



Champion

NEWS

VOLUNTARY CHALLENGE AND REGISTRY INC. (VCR INC.)

2000 VCR Inc. Leadership Awards and Honourable Mention Winners and Profiles

Introduction

VCR Inc.'s Leadership Awards recognize registry participants for their achievements in reducing Canada's greenhouse gas (GHG) emissions.

The awards are presented each year during the Annual Council of Champions and Leadership Awards Ceremony, held in late February or early March. Awards are granted

based on the achievements of VCR Inc. registrants who have displayed extraordinary commitment, action and/or leadership towards the voluntary reduction of GHG emissions. All winners are recognized as 'Leaders' in their respective sectors. This year's winners and honourable mentions are the following organizations and individuals.

For Sector Leadership: Automotive Manufacturing

Winner: Daimler Chrysler Canada Inc.

From its 1990 base year through 1999, DaimlerChrysler Canada has been able to reduce its energy per vehicle produced by 42.2% from 12.36 MMBTU's to 7.15 MMBTU's. As a result, the auto manufacturer has been able to realize a reduction in greenhouse gas emissions per vehicle produced of 42.3% from 0.647 to 0.373 tonnes CO₂ equivalent over the same period.

The company's most significant commitment to continued environmental stewardship is its goal of having each of its Canadian facilities certified to ISO 14001 by the end of 2001.

DaimlerChrysler Canada is forecasting a decrease in energy intensity per vehicle produced by 1% per year from 1999 actual levels through 2005. Based on this goal, it

expects to achieve a reduction in energy use per vehicle produced of 45.5% over the period 1990 through 2005, resulting in a reduction of 0.30 tonnes CO₂ equivalent of greenhouse gas emissions per vehicle produced.

DaimlerChrysler Canada produced over 794,676 vehicles in 1999 including the LH line of cars, minivans, and full sized vans.

DaimlerChrysler Canada continues to provide North America and the world with affordable, well known products that set exceptional quality standards with respect to performance and innovation. The DaimlerChrysler Canada head office is located in Windsor, Ontario with regional sales offices across Canada.

VCR Inc. awarded DaimlerChrysler Canada its Leadership Award for its better-than-average results in decreasing greenhouse gas emissions per vehicle. Between 1990 and 1999, the company reduced GHG emissions per vehicle by 42.3%. In addition, the company submitted an exemplary Action Plan with future milestones to reduce GHG emissions even

more. Finally, DaimlerChrysler Canada is conducting positive outreach educational activities to reduce GHG emissions with its employees and unions.

Honourable Mention: General Motors of Canada Ltd.

Chemicals (2)

Winners: NOVA Chemicals; DuPont Canada Inc.

NOVA

From 1998 to 1999, NOVA Chemicals' net greenhouse gas emissions decreased from 4,637 kilotonnes (kt) carbon dioxide equivalent to 4,483 kt – a more than three per cent reduction.

The majority of its emissions are direct emissions that decreased from 3,837 kt to 3,665 kt CO₂ equivalent. As a result of the construction of new plants, the start-up of the Joffre cogeneration plant and the expansion of current

facilities during 2000, direct emissions from its plant site are projected to increase to approximately 6,473 kt by 2004.

In 1998, NOVA Chemicals began construction of a \$380-million cogeneration power plant at its site in Joffre, Alberta. The power generated from this facility will produce approximately 1,830 kt less CO₂ equivalent compared to electrical power that would have been generated from conventionally produced power available from the Alberta Interconnected System (AIS).

Based on current knowledge of its net greenhouse gas emissions, NOVA expects that its 2004 net emissions will be below 1990 levels – should the 1,830 kt CO₂ equivalent credit be included, and should company-wide, specifically-planned action be carried out.

NOVA Chemicals is headquartered in Calgary, Alberta, and employs more than 4,700 people around the world. NOVA Chemicals' products are manufactured at 18 production facilities located in Canada, the United States, the United Kingdom, the Netherlands and France.

NOVA Chemicals was awarded VCR Inc.'s Leadership Award for its exceptional Action Plan to reduce GHGs, its senior management commitment to reduce current GHG emissions significantly, its future reduction targets, its investment in offsets, its startup of the Joffre, Alberta cogeneration facilities, and its investment in internal and external education plans.

DuPont

Predicting its projected emissions using a straight-line "business-as-usual" scenario, DuPont Canada Inc.'s total CO₂ equivalent emissions would increase to 15 million tonnes per year by 2003. However, factoring in its greenhouse gas reduction and energy efficiency programs, DuPont forecasts that its total emissions will remain below 1.5 million tonnes CO₂ equivalent per year over the next 10 years. Much of this reduction results from the increased utilization of its N₂O abatement facility at its Maitland site. The company's latest calculations predict that it will achieve a 15 per cent reduction in energy use through documented energy conservation measures between 1995 and 2005, or a cumulative reduction of 1550 TJ (terajoules) in 10 years. This 1.5 per cent reduction each year is equivalent to 6,700 tonnes of CO₂ per year.

DuPont expects to accomplish this by integrating energy conservation measures where possible in its business initiatives and by working toward the ever-increasing utilization of its nitrous oxide abatement system. An increasing percentage of generated N₂O has been abated each year since start-up in 1997. As

a result of this achievement, 85.5 per cent of the nitrous oxide generated was abated compared to the goal of 75 per cent, equivalent to 10,306,000 tonnes of CO₂.

DuPont Canada is a diversified industrial company serving customers across Canada and in about 40 other countries. As well as offering the thousands of products and services of the global DuPont company to Canadian customers, it sells products manufactured in Canada to customers here and around the world. The company employs about 3,300 people.

DuPont won its Leadership Award for the continuous leadership role it has demonstrated through its N₂O abatement facility in Eastern Ontario, its high GHG emission reduction achievements, its ongoing energy reduction rate of 25% per unit over 1990, its forecasts for a further 15% reduction between 1995-2005, and its superior Action Plan to continuously reduce GHG emissions.

Colleges and Universities

Winner: New Brunswick Community Colleges

In an attempt to reduce operating costs, while assisting Canadian governments in meeting Canada's international commitment to stabilize greenhouse gas emissions, NBCC have made a lasting commitment to the reduction of energy use in all their facilities. NBCC officials have recognized the environmental and economic benefits resulting from improved attention to energy management. Their commitment has manifested itself in the form of an existing energy performance contract that is in place and successful to date, and that has reduced energy intensity by 30% over base years in the eight campuses NBCC operate.

Both NBCC and the New Brunswick Provincial Government are promoting NBCC energy efficiency endeavors and dedication towards climate change by establishing links between the colleges, the New Brunswick government, Natural Resources Canada, and the Association of Canadian Community Colleges, in an effort to showcase the results achieved to date.

NBCC operates close to 120,000 square meters of school and office space for more than 8000 students and staff in eight campuses in New Brunswick at: Campbellton, Dieppe, Edmunston, Miramichi, Moncton, Saint John, St. Andrews, and, Woodstock.

NBCC was selected for a Leadership Award as a result of its exceptional reduction Action Plan, its leadership role in the college sector, its achievement of reducing energy intensity by 30% over its base years, and the excellent

use of existing federal and provincial programs to reduce energy consumption and greenhouse gases.

Commercial

Winner: VanCity Savings Credit Union

VanCity Savings Credit Union is committed to conserving electricity and fossil fuels at all VanCity and subsidiary facilities through the use of sound conservation and energy management practices, application of practical new energy-efficient technologies where appropriate, and employee education and training.

VanCity monitors the use of electricity and fuels in its facilities, where possible, and limits or reduces its net greenhouse gas emissions each year in accordance with federal guidelines outlined by Natural Resources Canada for greenhouse gas emissions.

The overall impact on energy costs and greenhouse gas emissions have resulted in the following:

- An annual 4,908,495 kWh increase in electrical consumption between 1992 and 1999.
- An annual 90.7 tonne increase in CO₂ emissions.

Based on energy intensities, due to energy management, the following occurred on a per square meter basis between 1992 and 1999:

- Annual energy cost intensity decreased by \$5 per m², or 20%.
- Annual energy use intensity decreased by 0.4 GJ per m², or 21%.
- Annual equivalent CO₂ emissions intensity decreased by 0.006 tonnes per m², or 20%.

Vancouver City Savings Credit Union provides financial products and services to residents of the Lower Mainland, Fraser Valley and Victoria, British Columbia. Since VanCity was founded in 1946, it has grown to be the largest credit union in Canada, and one of the largest in the world. The 1990's witnessed unprecedented growth in size and assets with membership exceeding 260,000 members and assets over \$6.3 billion. VanCity's branch network has grown to 39 branches.

VanCity Savings Credit Union was awarded a Leadership Award by VCR Inc. due to its outstanding Action Plan, its successful effort to reduce its ecological footprint through financial incentives, its employee awareness program on GHG reduction in addition to its energy efficiency upgrades.

Honourable Mention: Novotel of Canada Ltd.

Electric Utilities

Winner: BC Hydro

BC Hydro's total greenhouse gas (GHG) emissions were substantially lower in 1999 than in 1998, declining 31 per cent to 1,394 kilotonnes of carbon dioxide equivalent. Emissions from BC Hydro's own power generation activity totaled 939 kt CO₂ equivalent, a 38 per cent decrease from last year, while emissions from independent generators who sell power to BC Hydro were down 16 per cent, to 329 kt CO₂ equivalent.

Other GHG emissions from its operations, such as motor vehicle use, space heating at office buildings, and SF₆ losses from transmission equipment, decreased slightly by two per cent to 127 kt CO₂ equivalent.

BC Hydro is the third largest electric utility in Canada, providing electricity and energy services to more than 1.5 million customers in British Columbia. The company is a vertically-integrated utility with significant generation, transmission and distribution assets, managed by a highly skilled workforce of about 5,400 technical, professional and customer service specialists.

Almost all of the energy it produces is hydroelectricity, generated with water collected in storage reservoirs at its 30 hydroelectricity installations. BC Hydro also operates three thermal-generating plants to augment hydroelectricity generation, plus a small number of diesel-generating stations to supply local power in remote areas of the province. Depending on weather conditions and other factors, approximately five to eight per cent of the energy supplied by the BC Hydro system is purchased from independent power producers (IPPs). Sources of this power include small hydro, woodwaste, and natural gas. Purchases from IPPs accounted for six per cent of the energy BC Hydro supplied to customers in 1999. Taking into account these power purchases, BC Hydro supplied 53,721 GWh of electricity to its customers in 1999, and 94 per cent of that was hydroelectricity.

BC Hydro was selected for its Leadership Award in the electric utility sector for five reasons: its outstanding Progress Report; its excellent public outreach program and application of CSA standards; its GHG reduction achievements; investment in offsets and sequestration; and, the organization's overall leadership in the electric utility sector in reducing GHGs.

Forest Products

Winner: Abitibi-Consolidated Inc. (ACI)

ACI's GHG emissions in 1998, at 1.2 million total net tonnes CO₂ equivalent, were 27% Lower than the 1990 baseline emissions of 1.64 million total net tonnes CO₂ equivalent. At 0.503 tonnes CO₂ equivalent/tonne production, ACI's emissions rate was 2.7% below 1990 levels.

For 1997, a more representative year, GHG emissions were 9.4 % lower than the 1990 baseline levels. GHG emissions per tonne of production in 1997, at 0.432 net tonnes CO₂ equivalent/tonne, were 16.4% lower than the 1990 baseline levels.

A single major activity impacting GHG emissions that took place by ACI in late 1998 was the startup of a 15,000 kW hydroelectric power generation facility in Star Lake, Newfoundland. This facility, with its production capacity of 130 million kWh's of electrical energy annually will result in a reduction in indirect GHG emissions.

Abitibi Consolidated Inc. (ACI) is a Canadian company with its head office located in Montréal, Québec. On May 2, 1997, Abitibi-Price and Stone-Consolidated merged to form Abitibi-Consolidated, the world's largest newsprint company, and a global force in the groundwood paper industry. ACI operates 19 pulp and paper manufacturing plants, 14 in Eastern Canada (Ontario, Québec and Newfoundland) 4 in the United States, and 1 in the United Kingdom.

Together with ACI's Asian alliance - Pan-Asia paper Co. - with 4 mills in South Korea, Thailand and China, ACI supplies product to customers in more than 50 countries. ACI's manufacturing capacity is approximately 3 million tonnes/yr of newsprint and 1.5 millions tonnes/yr of groundwood specialty and other value added papers. Through agreements, the Company markets an additional 1 million tonnes/yr of newsprint. ACI directly employs 13,000 employees in its total operations.

ACI was selected for a Leadership Award in the forest product sector due to its tremendous efforts in decreasing its GHG emissions by 27% over 1990 figures, its exceptional Action Plan with targets for the future, and its entity-wide commitment to reducing greenhouse gases with good senior management support.

General Manufacturing

Winner: IBM Canada Ltd.

During 1999, a number of energy efficiency projects were undertaken by IBM Canada's business divisions. The most significant were the replacement of numerous energy intensive water-cooled mainframe computers to new air-cooled CMOS machines. It is estimated that close to 50% of the year-to-year energy reduction reported in 1999 were due to this type of energy efficiency project. In addition to the efficiency processes central to IBM Canada's core businesses, several projects on the Real Estate and Site Operations side were undertaken in 1999.

IBM Canada's direct CO₂ greenhouse gas emissions were 19,388 metric tonnes in 1999 from all sources of energy consumption, down 9,940 metric tonnes from 1990's figure of 29,298 metric tonnes of CO₂. Energy consumption during that time frame also decreased from 591,001 MWh to 467,886 MWh.

IBM Canada Ltd., established in 1917, is a diversified information technology company serving customers in Canada and worldwide. IBM Canada generates value for its customers by developing industry leading computer systems, software, networking systems, storage devices and microelectronics.

IBM Canada Ltd. employs more than 17,000 full-time employees working in more than 150 locations across Canada. Location functions range from manufacturing, to software development, to distribution of products, to retail stores across the country.

IBM Canada was selected for a Leadership Award due to its model Action Plan, outstanding commitment by the company to reduce energy consumption and hence greenhouse gases, its registration with ISO 14001 standard and subsequent in-place environmental management system, its good internal GHG reduction awareness program, and its significant reduction of GHGs despite considerable growth.

Honourable Mention: Orenda Aerospace Corporation

Governments

Winner: Government of Alberta

The Alberta government continues to reduce its overall emissions and has consistently exceeded its annual targets. 1999/00 emissions of 422 kilotonnes of CO₂ equivalent are 19.8 per cent below 1990 levels. The reductions exceed its 1999/00 target by 42 kilotonnes. Its overall target for 2000 of 452 kilotonnes of CO₂ equivalent has also been exceeded by 30 kilotonnes of CO₂ equivalent.

Alberta remains a leader in the National Climate Change Process. As part of this process, the province is developing measures for inclusion in the first business plan under Canada's national implementation strategy. A key component of the national strategy is the theme of "Government House in Order". Tied to this are actions by the Alberta government to reduce emissions from its own operations. The Alberta government will be preparing a new Action Plan with revised targets in the spring of 2001, not only as part of the national implementation strategy, but equally important, to demonstrate its continued support and commitment to the VCR Inc. program.

The Alberta Government was selected for its VCR Inc. Leadership Award for the following reasons: Of the many governments across Canada, Alberta has shown impressive leadership in reducing its GHG emissions and by affirming its commitment to adhere to the voluntary reduction of GHGs through VCR Inc. In addition to exceeding its GHG reduction targets, the provincial government has included climate change modules in its public school curriculum starting in grade 5 and then from grades 7 to 12.

Honourable Mention: Government of British Columbia

Health Services

Winner: University of Alberta Hospital

As a result of Edmonton's University of Alberta Hospital's voluntary initiatives, 1999 emissions of carbon dioxide and other greenhouse gases decreased through more efficient use and consumption of energy. At the end of 1999, 81,356 gigajoules of energy had been saved over the figure of 590,358 gigajoules of energy at the end of 1996.

The University of Alberta Hospital's energy management goal is to reduce energy use for the fiscal year 2000 to a level 18% below the 1996 fiscal use. This target was stated as part of

the Facilities Department Strategic Plan in 1997. A further target has been set to reduce energy use by 15% below the 1999 fiscal level by 2002.

The University of Alberta Hospital, Edmonton, covers 79,258 square meters over eight buildings. With more than 2400 employees, the teaching hospital handles 23,454 inpatients and 537,996 outpatients per year. There are 650 beds in the multi-disciplinary hospital.

Edmonton's University of Alberta Hospital was awarded VCR Inc.'s Leadership Award in the Health Services sector for having reduced its total 1999 greenhouse gas emissions to eight per cent below the total in 1996, or by 6,204 tonnes of CO₂ equivalent. In addition, the hospital is committed to long-term energy efficiency targets, its senior management endorses its emission reduction approach, and the hospital was only one of two in Canada, both operated by Edmonton's Capital Health Authority – to win Gold Status in VCR Inc.'s Champion-level Reporting System.

Mining

Winner: INCO Limited

Inco's absolute emissions decreased from 939 kilotonnes of CO₂ equivalent in 1998 to 926 kilotonnes in 1999. Conversely, during this one-year period, its energy and emissions indices increased. These indices, which measure energy and emissions per unit of production, were affected by short-term factors described in the report.

These temporary fluctuations in no way indicate loss of momentum in its emission reduction efforts. Indeed, Inco has improved overall performance from 1990 to 1999, based on both the absolute emissions and the Energy Index. Inco's Energy Index has been reduced by 9% relative to 1990, fully meeting Inco's target of 1% annual improvement.

Inco is a mine development and operating company with over 10,000 employees and offices in fifteen countries around the world. The company is a world leader in nickel extraction and supply, and a large producer of copper, cobalt, platinum group metals and sulphur products. Inco is one of the few fully integrated Canadian companies, with mining, smelting, and refining operations in Manitoba and Ontario.

INCO was awarded its Leadership Award by VCR Inc. for the following reasons: its management commitment to long-term GHG reduction targets and plans, its excellent Action Plan, its achievements in reducing GHG emissions from 939 kt of CO₂ equivalent to 926 kt CO₂ equivalent between 1998-1999.

Honourable Mention (2): Falconbridge Limited and Luscar Ltd.

Municipalities

Winner: City of Ottawa

In 1998, the City of Ottawa achieved a 19% reduction in CO₂ equivalent emissions from 1990 levels. Ongoing building retrofits have attained an 18% reduction in energy use in City facilities, and-estimated avoided costs from the use of energy efficient street lighting systems are \$268,000 year in maintenance costs, and \$360,000 year in energy costs. Furthermore, increased efficiency of the City's fleets resulted in a 13% reduction in energy use and a 21.4% reduction in CO₂ equivalent emissions.

In recognition of the City's leadership in municipal climate change action, the former Region of Ottawa Carleton contracted with the City's Environmental Management Branch to help develop and implement the Region's corporate and community Climate Change Action Plans.

City and Regional Climate Change staff completed the Region's Corporate Climate Change Action Plan and cooperated to implement the Region's corporate strategy. A technical study of building, transportation and landfill gas emissions from across the region was conducted with funding from the Region. The study established a baseline GHG emission inventory to serve as the baseline emission inventory for the new City of Ottawa that was incorporated in January 2001. Both the former City of Ottawa and the Regional Municipality of Ottawa-Carleton – now the new City of Ottawa – received gold status in VCR Inc.'s Champion-level reporting system in 2000.

The new City of Ottawa combines the population (327,000) and size (27,220 acres) of eleven townships and municipalities into a new entity with a population exceeding 750,000 people covering 681,270 acres stretching 110 kilometers from east to west. 17,000 people now work for the new city.

The former City of Ottawa was a pioneer in municipal climate change action and was one of the first cities in Canada to adopt a climate change commitment. Since 1992, over 60 Canadian municipalities have adopted climate change commitments and have become members of the PCP.

The former City of Ottawa remained a leader as one of only six local governments in Canada to have developed and implemented a Community Climate Change Action Plan. It is for this reason, in addition to its commitment for future GHG reductions, its outstanding

Action Plan, and its senior management commitment to reduce GHGs, that Ottawa has been given VCR Inc.'s Leadership Award in the municipality sector.

Nuclear Technology

Winner: Atomic Energy of Canada Limited (AECL)

From 1990 to 1999, AECL has implemented measures to reduce GHG emissions wherever such improvements have not conflicted with radiological safety concerns. During this period, AECL has: reduced absolute emissions 47 percent below 1990 levels through increased energy efficiency and improved practices; and, made significant improvements in the energy efficiency of its buildings.

From 1990 to 1999, the energy intensity of AECL's buildings decreased by 7 percent as a result of initiatives such as AECL's Infrastructure Refurbishment Program (IRP). This included replacing refrigerants with less environmentally harmful equivalents, and improving procedures to recover refrigerant and reduce fugitive leaks in research applications. AECL also reduced the GHG emissions of its vehicle fleet by switching vehicles over to less emissions-intensive fuels such as ethanol and propane. The company also improved the efficiency of research and process operations. In 1998, two new high efficiency dual-fuel boilers were installed in the CRL powerhouse to replace older units.

AECL was established in 1952 as a Crown corporation with a mandate to develop peaceful applications of nuclear energy. In 1999, AECL employed over 3,300 people at locations in Canada and in other countries around the world. AECL's Canadian operations are centered in three locations: Mississauga, Ontario; Chalk River, Ontario; and Pinawa, Manitoba. Activities at these facilities include research & development of CANDU® power reactors and MAPLE research reactors; provision of engineering and consulting services to CANDU utilities in Canada and abroad; storage and management of low-level radioactive waste and support for private and public sector research projects involving nuclear technologies.

AECL won the VCR Inc.'s Leadership Award for having reduced its greenhouse gas emissions by an absolute reduction rate of 47% over 1990 figures, its excellent Action Plan and Progress Reports, its employee awareness and outreach program on education about GHG reduction; and its target of attaining 50% GHG reduction next year.

Oil and Gas Refiners and Upgraders

Winner: Syncrude Canada Ltd.

Syncrude is committed to achieving an average 1.7 percent energy efficiency gain per year. This will result in a 2 percent reduction in CO₂ equivalent emissions per unit of production per year leading to a total 42 percent reduction in the twenty-year period leading up to 2008. This commitment is made possible through its investment of \$30 million per year in research and development, which is enabling new technologies to be installed during its \$6 billion Syncrude 21 expansion.

This expansion incorporates over \$1 billion in capital investments that will significantly improve the company's environmental performance. New technologies include a low energy hydro transport and extraction process at the Aurora Mine that uses 40 percent less energy than at present. As well, the company will replace its dragline and bucket wheel mining processes with energy efficient trucks and shovels.

Syncrude operates one of the largest research facilities in Western Canada, and will invest a total of \$500 million in research and development programs over the 1990-2008 period.

Located at Mildred Lake, 40 kilometers north of Fort McMurray, Alberta, in the Regional Municipality of Wood Buffalo, Syncrude is the largest operator in the Alberta oil sands. It operates an oil sand mine, utilities plant, bitumen extraction facility, and upgrader that processes bitumen and produces a (value-added) high quality, light, sweet crude oil. This product, which is low in sulfur and contains no residue, is called Syncrude Sweet Blend.

In 1999, Syncrude produced 82 million barrels of crude oil, meeting about 12 percent of Canada's annual petroleum requirements. This makes Syncrude Canada's largest single source of crude oil.

Syncrude Canada Ltd. was awarded its Leadership Award due to its above-average target investment in new research and technology to address energy efficiency over a long-term period, its comprehensive Action Plan to reduce GHG emissions, and its stellar performance in reducing GHG emissions by 26% per barrel oil production between 1988-1999.

Honourable Mention: Irving Oil Limited and Petro-Canada

Oil and Gas – Pipelines and Natural Gas Distribution

Winner: SaskEnergy & TransGas

SaskEnergy and TransGas's corporate greenhouse gas emissions in 1999 were 14% higher than its 1990 emissions. Of the total amount of greenhouse gases that were emitted by SaskEnergy and TransGas in 1999, carbon dioxide represented 25%, methane represented 73%, and nitrous oxide represented approximately 2% of total emissions. The corporation has made steady progress over the last four years. Each consecutive year SaskEnergy and TransGas have reduced their greenhouse gas emissions in a systematic and cost effective manner. To the end of 1999, the corporation reduced its greenhouse gas emissions by over 76,250 tonnes, or 32% of its Kyoto target. New fuel gas injection technology that SaskEnergy plans to test as well as other promising technologies will provide the corporation with additional means to reach its Kyoto target.

The corporation has made reasonable progress in its emission reduction efforts. It continues to promote the adoption of energy efficient technologies and operational practices as a way to save money and help the environment, and has made a commitment to provide public education and outreach initiatives to its staff, the public, and Saskatchewan businesses.

SaskEnergy Incorporated is Saskatchewan's natural gas distribution utility. TransGas Limited is the province's natural gas transmission and storage company. Its primary business is that of transporting gas from the producer to the local consumer and to interconnecting pipelines for export. SaskEnergy's and TransGas' facilities consist of gathering lines, compressor stations, metering facilities, regulator stations, underground storage facilities, and has over 64,000 km of distribution pipelines, and more than 13,700 kilometres of transmission pipeline in Saskatchewan.

SaskEnergy and TransGas was awarded a Leadership Award for having achieved 6% GHG reduction per unit below 1990 levels. This is a significant reduction for this type of industry. Other reasons include forecasting GHG reduction targets 20% below 2000 levels, employee GHG reduction awareness programs, and its outstanding Action Plan and Progress Reports.

Oil and Gas Upstream (2)

Winner: Startech Energy Inc. and Burlington Resources Canada Energy Ltd.

Startech

Startech Energy Inc.'s GHG emissions, or CO₂ equivalent emissions, increased from 59,475 tonnes in 1997 to 83,786 tonnes in 1998 and 86,971 tonnes in 1999. The Production Carbon Intensity (PCI), which is CO₂ equivalent emissions per unit of production, decreased from 0.204 tonnes/m³ OE in 1998 to 0.163 tonnes/m³ OE in 1999 due to the decrease in rare gas. The 1997 Baseline Year PCI was 0.253 tonnes/m³ OE. Consequently, the 1999 PCI is 35% below the 1997 Baseline Year.

The following GHG reduction initiatives were implemented in 1999, and GHG emissions were reduced by 27,339 tonnes of CO₂ equivalent/year:

- A number of field facilities optimization studies were conducted reducing purchased electricity and GHG emissions.
- Vented solution gas at an oil battery was tied into sales.
- Vapour recovery units were modified or installed to increase the capture of previously vented solution gas and to send this gas to the flare stack or the sales line.
- A battery was converted to a satellite allowing previously vented solution gas at this battery to be tied into a central battery where these vapours could be flared.

GHG emission projections for 'Business as Usual' are 149,651 tonnes of CO₂ equivalent for 2000. The 'Business as Usual' value is the estimate of what GHG emission levels would be without any reductions from success stories and action plans. A target of 103,179 tonnes of CO₂ equivalent for 2000 has been set, which is a reduction of 31% from 'Business as Usual'. This target will be achieved with the reductions expected from success stories implemented in 1999 and action plans for 2000.

In 2001, Startech Energy merged with ARC Resources Ltd. ARC Resources Ltd. is an oil and natural gas exploration and production company based in Calgary, Alberta. The new company grew – through Startech Energy - from a junior producer to a balanced intermediate producer. In 1999, average production was 11,593 barrels of oil equivalent per day (boe/d), while average production was 9,819 boe/d in 1998 and 6,636 boe/d in 1997. The average 1999 production rate for crude oil was 8,245 barrels per day (bbls/d), while

natural gas production was 20.0 million cubic feet per day (mmcf/d).

Startech Energy Inc., now ARC Resources Ltd., was awarded VCR Inc.'s Leadership Award for having produced an exceptional Action Plan and Progress Report, for having reduced its Production Carbon Intensity (PCI) by 35% between 1997 and 1998, and for having reduced its Production Energy Intensity (PEI) by 45% between the same dates.

Burlington Resources

Significant reductions of greenhouse gas emissions were achieved in 1999 by Burlington Resources Canada Energy Inc. Compared to 1998, production of natural gas, natural gas liquids, and crude oil through its operated facilities increased by 9% to 6.08 million cubic metres oil equivalent (m³ OE) in 1999. During the same period, total greenhouse gas releases from company operations decreased by 11% or 94 kilotonnes carbon CO₂ equivalent in 1999. Total greenhouse gas emissions in 1999 were 757 kilotonnes CO₂ equivalent. The reduction in emissions can be attributed to the sale of several gas plants (53 kilotonnes), improved energy efficiency (12 kilotonnes), reduced methane venting (1 kilotonnes) and reduced reportable fugitive losses (28 kilotonnes).

1999 total greenhouse gas emissions are also 26% higher than in 1994 (our base year). However, production has increased 99% in the same period. Significant improvement was also achieved on a per unit production basis. Product carbon intensity (PCI) improved by 18% from 1998 to 1999 (from 0.152 to 0.125 tonnes CO₂ equivalent/m³ OE). Similarly, PCI has improved 37% since 1994.

In terms of product energy intensity (PEI), a measure of energy efficiency, an improvement of 10% was achieved from 1998 to 1999 (from 1.21 to 1.08 GJ/m³ OE). Since 1994, PEI has improved by 48%.

BR Canada is an upstream petroleum company engaged in the exploration, development, production and marketing of oil and gas. The company's reserve and production base is predominantly natural gas, representing respectively 78 and 79 per cent of the total.

BR Canada currently employs 433 people in Canada. Production from BR Canada operated properties increased from 3.1 million cubic metres oil equivalent in 1994 to 6.3 million cubic metres oil equivalent in 1999 (Chart 1). BR Canada owned (at December 31, 1999 on a net basis) some 1243 oil wells and 1519 gas wells. BR Canada continues the active drilling activity of Poco Petroleum Ltd. During 1999, the company drilled 153 wells with a 93

per cent success rate. Of those, 119 were completed as natural gas wells, 23 as oil wells, and 11 were dry and abandoned.

Burlington Resources was chosen for a Leadership Award due to its successful public and employee outreach education program about greenhouse gas reductions, its exceptional Action Plan and Progress Report, its reduction of its production energy intensity by 48% and product carbon intensity by 37%.

Primary Metals

Winner: Dofasco

Dofasco's current improvement commitment is to improve base specific energy consumption (SEC) at an average rate of 1% per year for the period 1990-2000. As part of the Canadian Steel Producers Association, it is committed to support the Association's extended energy intensity goal to improve specific energy intensity by 10% over the period 2000-2010.

Direct greenhouse gas (GHG) emissions in 1990 were 6.02 million tonnes CO₂ equivalent. Indirect (electricity) GHG emissions totaled 0.53 million tonnes CO₂ equivalent. Direct GHG emissions in 1999 were 4.70 million tonnes CO₂ equivalent, 22% below the 1990 level. Indirect (electricity) GHG emissions totalled 0.71 million tonnes CO₂.

The major factor contributing to the change in absolute CO₂ emissions between 1990 and 1999, was improved specific energy consumption. Reduced carbon intensiveness of energy use contributed to a lesser extent while an increased shipment level had a small increasing impact. Within 1%, they account for the actual change.

Dofasco is one of Canada's largest steel producers serving customers throughout North America with high quality, flat rolled and tubular steels. The company operates facilities in Canada and the USA, utilizing both oxygen steel-making and scrap-based electric arc furnace technology.

In 1999, Dofasco processed 3.71 million tonnes of steel slabs in Hamilton, resulting in shipments of 3.5 million tonnes. Total corporate sales in 1999 were \$3,142 million.

VCR Inc.'s Leadership Award was given to Dofasco for the following reasons: the steel maker submitted an outstanding Action Plan to reduce GHGs, it reduced GHG emissions by 20% per unit output, the company has fixed reduction targets for the future to reduce energy intensity by 10% between 2000-2010, and, the company is one of Canada's industrial leaders in GHG reduction.

School Boards

Winner: School District 43 (Coquitlam)

Key activities carried out by School District No. 43 (Coquitlam), BC, in 1999 included: billing verifications, supplier utility negotiations for bulk gas, boiler upgrades, heat pump /IAQ conversions, Destination Conservation public awareness events, partnering with Industry for DC sponsorships, and minor water and energy improvements.

The Destination Continuation program's annual savings was 13,383 GJ, and 1,413,325 kWh and 702 tonnes CO₂ equivalent. The savings from the various other activities are more complex to track but on a gross level appear to total 50,843 GJ in gas below the 1996-97 base year projected at its weather and new floor area. The electric savings from the base year are negative, but the net total is 12.689 Gwhe and approximately 2,453 metric tonnes of CO₂.

Ongoing projects include more boiler replacements, lighting replacements, heat recovery, and upgrading of DDC systems. Major conversions from gas furnaces to ground source heat pumps are approved and underway at two schools this year. Details for registering these projects for Carbon Credits is being explored. School District 43 is a rapidly growing district in the lower mainland of BC. The facilities portfolio now consists of 74 schools and some 3.6 million square feet of space. To serve the 32,000 students, utility consumption amounts to 3.5 million dollars per year, and rising. The District actively monitors utility consumption in addition to costs, to make a positive contribution to the environmental quality both indoors and in the Fraser River Basin in general.

School District 43 (Coquitlam) was awarded a VCR Inc. Leadership Award because of its involvement in community and government programs to reduce GHGs in its facilities, its successful Action Plan to reduce greenhouse gases, its GHG emission reductions of 10% between 1996 and 1999, and its ongoing desire to set future milestones and targets each year to continue to reduce GHGs.

Small and Medium-sized Enterprise (SME) sector

Winner: Enviro RIS Canada

Enviro RIS Canada has more than achieved its original goal of reducing GHGs by 6% from 1990 levels, and has reduced greenhouse gas emissions by 10% per employee over 1990

figures. This represents an absolute GHG reduction rate of 32%. The company is now aiming at achieving a "Zero Emissions" status within the next five years (2004) by initiating further changes to its daily energy use (building and transportation) and introducing additional offset projects.

Enviro's "Zero Emissions" Action Plan features a 5% annual reduction of GHG emissions through telecommuting and a tree planting offset project in cooperation with the Canadian Tree Foundation. The tree-planting program should displace about 16 tonnes of CO₂ equivalent GHG in its first year of operation, and as much as 82 tonnes by the 5th year when about 9,000 trees will have been planted. Additional activities include promoting more awareness and action (through participation in Pollution Probes' Clean Air Commute), maintaining a climate change library of Resources and videos, providing subway tokens to employees for work-related travel and providing support to the building management to ensure an expanded recycling program is initiated.

Enviro RIS Canada is a small environmental consulting firm located in Toronto, Ontario that employs 16 people. The company was selected for a Leadership Award in the Small and Medium-sized Enterprise category due its excellent Action Plan, the ongoing firm commitment from its senior management to reduce GHGs, its five-year GHG reduction plan, and its absolute GHG reduction rate of 32% over 1990 figures.

For Association Leadership:

Winner: The Canadian Chemical Producers' Association

This year, the Canadian Chemical Producers' Association (CCPA) is being honoured for its great contribution to substantial and ongoing reductions in greenhouse gas emissions through its highly responsible and effective "Responsible Care" initiative which encompasses the emissions and other activities of 75 organizations, 73 of which are registered at VCR Inc.

Canadian chemical manufacturers produce a broad range of petrochemicals, inorganic chemicals, polymers, and other organic and specialty chemicals. Chemical production is energy intensive. As a result, energy efficiency continues to be a high priority for the industry. Greenhouse gas emissions from the industry result primarily from energy consumption, but also from industrial process emissions and fugitive emissions.

In 1999, CCPA member companies reported a decline in emissions of twelve percent

for a total reduction of 63 percent or 171,000 tonnes since 1992 - the first year of formal emissions reporting under Responsible Care®.

Since 1992, the rate of members' emissions reduction has outpaced the increase in chemical production. Today, a unit of chemical product is manufactured with 71 percent less chemical emissions than in 1992. By 2004, member companies are anticipating that emissions per unit of production will decline by 79 percent based on 1992 volumes. To date, member companies have made significant progress in reducing their emissions to water, emissions of toxic substances and emissions of ozone-depleting substances.

Consuming fossil fuels for process energy is by far the largest emissions source, producing 11.4 Mt CO₂ in 1998 and again in 1999. Industrial processes release small quantities of HFCs, PFCs, SF₆ and N₂O.

Emissions of carbon dioxide, the chief greenhouse gas, have increased by five percent since 1992, a slight increase from 1998. In terms of global warming potential, member companies' greenhouse gas emissions - including carbon dioxide - are projected to decline 37 percent by 2004 based on 1992 amounts. And, in terms of each unit of product manufactured, the global warming potential of members' greenhouse gas emissions is projected to decline by 57 percent. The Canadian Chemical Producers' Association (CCPA) represents 75 chemical manufacturing industries with over 200 plants across Canada -- which collectively produce more than 90 per cent of all chemicals in Canada. CCPA is also the driving force behind the Responsible Care® initiative, a global effort aimed at addressing public concerns about the manufacture, distribution, use and disposal of chemicals by 2004.

This activity, over the past eleven years, is a testament to the effectiveness of Responsible Care® which enables CCPA members to work in partnership with governments, communities and other stakeholders, and - through dialogue - to set and meet environmental goals, while retaining business and operational flexibility. The chemical industry should be proud of its achievements and the vital and dedicated work of its sector association - recipient of this year's Leadership Award: the Canadian Chemical Producers' Association.

The Canadian Chemical Producers' Association (CCPA), founded in 1957, represents 75 chemical manufacturing industries with over 200 plants across Canada -- which collectively produce more than 90 per cent of all chemicals in Canada. CCPA is also the driving force behind the Responsible Care® initiative, a global effort aimed at addressing public concerns about the manufacture, distribution, use and disposal of chemicals.

For Individual Leadership:

Winners (2):

Sadettin Yilmaz, Natural Resources Canada

Sadettin Yilmaz is a Natural Resources Canada Energy Innovators Officer at the Office of Energy Efficiency (OEE). In 1999 and the first half of year 2000, he worked closely with the Association of Canadian Community Colleges (ACCC) and VCR Inc. During his tenure, he drafted a standardized reporting template for his clients, who were also registered at VCR Inc. This template was first drafted to meet the data requirements of the OEE, but was revised to cover all elements of the reporting requirements of VCR Inc.'s Champion-level reporting system.

Langara College was the first Gold reporter using his template. Of the 15 Gold Champion-level Reporters from the College sector, all but one used Sadettin Yilmaz's template. In August 2000, Sadettin Yilmaz became responsible for school boards and has since been working with the Canadian School Boards Association (CSBA). In September, School District No. 43 (Coquitlam) earned Gold Champion-level Reporter status under his guidance. This school board was only the second to achieve Gold status.

Through Sadettin's dedication, hard work, commitment to assisting in reducing greenhouse gas emissions, his initiative and creativity, VCR Inc. has awarded him a Leadership Award.

Ken Ogilvie, Pollution Probe

Ken Ogilvie is the Executive Director of Pollution Probe, one of Canada's most distinguished environmental groups. Ken joined Probe in October 1995 after serving for almost two years as the Executive Coordinator of the Ontario Round Table on Environment and Economy. His position previous to that was Manager of Policy Coordination for the Ontario Ministry of Environment and Energy.

Ken's first job at Pollution Probe was to build a long-term, comprehensive air programme. The program was developed and is currently being implemented. It has several components, including: smog/particulate

controls; air toxics reductions; greenhouse gas reductions; and further acid rain controls to protect sensitive aquatic ecosystems.

More recently, Pollution Probe has developed a children's health and the environment programme, and is currently developing a broader environmental health programme, which will include both the indoor and outdoor environments.

Mr. Ogilvie has 20 years of experience in government and institutional positions, ranging from project engineering to policy development. He has had international experience as the Acting Director of the federal Great Lakes Program and as a lecturer on sustainable development institutions, tools and techniques in Malaysia and Romania.

Some of Ken's major accomplishments include:

- Author of the 1987 report of the National Task Force on Environment and Economy. This report was submitted to the Canadian Council of Ministers of the Environment as a response to the report of the World Commission on Environment and Development (i.e.; the Brundtland Commission report).
- Production and partial authoring of the 1991 report of the Canadian Environmental Advisory Council titled, AA Protected Areas Vision for Canada@. This report was tabled in the House of Commons by the Honourable Jean Charest when he was the federal Minister of the Environment.
- Author and producer of the 1995 report of the Transportation and Climate Change Collaborative titled, "Towards a Sustainable Transportation Strategy for Ontario". This report was submitted to the Honourable Michael Harris, Premier of Ontario, by the Ontario Round Table on Environment and Economy. The report was also tabled in the Ontario Legislature by the Honourable Brenda Elliott, Minister of Environment and Energy.

Ken's academic credentials include a Bachelors of Applied Science (Civil Engineering) from the University of Waterloo, and a Masters of Business Administration from York University.

Champion News is published bi-monthly by VCR Inc. We welcome articles with logos, news items and pertinent website addresses, and would be pleased to provide contributors with by-lines should they wish to write their own success story articles. Editor: Michael Reilley, VCR Inc., (613) 565-5151 (ext. 224); mreilley@vcr-mvr.ca

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