaviours at work, at home and at play. Because a large number of incidents occur away from work, the company encourages people to take a safety-first attitude home with them. The program is increasing awareness of health and safety hazards in the home and community, and helping to mitigate them. For example, in 2004 employees and their families were given access on their home computers to the Safety 24/7 website via the TransCanada portal. The website provides a library of up-to-date and relevant safety information. Our motto: "Because safety matters – all day, everyday."

**Five ways we prevent incidents**

- 1 Technical training
- 2 Role descriptions and accountabilities
- 3 Pre-activity planning
- 4 Site-specific risk assessment
- 5 Obligation to "speak out" about safety







TransCanada has a top-tier health and safety program, which is demonstrated through our strong performance.

**Improving on an excellent record**

We are always seeking to improve our strong safety performance. For 2005, TransCanada is focusing on three major initiatives. The first addresses the crucial issue of interdependent behaviours and actions in preventing workplace incidents. The second is a continuation of the contractor management program that delivered good results in 2004. A third initiative is the development and implementation of a soft-tissue injury reduction program.

**SAFETY IS ATTITUDE**

For TransCanada, safety is a core business strategy that is supported by:

- The establishment of aggressive performance targets.
- Monthly monitoring, measuring and reporting on those targets.
- Committees at many levels within the organization dedicated to health and safety, including the Health, Safety and Environment (HS&E) Committee of the Board of Directors, the TransCanada Management HS&E committee, and

Joint Health, Safety and Environment committees at the employee level.

- Several programs designed to identify, assess, and mitigate occupational health and safety risks, including Job Safety Analysis, pre-job meetings, safety inspections and safety audits.

While TransCanada has strong occupational health and safety programs and performance, we continue to plan for further improvements.

The chart below shows how we compare with our industry peers in safety performance.

**2004 Health and Safety Performance Summary**

	Total Recordable Case Rate*	Away from Work Case Rate**	Vehicle Incident Frequency Rate***
TransCanada	1.19	0.33	2.88
Canadian Energy Pipeline Association average	1.64	0.49	5.87
Canadian Gas Association average	4.31	1.11	3.82

\* Cases where medical aid is required

\*\* Where employees could not work because of an occupational injury or illness

\*\*\* Number of recordable vehicle incidents related to a common exposure base of 1,000,000 kilometres driven