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Growing a Sustainable Energy Company

Suncor's Venture into Alternative and Renewable Energy

Summary

"More than thirty years ago, Suncor helped to pioneer commercial development of Canada's oil sands when many said it could not be done. This same pioneering spirit guides us on our journey to becoming a sustainable energy company. Through this journey, we have an opportunity to demonstrate leadership as an organization and to show that we care. There is a lot at stake in this for Suncor – real risks and potentially huge rewards. If we don't act responsibly, we will lose our right to operate and grow. On the positive side, I believe that, if this company pays attention to the environmental and social needs of our stakeholders, we will not only succeed, but we will have a distinct competitive advantage."[1]

Suncor CEO Rick George

Suncor Energy Inc. is embarking on an ambitious plan of growth in its key oil sands business unit. The company is investing approximately $2.8 billion to almost double its production of oil from oil sands by 2002. Simultaneously, the company has launched an alternative and renewable energy business with a view to this becoming commercially viable in the longer term.

Fully aware of the environmental and social impacts of its activities, Suncor acknowledges the importance of addressing issues of sustainable development with stakeholders in order to maintain a 'license to grow'. Suncor depends on maintaining positive relationships with environmental organizations, local communities, government regulators and other key stakeholders. In fact, with plentiful reserves and increasing market demand for energy, it may be argued that failure to maintain its license to grow is the only serious barrier that could stand in the way of Suncor achieving its business goals. Recognizing this, Suncor has adopted a 'triple bottom line' approach to balancing economic return, the needs of the community and protection of the environment. This is manifested in the high rating achieved by Suncor in the Dow Jones Sustainability Index and in the exceptional quality of Suncor's corporate communications on sustainability. Suncor's most ambitious practical commitments to date have been in areas such as

reducing emissions, land reclamation, and community development. Stakeholder involvement in decision-making has become a key factor in Suncor's approach to business and is now a core competence of the company. Success in this 'social dimension' of sustainability was most recently demonstrated when Suncor received approval for its oil sands expansion in Alberta 18 months ahead of schedule with virtually no opposition from stakeholders.

Thus to date Suncor has been extremely successful in embracing environmental issues and stakeholder interests and securing its license to grow. But one very significant challenge remains to the maintenance of this very positive state of affairs: the growing international and domestic disquiet over greenhouse gas emissions and climate change.

The production and consumption of energy contributes the majority of greenhouse gases that cause global climate change. In recent years a broad international consensus has emerged, calling for steps to be taken to limit greenhouse gas emissions. This manifested itself in the United Nations Framework Convention on Climate Change and the Kyoto protocol in which Canada agreed to limit itself to reduce its greenhouse gas emissions to 6% below 1990 levels by 2010. The implications of this target and the mechanisms by which it will be delivered are highly significant for the energy sector; for Suncor in particular they are central.

The production of oil from oil sands consumes large amounts of energy and produces significant amounts of CO_2 and other greenhouse gases. The doubling of Suncor's oil sands production will further increase the company's total CO_2 emissions. To reconcile this with their commitment to sustainability, Suncor has adopted a 'parallel path' business strategy. Suncor will strive to responsibly meet the current hydrocarbon needs of today's world while at the same time investing in natural gas, alternative and renewable energy that will provide sustainable sources of energy for the future.

In order to guide implementation of this strategy Suncor has adopted Canada's Kyoto target as a self-imposed business target – an important symbolic and yet very tangible guideline. Moreover, in January 2000, in addition to its numerous practical commitments to more sustainable operations, Suncor announced that it would invest $100 million in alternative and renewable energy over 5 years. Potential sources of renewable energy to be developed include solar, biomass, wind, landfill gas, and small run-of-river hydro projects. Suncor plans to use the same approach at developing renewable energy as it has used successfully in its oil sands operation: develop and commercialize a promising technology that has the potential to become a future engine of growth for the company. Suncor seeks to capture opportunities in an emerging market for alternative energy, and also use energy generated from renewable sources to help offset its increasing greenhouse gas emissions. Arguably it is primarily through the successful development of this business that Suncor will be able to deliver on its long-term goal of full sustainability whilst maintaining the delicate balance of economic, social and environmental interests.

However, the alternative and renewable energy industry is a new business environment for Suncor. Many barriers exist to developing renewable energies; there are many technologies that show promise but most are not yet fully developed, or not yet economically viable. There are risks for Suncor both financially and in terms of its credibility with key stakeholders – particularly shareholders - if its alternative and renewable energy strategy proves unsuccessful. One year after the announcement of its $100 million investment in alternative and renewable energy, Suncor is looking for the best way to optimize the success of this new business.

SUNCOR ENERGY INC.

Suncor Energy is an integrated Canadian energy company with three main business units: an oil sands operation in Fort McMurray, Alberta; a natural gas exploration and production business in western Canada; and Sunoco - a major refinery and retail network of gas stations in Ontario. Headquartered in Calgary, Suncor has assets of $5.2 billion, employs 2,800 people, and currently produces about 143,000 BOE/d (barrels of oil equivalent per day).

Return on shareholder equity was 11% in 1999 (see Exhibit 1). Suncor's goal is to double its shareholder value every five years. Since 1992, Suncor's share price has increased by more than 800% (see Exhibit 2). As an integrated oil company, Suncor has production as well as refining and marketing operations. For a comparison of Suncor's operations with those of three other large, integrated Canadian oil and gas companies see Exhibit 3.

In addition to Suncor's core businesses, two new business opportunities are under development: an oil shale project in Queensland, Australia, and an Alternative and Renewable Energy business. The five principal business units are described briefly below (1999 data unless stated otherwise).

SUNCOR'S MAIN BUSINESSES

Oil Sands and Project Millennium

The Fort McMurray oil sands operation is Suncor's cornerstone business and engine for growth, representing about 70% of 1999 net earnings of the company (see Exhibit 4). Suncor mines the hydrocarbon soaked oil sands with trucks and shovels and extracts crude oil on site. Suncor's number one priority for long term growth is the expansion of its oil sands operation. Economies of scale favour oil sands expansion and Suncor is spending approximately $2.8 billion on the second phase of 'Project Millennium' – a project which is designed to almost double Suncor's oil sands production to 225,000 barrels per day by 2002.

Natural Gas

Suncor's natural gas business unit is focused on providing the oil sands plant with a secure supply of the huge amounts of energy that the facility uses to process oil sands. When the Project Millennium expansion is completed, the oil sands plant will consume approximately 90 million cubic feet of natural gas per day. With the recent steep increase in natural gas prices (from $2 at the end of 1999 to $8-9 at the end of 2000), Suncor's natural gas unit is well positioned to allow the oil sands operations to keep its costs of production under control – a key component in the overall profitability of the operation.

Sunoco

Sunoco, Suncor's refining and marketing operation, manufactures, distributes and markets transportation fuels, petrochemicals and heating oils. Sunoco's controlled distribution channel includes more than 300 Sunoco branded retail gas stations in Ontario and joint venture partnerships with a further 200 stations. The Sarnia refinery has been set up to process most qualities of the crude oil that comes out of the oil sands plant. This allows the oil sands facility to reliably place its product on the market and allows the refinery to maximize production capacity.

Although the market in Ontario for gasoline and other refinery products is large, there is often more refinery product than retail sites to sell it. Sunoco's chain of gas stations ensures that its refinery will have a guaranteed market for its products. As such, Suncor's main business units are successfully integrated to provide value through each link in the value chain. In addition to Sunoco's core operations a new Integrated Energy Solutions business was launched in 1997 to sell natural gas to Ontario homeowners and commercial customers. As of June 2000 the natural gas business has been folded into a new division which integrates Retail, Natural Gas, Commercial and Reseller and E Commerce. This new division provides Sunoco with a single point of focus and contact for all customer groups.

Sunoco is presently analysing the opportunity for entry into the electrical retailing marketplace with a strategy to grow in the arena of green energy. Sunoco is working very closely with the Suncor Energy Alternative and Renewable Energy group (see below) to determine the best way to take these new products to market. The first ARE project involves the capture of methane gas for a landfill site in Brantford Ontario. Sunoco will market electricity generated from the project.

Stuart Oil Shale Demonstration Project in Australia

From its inception through to the end of 1999, Suncor invested $237 million in the first stage of the Stuart Oil Shale Project in Queensland, Australia, through a joint venture with Australian petroleum and mining firms. Oil shales are sedimentary rocks containing a high proportion of hydrocarbons. Currently in the early stages of research and development, the Stuart project is examining the viability of commercializing new technologies for extracting oil from oil shale. These technologies have their roots in Suncor's oil sands operations. If successful, the project could lead to the production of 85,000 barrels of oil per day within ten years.

Alternative and Renewable Energy Group

In January 2000, Suncor announced that it would invest $100 million in alternative and renewable energy over the next five years. The focus of this investment will be on research and development and commercial ventures in niche markets. Projects could include generating "green power" by recovering methane from landfills, converting solid waste to energy, developing small run-of-river-hydro projects or generating electricity from biomass, wind energy or solar power.

SUNCOR: PAST, PRESENT AND FUTURE

Since the early 1900's, there has been a quest to recover oil from the Athabasca oil sands. Early research by the Alberta Research Council showed that an oil separation technique using hot water held potential for commercial oil production.

Understanding the immense potential of this opportunity, the company that is now Suncor was incorporated in 1953 as Great Canadian Oil Sands. During the first 10 years of its development it undertook to commercialize the newly developed processes for oil extraction. In 1953, the Sun Company Inc. of Philadelphia (Sun) became the Great Canadian Oil Sands Company. The oil sands operation continued to move ahead by obtaining patents and leases from the Alberta government. In 1967, Great Canadian Oil Sands opened the world's first commercially successful oil sands production and upgrading plant. The first oil from this plant in Fort McMurray, Alberta, flowed through the Interprovincial Pipe Line to a refinery in Sarnia, Ontario in 1968. Under the ownership of Sun Oil, Great Canadian Oil Sands amalgamated with the Sun Oil Company Ltd. and became Suncor in 1979.

Oil Sands Growth Potential

The resource that initially attracted Suncor, and which has since attracted others[2], is the huge quantity of oil trapped in the Athabasca oil sands of northern Alberta. Alberta's oil sands contain one third of the world's oil reserves – 300 billion barrels of oil are ultimately recoverable – greater than the reserves of Saudi Arabia.[3] Of the three main oil sands regions in the Western Canadian Sedimentary Basin, Athabasca oil sands are the largest and most accessible. The Athabasca oil sands are 40 to 60 meters thick with oil saturation varying between 10 to 18% by weight. It takes about 2 tons of oil sand to make one barrel of oil. Where the layer of overburden covering the oil sands is relatively thin, the oil sands are most often mined in large open pit operations. More recently, techniques have been developed to extract oil from oil sands that are too deep beneath the surface to be mined.

Deposits of oil sands and oil shale are classified as 'unconventional' by the oil industry. Other oil companies, which are exploring 'conventional' oil deposits, face a different set of constraints. Conventional oil companies are involved in a high-risk business where locating the next pool of oil is becoming increasingly more difficult. Even when located, a conventional pool of oil in Canada usually has a production life of about 5-7 years before the rate of extraction declines and the amount of oil recoverable increasingly diminishes. In contrast, Suncor's current leases allow it to mine oil sands for in excess of 35 years at planned production rates without any decline in extraction whatsoever. Therefore, unlike oil companies relying on conventional sources, Suncor does not face any risk in finding oil.

As conventional reserves of oil diminish, the Canadian oil industry will rely more heavily on oil sands. Canada has known reserves of about 8 billion barrels of conventional crude remaining (in contrast to the 300 billion barrels of oil recoverable from Canada's oil sands).[4] Today, about 15% of Canada's annual production of crude oil comes from oil sands. But as conventional reserves diminish and oil sands operations are expanded, the Canadian Association of Petroleum Producers predicts that oil sands will supply half of Canada's crude oil by 2020.[5]

Cost Efficiencies

Suncor undoubtedly has access to a considerable resource and a world market that still consumes a significant amount of oil. In its early years, Suncor's winning formula was the successful commercialization of new technologies for extracting and upgrading oil from oil sands. However, the company faced many challenges in making these new technologies cost effective. In the late 70s, it was costing Suncor $35 to produce a barrel of oil. When the price of oil collapsed in the mid-1980s due to the impact of surplus crude oil and the deregulation of Canadian oil prices, Suncor was receiving $12 a barrel for crude oil on the open market. The extent of the gap between Suncor's selling price and cost of production in the mid 1980s left the viability of Suncor's oil-sands operation in serious question. At this time the strategy of Suncor's parent company, Sun, was to shut down Suncor's oil sands operation by 2001. The only reason they intended to continue operations until then was that the cost of exit in 1985 was higher than Sun's balance sheet could afford.

SUNCOR'S VISION AND STRATEGY

Rick George, CEO Suncor Energy

Rick George was raised in Brush, Colorado, and worked in the Colorado oil patch while studying engineering at Colorado State University. After graduating in 1973, he worked for Texaco and received a law degree from the University of Houston. In 1980 he joined Sun Oil where he gained experience in project planning and production planning. During this period he also attended the Harvard Business School Program for Management Development.

Rick George was appointed president and CEO of Suncor in 1991. He was committed to the concept of sustainable development and had a plan for turning Suncor's fortunes around. Under George's leadership, Suncor was successful at convincing the Sun board to embark on a strategy that would see Sun divest themselves of Suncor. The first stage of this plan was to get Suncor's costs of production under control. George believed that Suncor could bring costs down through operational efficiency improvements, using new technology, and by capturing economies of scale.

License to Operate – The Key to Growth

In order to do this, Rick George knew that Suncor needed to invest heavily in its 'license to grow'. Once Suncor had this license to grow, it could then expand and grow the facility to create a viable business. Suncor realized that it was not restricted by oil sands reserves, nor was it restricted by the market, given that conventional oil reserves were diminishing. The technology was available to make the oil sands operation viable if it could grow and capture economies of scale. The only possible barrier to achieving this strategy would have been failure to obtain the environmental permits to expand. These were in turn dependent on securing a license to grow from local communities, environmental organizations and other key stakeholders.

In the early 1980s, Suncor had begun to think seriously about its impacts on the environment – particularly with respect to land reclamation and remediation. Because of the oil sands mining process, large areas of natural habitat had been destroyed and large tailings ponds remained after an area had been mined. The oil sands plant and the Sarnia refinery drew water from the

Athabasca and St. Clair rivers respectively and discharges into the rivers were a concern. In addition, all of Suncor's business units were emitting environmentally damaging gases such as sulphur and nitrogen oxides. It was clear that Suncor's operations were having a significant impact on air, water, land, and the health of people and wildlife in surrounding areas. Suncor listened to the concerns of communities and environmental organizations. The company understood that these stakeholders would not allow Suncor to continue on a path of growth unless it successfully addressed a wide range of environmental and social concerns.

SUNCOR, A SUSTAINABLE ENERGY COMPANY

Given this understanding and the personal commitment to sustainability of Rick George, Suncor embarked on the journey towards becoming a sustainable energy company. Suncor began by making significant investments in eliminating sulphur emissions and reclaiming the tailings ponds and land that had been disturbed. Sunoco reduced the sulphur content of its gasolines to some of the lowest levels in the industry. To underscore Suncor's sustainability mission, Suncor incorporated sustainable development into its statement of core purpose:

> *Suncor energy is a unique and sustainable energy company dedicated to vigorous growth in world wide markets by meeting the changing expectations of our current and future stakeholders.* (See Exhibit 5 for Suncor's complete statement of core purpose)

As Suncor began to understand the concept of sustainable development and started putting it into action, it incorporated a Triple Bottom Line approach to managing its activities. This meant measuring and managing Suncor's environmental and social performance as well as its economic performance. Suncor integrated sustainable development into its corporate strategy, values, vision and mission. Suncor's decision-making embraced a Life Cycle Value Assessment approach that assesses the total life cycle impacts of an investment, product, or system.

Suncor also began to implement a continuous improvement approach in its operations and pushed decision-making down to lower levels of the organization. This shift was very motivational and contributed to increased employee morale.[6] In addition, Suncor undertook employee training initiatives to foster a high degree of understanding and commitment to sustainability issues. Financial incentives were put in place to stimulate employee sustainability performance.

Stakeholder Relations

With respect to its external stakeholder relationships, Suncor began actively to seek input from groups, communities and organizations that were affected by Suncor's activities. Suncor trained its employees in stakeholder consultation and adopted a set of principles to guide the consultation process (see Exhibit 6).[7] Suncor identified all potential stakeholders, and grouped them into primary and secondary levels of importance in their respective areas of concern.[8] Today, Suncor knows the interests and concerns of its stakeholders well and maintains a high degree of credibility with a wide variety of governmental, environmental, community, employee and shareholder organizations.

Significant attention was paid to environmental Non-Governmental Organizations (NGOs). Today, Suncor categorizes its relationships with environmental NGOs in three ways: strategic relationships, partner relationships, and more conflictive relationships. In the strategic NGO relationships, Suncor actively seeks input for its corporate decision-making. The Life Cycle Value

Assessment approach described above was, for example, embraced with help of the Pembina Institute for Appropriate Development, an Alberta-based environmental NGO. In the partner NGO relationships, Suncor works closely together with NGOs to further a common cause. An example of Suncor's partnership relationships with NGOs is the Clean Air Renewable Energy (CARE) coalition. This partnership between Canadian energy companies and environmental organizations (including Friends of the Earth and Pollution Probe) is lobbying the Canadian government to take action against global warming by providing incentives for the production of green energy. A conflict relationship exists between Suncor and NGOs that are advocating against any new oil developments. Greenpeace, for example, has a campaign against Suncor's Oil Shale project in Australia. With NGOs that Suncor is in a more conflictive relationship with, Suncor strives to keep dialogue open so that disagreements based on misunderstandings can be avoided.

Environmental and Social Responsibility

As an example of Suncor's focus on responsible environmental management, the Sarnia refinery was the first refinery in Canada to obtain ISO-14001 certification in 1999. ISO-14001 is an internationally recognized Environmental Management System standard. Suncor's dedication to pursuing sustainable development has been embodied in the publication of an extensive biannual Environmental Health and Safety report, and a yearly report on its greenhouse gas emissions for Canada's Voluntary Challenge and Registry program.[9]

An example of Suncor's social responsibility is exemplified by the Suncor Energy Foundation, which donated approximately $3.0 million to approximately 240 organizations in 2000. In addition, Suncor's oil sands operation set the goal of increasing the number of aboriginal people employed full time to 12% by the year 2002, up from 8% in 2000.[10]

Throughout this journey towards becoming a sustainable company, Suncor gained confidence and a strong sense of corporate identity. Suncor discovered that effective stakeholder consultation and dialogue was an important part of the company's success and competitive advantage. It led to high credibility levels for the organization both internally and externally. Suncor's commitment to sustainability was recognized by the Dow Jones Sustainability Index when it ranked Suncor a leading sustainability company in the global energy sector in 1998.[11] Suncor's credibility as a sustainable energy company has helped it directly in a business sense. When Suncor sought the environmental and regulatory approvals for Project Millennium, it was approved 18 months ahead of schedule with virtually no opposition from stakeholders.

Suncor's Sustainable Development Challenge

Suncor's journey toward becoming a sustainable energy company has been successful in allowing the company to understand and balance stakeholder expectations and, thus far, it has been successful in obtaining its license to grow. But like many other energy companies, Suncor's greenhouse gas emissions are still a source of serious concern both within the company, and externally (e.g. through potential government regulation and/or fiscal intervention and pressure from environmental organizations). Looking to the future, Suncor knows it is entirely likely that more stringent mechanisms to constrain greenhouse gas emissions may come into force. Suncor's ambitious expansion of its oil sands operation will be accompanied by a significant increase in greenhouse gas emissions. Thus a shift in the political or regulatory climate – if ill-timed – could put the growth of Suncor's oil sands operation at great risk and pose a major challenge to Suncor's ability to pursue its vision of sustainability.

Suncor's Parallel Path Approach

In response to this dilemma, Suncor adopted a twin track or 'parallel path' strategy, both to create value and achieve its goal of sustainability. One path is meant to secure customer and shareholder value by responsibly meeting the current needs for fossil fuels through expanding oil sands. The second path involves acting now to develop alternative and renewable sources of energy that will contribute to the protection of the environment and the long-term sustainability of Suncor.

On January 27, 2000, Suncor announced that it would invest $100 million in alternative and renewable energy projects over the succeeding five years. The Suncor board is clear that alternative and renewable energy projects and the parallel path approach are the right way for Suncor to go for a number of reasons. Renewable energy will provide important ways for the company to address climate change and offset the increased GHG emissions from oil sands. Alternative and renewable energy, or "green energy" is seen as a market with significant growth opportunities, especially if Suncor can be involved in the early stages of the evolution of the industry. Suncor believes that it can bring the same pioneering vision to growing a business in alternative and renewable energies as it demonstrated when it first developed the oil sands. In order to do this, however, Suncor needs to survey the environment and understand the forces that will make a difference in the successful execution of their strategy.

INDUSTRY ENVIRONMENT

Energy

The need for energy to drive the world economy is increasing rapidly. The Energy Information Administration estimates that total global energy use will increase by 60% between 1997 and 2020[12]. The major drivers of this demand growth are population growth and global economic growth. The world's population is expected to grow to 9 – 11 billion in the next 50 years.[13] World economic growth is expected to continue at an average rate of 3% per year to 2020.[14] The highest growth rate in energy demand is expected in developing countries, although the beginnings of strong recovery for the economies of South East Asia, and a faster than expected economic recovery in the former Soviet Union, are also driving global demand.

Although the energy sector is diverse and includes a wide range of supply options, conventional sources such as coal, oil and natural gas dominate the world energy mix. In 1998, total world energy consumption was broken down as follows: Oil 35.7%; Natural Gas 20.3%; Coal 23.3%; Nuclear 6.7%; other 14%.[15] The "other" category includes combustible renewables, waste, hydro, geothermal, solar and wind. The world's total energy consumption in 1998 was the equivalent of 9,491 million tonnes of oil.[16]

In Canada, the oil and gas sector makes an important economic contribution to the nation. Canada is the third largest producer of natural gas in the world and the eleventh largest producer of crude oil.[17] Canada's oil and gas sector accounts for 5% of GDP and 16% of total investment in Canada. In the year 2000, payments to all levels of government were estimated at $13 billion.[18] Crude oil and natural gas exports contributed $14.1 billion to Canada's $34.7 billion merchandise trade surplus in 1999.[19] In 1999, the oil and gas sector employed 447,000 people in Canada.[20]

Climate Change

The production and consumption of fossil fuels is by far the largest contributor to human-created greenhouse gas (GHG) emissions and global climate change. Effects of climate change include melting glaciers, bleaching of coral reefs and the potential flooding of low-lying areas. Scientists consistently predict that in the 21st century, northern latitudes will experience more warming than anywhere else in the world. According to studies by Environment Canada, doubling current CO_2 emissions could cause temperature increases of nearly 5°C in summer and 5-7°C in winter over mainland areas of the Canadian Arctic.[21] Already, there has been significant decline in the extent and thickness of arctic ice cover. Climate change is expected to bring more storms, floods and other deviations from climatic "norms", which pose risks to coastal communities, wildlife habitat, water users, transportation, municipalities and human health.

Greenhouse Gas Emissions

Canadian greenhouse gas emissions associated with production and consumption of energy accounted for 79% of total Canadian emissions in 1997.[22] Emissions from the production of oil and gas accounted for 18% of Canada's emissions (Exhibit 7 summarizes the GHG emissions from the main sectors of Canadian industry). Although Canada contributes only 2% of total world CO_2 emissions due to fossil fuels, it is the second highest per capita emitter of greenhouse gases in the world.

Globally, the International Energy Agency predicts that without policy initiatives to limit greenhouse gas emission, worldwide GHG emissions will increase by 60% from 1997 to 2010.[23] In Canada, the longer-term trends currently forecast a steady increase of GHG emission in the absence of any additional abatement measures (see Exhibit 8). In the oil and gas sector specifically, the Government of Canada expects GHG emissions to increase to 65% above 1990 levels by 2010.[24]

Kyoto Protocol

Given the growing understanding of the consequences and risks of climate change, the international community responded in 1992 with the development of the United Nations Framework Convention on Climate Change. This convention sets out a framework for action to control or cut greenhouse gas emissions. In 1997, 159 countries signed the Kyoto Protocol, committing industrialized countries to quantified limits for greenhouse gas emissions. Industrialized countries overall aim to reduce GHG emissions by 5.2% below their 1990 levels between the years 2008- 2012. This reduction is the average of the commitments of individual countries – for example, the US has committed to reducing its greenhouse gases by 7% below 1990 levels and Australia agreed to limit its emissions to 8% above 1990 levels. Canada's commitment is to reduce GHG emissions to 6% below 1990 levels by 2010 (see Exhibit 8). Under Kyoto, developing countries do not currently have targets because they generally emit relatively small amounts of greenhouse gases.

The Kyoto Protocol has been widely accepted in principle. However, many countries, such as Canada and the US, have not yet ratified it. At issue are two main factors: negotiating the final details of how the Kyoto targets are to be achieved; and the flexibility of available mechanisms for reducing GHG emissions. The European Union, Japan and New Zealand, have announced that they will ratify the Kyoto protocol before the year 2002. It is axiomatic that commitments

made under the Kyoto protocol will substantially alter the future growth and pattern of world energy production and consumption.

The Canadian government, along with the governments of all industrialized countries, is deeply involved in the process of identifying policies and programs to meet national GHG reduction commitments. For companies in the energy sector, this is expected to result in a combination of regulatory programs, market-based instruments and voluntary programs to achieve emission reductions.[25] It will also likely result in policies that support energy efficiency and favour less carbon-intensive supply options.

Suncor's Early Action on Climate Change

On the opening day of the Kyoto summit on Climate Change, Rick George made a presentation to the Vancouver Board of Trade. In this speech he acknowledged the scientific consensus on climate change and affirmed Suncor's commitment to take a leadership role in working to reduce greenhouse gas emissions. At the time the vast majority of other oil companies were taking a defensive position on climate change, calling for more research and warning of the economic consequences of premature action.[26]

Three months after this speech, Suncor took another step to demonstrate its environmental leadership and commitment to taking action on climate change by participating in one of the first emissions trades in North America. This transaction saw Suncor purchase credit for GHG reductions that had been undertaken by Niagara Mohawk Power Corporation in the United States. In addition to energy efficiency and emissions trading, Suncor is also pursuing GHG offsets – such as planting forests in developing countries to absorb greenhouse gases – to reduce its overall greenhouse gas emissions.

Suncor's GHG emission reduction goal is to meet Canada's national commitment and reduce its greenhouse gas emissions to 6% below 1990 levels by 2010. Today, Suncor is the 7th largest producer of greenhouse gases in Canada amongst the oil and gas producers that report emissions to the Canada's Voluntary Challenge and Registry program.[27] With the Project Millennium oil sands expansion and the Oil Shale project in Australia, Suncor expects its total emissions to be almost double the amount of 1990 levels in the year 2002[28] (see Exhibit 9). Suncor's oil sands business unit makes up the majority of the emissions with 72% (see Exhibit 10). This estimation is based on a most likely CO_2 emission scenario that includes offsets such as forest projects in Belize (see Exhibit 11). If a business as usual scenario were followed, emissions would be three times 1990 levels by 2002. Suncor still intends to achieve its goal of reducing net CO_2 emissions to 6% below 1990 levels by operational efficiency improvements, developing alternative and renewable energy and through Kyoto mechanisms such as buying CO_2 credits, Joint Implementation, and the Clean Development Mechanism (see Exhibit 11 for further information on these Kyoto mechanisms for reducing GHG emissions).

FORCES IMPACTING STRATEGY IN ALTERNATIVE & RENEWABLE ENERGY

Changes in the World Energy Mix

As demand for energy increases by 60% between 1997 and 2020, various scenarios have been proposed to predict the future world energy mix. A key variable in these scenarios is the potential imposition of some form of carbon constraint. The choice of energy source makes a significant difference in terms of the amount of carbon dioxide emitted in meeting energy demands (see exhibit 12 A and 12 B). Should the Kyoto Protocol be enforced in a more stringent way, it could have profound effects on the energy mix in the industrialized world.

Ignoring possible or even likely future policy initiatives to address GHG emissions, a future world energy scenario by the International Energy Agency predicts that fossil fuels will increase their share of the world energy mix to 90% by 2020 (see exhibit 13). Under this scenario, oil and other GHG producing fossil fuels continue to play a dominant role in the world's energy economy.

A different future world energy scenario is described by the World Energy Council. In this second scenario, policy makers and other actors in society succeed in promoting energy efficiency, technology innovation and transfer, and non-fossil fuel development (e.g. solar, wind and hydro energy). This second scenario provides increased opportunities for renewable energy sources to develop (See Exhibit 14). Using a similar scenario, Royal Dutch Shell has based its investment decisions on expectations that renewables will provide 5-10% of the world's energy needs by the year 2020, rising perhaps more than 50% by mid century.[29]

Competitive Climate – The Race to Become Green

Due to mounting pressure from environmental organizations and the public, most large oil companies are now investing in community development and environmental initiatives. Moreover, oil and gas companies are sensing the opportunities for alternative and renewable energy in a world with constraints on greenhouse gas emissions and a changing energy mix. These companies believe that a first mover strategy will provide an important competitive advantage as the energy industry evolves and renewable energy sources begin to play a larger role. This has resulted in a 'race to become green'. BP Amoco and Royal Dutch Shell, the second and third largest oil companies in the world respectively, have recently redefined themselves as "energy" companies and have made significant investments in alternative and renewable energy. In the Canadian oil and gas sector, Suncor is taking the lead with sustainable development initiatives.

BP (formerly British Petroleum and BP Amoco) has embarked on a strategy to take its business 'Beyond Petroleum'. BP has invested $200 million, and will invest another $500 million, in solar power over the next five years with the expectation of reaping the benefits of emerging renewable markets. This solar investment equated to 0.8% of BP's total assets in 1999.[30] As a result, BP has become the world's leading manufacturer and marketer of solar photo-voltaic technology. It currently has a 20% global market share and revenues of about $200 million. BP has aggressive goals to reach a $1 billion revenue target by the year 2007[31].

Royal Dutch Shell has stated that it is working towards the day when it is no longer regarded as an oil company.[32] Shell is in the third year of a $500 million investment in renewables which was equivalent to 1.4% of total assets in 1999.[33] So far, Shell has concentrated on forestry, solar energy, and biomass. In 1999, Shell began investing in wind energy.

Syncrude, the largest oils sands exploiter in Canada, acknowledges the risks to its business due to global climate change issues. Similar to Suncor, Syncrude has invested significantly in land reclamation initiatives, and operational efficiency improvements. However, Syncrude has taken a different approach to Suncor with regard to renewable energy sources. Syncrude does not have any plans to invest in renewable energy development. It has not embraced emissions trading, nor does it look for possibilities to generate CO_2 offsets. According to Chairman, Eric Newell, Syncrude is focusing on achieving better energy efficiency through new technologies as the main approach to addressing greenhouse gas emissions.[34]

Other Canadian utilities and energy producers interested in renewable energy include: TransAlta, PanCanadian, EPCOR, Toronto Hydro, SaskPower, BC Hydro and Ontario Power Generation (OPG). OPG plans to invest $50 million over five years to increase its renewable energy supply to 500 MW (approximately four times their existing energy supply from renewables). OPG predicts that its new green energy supply portfolio will comprise 10% wind; 40% small hydro; 50% biomass; and less than 1% solar.[35]

In comparison, Suncor's $100 million investment in renewables represents 2% of total assets in 1999.[36] Rick George is confident that Suncor is up to the challenge of taking a leading position in the alternative and renewable energy market in Canada.

Government Demand for Green Energy

Another factor influencing the playing field for alternative and renewable energy is the trend for municipalities to drive the demand for green power. For example, Toronto City Council has committed to buy 25% of its electricity from renewable sources by 2005. The Toronto City Council has set an emission reduction target of 20% below 1990 levels in the year 2005. Several States in the US have taken the initiative to stimulate renewable energy as well. In Minnesota, Iowa and Texas, the state governments require that a certain percentage of their energy needs be met by renewable energies.[37]

Large Commercial Customers

Large commercial customers are interested in buying renewable energy, and in helping to get green power off the ground. In the United States, 10 major industrial companies took the initiative to form a "green power group."[38] Together these companies account for 7% of industrial energy use in the US. This group intends to develop a corporate market for 1,000 MW of cost competitive green power by 2010. Participating in this initiative are: DuPont, General Motors, Interface, IBM, Johnson & Johnson, Kinko's, Cargill, Dow, Alcoa Inc, Delphi Automotive Systems and Pitney Bowes. The World Resources Institute, Business for Social Responsibility, the US Environmental Protection Agency and the US Department of Energy are also involved. Plans are to identify regulatory and other barriers and opportunities to develop a better market place for renewables. The group will try to engage suppliers, purchasers, and other stakeholders in a collaborative green power market-change strategy.

Deregulation of the Electricity Sector

Alberta's electricity industry was deregulated in 1996. Two organizations were created to facilitate the deregulation process: 1) an independent transmission administrator, and 2) the Power Pool of Alberta. The Power Pool operates a market for exchanges of electricity. Groups can bid for and offer to supply hourly allocation of power. Many independent power producers now participate in Alberta's electricity market, supplying consumers with renewable energy generated from sources such as wind and small hydro[39].

California, Pennsylvania, New South Wales, the United Kingdom, and Sweden have also deregulated their electricity markets.[40] This has resulted in domestic consumers buying green power at the rate of 1% in California; 2% in Pennsylvania; and 2% in New South Wales.[41] Further information on policies and regulation supporting renewable energy in the United States is provided in Exhibit 16.

A lesson that utilities have learned when deregulating electricity markets is the importance of educating consumers about their choice to buy green electricity and transparency of information. All of the above jurisdictions used some form of green electricity certification. California is the only one to require a mandatory "power content label" with a disclosure function that verifies the green electricity source. Ontario plans to deregulate its electricity market at some time in the year 2001, and is expected to introduce some form of source disclosure as well.

European Renewable Energy Market Growth is Driving Down Costs

In Europe, many policy instruments and investment incentives are in place to stimulate the growth and development of renewable energy. This has enabled a number of European countries to become leaders of renewable energy use (see Exhibit 15). The Netherlands Energy Research Foundation forecasts that 22.1% of total EU energy production will be generated from renewables by 2010[42]. Fiscal measures in EU member states have been introduced as supportive instruments to stimulate renewable energy. They are set moderately to protect competitiveness. These incentives include subsidies, rebates, lower Value Added Tax rates, tax exemption for green funds, and fiscally attractive depreciation schemes (see Exhibit 17). The European Union's investments in alternative and renewable energies have played a significant role in driving down the costs of producing electricity from renewable sources.

Distributed Energy Supply Model

Another important factor in the emerging market for alternative and renewable energy is the possibility of the growth of a new model for energy and electricity distribution. In a distributed energy supply model, a household generates electricity for its own needs (from a solar cell or wind turbine for example) and sells excess power to the grid. It is a model of electricity distribution where individual consumers are also producers of electricity. This model exists in contrast to the conventional monolithic model of electricity distribution where large power generating facilities feed a comprehensive distribution grid. Globally, three billion people are not connected to an electricity grid. Alternative and renewable energy technologies are easily adapted to small-scale power generation. If this distributed energy supply model were to predominate in the future, it would create an increased opportunity for alternative and renewable sources of energy.[43] This model is already starting to take shape in certain areas of the United States. In Minnesota, electrical utilities are required to buy from households, at peak rate prices, any excess electricity that is generated. In Denmark, wind energy production is strongly reliant on small wind turbines owned by farmers.

Investors Looking for Sustainable Options – A Matter of Timing

The development of the Dow Jones Sustainability Index gives an indication of the world investment community's interest in sustainable development. In recognition of Suncor's commitment to environmental and social responsibility, the Dow Jones Sustainability Group Index named Suncor as the world leader in sustainability in the oil and gas industry in 1998. There is no strong evidence that Suncor's existing shareholders place a premium on the company's sustainability initiatives at the present time. According to Suncor's Head of Investor Relations, John Rogers, the track record on growth and future commitments to growing shareholder value are more significant drivers of shareholder interest at the present time. However, with possible shifts in public policy and fiscal intervention a very real possibility it may only be a matter of time before investors start to capitalize more aggressively on sustainable growth opportunities.

SUNCOR'S SUSTAINABLE DEVELOPMENT CHALLENGE

Suncor's greenhouse gas emissions and their growing contribution to climate change poses a challenge to Suncor's sustainable development commitment. As described, Suncor has responded with a parallel path approach to sustainability. On one path Suncor strives to meet current hydrocarbon needs as responsibly as possible. On the other path Suncor invests in alternative and renewable energy to provide for the environmentally sustainable energy needs of the future. These two paths are described in greater detail below.

Path One: Responsible Development of Hydrocarbon Energy

Suncor strives to follow the first path, the responsible development of oil sands, with a number of complementary strategies:

Manage emissions. Suncor has set a goal to lowering net greenhouse gas emissions to 6% below 1990 levels by 2010. Suncor plans to achieve this through utilizing new technologies and increasing efficiencies internally and through pursuing external credits for reducing GHG emissions.

Pursue domestic and international offsets. Although Suncor is continually improving the internal efficiency of its operations and lowering GHG emissions per unit of production, the Project Millennium expansion means that Suncor will have to pursue external mechanisms for reducing its net GHG emissions. To do this, Suncor is intending to fully utilize the flexibility mechanisms available under the Kyoto protocol for obtaining emissions credits for external projects that reduce GHG emissions. For example, Suncor has entered into offset projects, such as reforestation in Belize, which will reduce net emissions of greenhouse gases by 600,000 tonnes of CO_2 over the period 2000-2005[44]. Suncor also initiated one of the world's first cross-border emission trades when it purchased the credits for emission reductions that had been undertaken by Niagara Mohawk Power in the United States.[45] In addition to the Niagara Mohawk Power trade, Suncor is involved in "Partnership for Climate Action," a multi company, multi-industry, multinational group that is looking at further developing the Kyoto emissions trading mechanism.

Support environmental and economic research. Suncor has joined six other global energy companies to research and develop a cost-effective technique that could lead to a notable reduction in GHG emission across a wide range of industries. This project aims to capture significant amounts of CO_2 emitted from power generation and industrial sources and store the gas in geologic formations below the earth's surface.

Constructive public policy input in support of sustainable solutions. Suncor actively participates in activities that encourage industry to take a leading role in addressing sustainability and GHG issues. For example, Suncor has published a report on policy incentives necessary to facilitate the development of renewable energy with the Pembina Institute, an Alberta based environmental organization. Suncor is also an active participant in the World Business Council for Sustainable Development and a member of the Alberta Economic Development Authority to promote climate change remedies.

Employee and public education. Suncor's approach to sustainable development includes employee and public education. Each business unit undertakes employee education programs and has implemented programs where employees can suggest improvements in business operations. Suncor also sponsors the "ABCs of Climate Change," a program developed by the Energy Council of Canada to demonstrate to company employees and local communities how individuals can contribute to reducing emissions in their everyday lives. In addition, representatives of Suncor undertook speaking engagements at more than 50 climate change related events in 1999.

Public environmental reporting and measurement of emission levels. Suncor publishes an Environment, Health and Safety report every two years which describes Suncor's progress towards sustainable development in detail. Suncor actively supports and participates in the Canadian government's Voluntary Challenge and Registration program where companies measure and report their GHG emissions and submit targets for reduction and plans to achieve these targets.[46] Suncor is also involved in "The Greenhouse Gas Protocol Initiative" in conjunction with the World Business Council for Sustainable Development and the World Resources Institute. This is a protocol for using a standardized set of principles for measuring emissions and verifying reductions. The development of this protocol sets the foundation for all of the other GHG reduction initiatives Suncor is involved in. It supports Suncor's internal processes as well.

Path Two: Develop Alternative and Renewable Energy

The second element of Suncor's parallel path approach, the development of alternative and renewable energies, was launched in January 2000. To turn the parallel path approach into reality, Rick George appointed Gerry Manwell to lead the alternative energy business unit. Manwell had worked in oil sands for 15 years and had been one of the key architects of Suncor's oil sands growth strategy. George looked to Gerry Manwell to bring the same energy and innovation to the fledgling alternative and renewable energy unit as he had applied in oil sands development.

Manwell's challenge is to invest $100 million in opportunities that would match Suncor's needs and competencies and would ultimately support Suncor's growth strategy. Manwell also has the challenge to create a viable business unit that delivers acceptable short-term economic returns as well as long-term strategic gains. Possible investment opportunities that have been considered initially include research and development projects and commercial ventures in areas such as producing fuel from biomass, conversion of municipal solid waste to energy, recovering

methane from landfills and opportunities for run of river hydro, wind and solar power (see Exhibit 18). In many of these areas, making alternative and renewable energy viable would rely on the development of new technologies, consumer demand, developing economies of scale, and the successful commercialization of existing technologies.

The Alternative and Renewable Energy Strategy

Under the leadership of Gerry Manwell and Rick George, the alternative and renewable energy business unit was formed with the following mission:

> *"The alternative and renewable energy team will capture value by building a successful portfolio of alternative and renewable energy businesses opportunities. We will meet the energy needs of a changing world by establishing Suncor as a renewable energy provider to ensure our continued growth as a unique and sustainable energy company."*

The alternative and renewable energy unit seeks to achieve its mission by focusing on three 'commercial' strategies and two additional 'pro-active' or innovation-dependent strategies that will allow Suncor to take advantage of future economic opportunities in alternative and renewable energy. As described below Suncor's five strategies are: producing and marketing green energy for large industrial customers, gaining expertise in production and trading of GHG emission credits from green energy products, providing green energy to remote communities, learning through research and development, and engaging in enterprise endeavours to develop promising technologies.

Green energy production and marketing for large industrial users. This strategy is based on providing green energy for large industrial energy users who have made a commitment to sustainability and producing or purchasing green energy. Suncor could transfer its own experience with installing industrial co-generation facilities at its oil sands plant – a system where waste heat from industrial operations is captured to generate electricity, heat buildings, or meet other energy needs. In this strategy, Suncor could also focus on project management and construction of alternative and renewable energy facilities such as wind farms, run-of-river-hydro dams, or landfill gas capture projects. The focus would not be on selling the electricity from these projects, because of the low rate of return. Instead a greater return on investment would be made in building the facility and successfully integrating green energy with other energy sources.

Greenhouse gas credit production and trading. This strategy focuses on using alternative and renewable energy projects to produce electricity as well as GHG credits. Suncor can either use the credits internally or sell them to others seeking to reduce their net GHG emissions. Producing electricity from landfill gas is a good example of this strategy. Garbage dumps emit methane which has 21 times the GHG impact of CO_2. By capturing methane Suncor would be able to capture a large GHG emission credit. Moreover, methane can be turned into electricity cheaply, and the exhaust heat can be captured for further use. What has the potential to make this technology commercially viable is the value of the GHG emission credit[47].

Community energy solutions. The third 'commercial' strategy focuses on providing alternative and renewable forms of energy to remote communities that are usually off the regular electrical power grid. Suncor could use its extensive experience consulting stakeholders in aboriginal communities and other northern communities to help provide renewable energy solutions that would benefit the environment, communities and Suncor.

Learning. Within this 'pro-active' strategy, Suncor continues to learn about technologies that could develop into future growth opportunities for the company and contribute to the triple bottom line. At this early stage of learning, the focus would be on research and development and understanding how each renewable technology fits with Suncor's existing needs and competencies. For example, Suncor is financing the development of a clean energy lab at UBC to further the development of technology for hydrogen based energy sources.

Enterprise endeavors. With this strategy, Suncor intends to apply its experience of commercializing oil sands technology to commercializing new technology in alternative and renewable energy. It wants to support its international and domestic expansion by providing renewable energy as a complement to traditional growth. Suncor did not develop the technology for oil sands. Instead, they bought it from the researchers and successfully developed the technology to where it was commercially viable. A number of alternative and renewable energy technologies available today still have to be further developed and commercialized before they can compete economically with other forms of energy.

FUTURE STRATEGY

As Suncor continues to move ahead with its parallel path strategy, combining rapid development of oil sands and its alternative and renewable energy business, the company is learning that the development of green energy in Canada faces a number of significant barriers and risks. With its abundance of hydro power, Canada's electricity prices are among the lowest in the world. This makes it increasingly difficult for new renewable technologies to compete cost-effectively in Canada. In addition, Canadian consumers are generally unaware of the benefits of renewable energy. In most Canadian jurisdictions, the regulation of electricity markets prevents consumers from choosing green power, even if it is available.

Furthermore, renewable energy projects face unfavorable tax rates and depreciation schedules in Canada compared with conventional investments. An investment in a renewable energy project must be written off over the lifetime of the project. Income tax rates for renewable energy projects are comparable to manufacturing enterprises, whereas a coal electricity generator enjoys a more favorable tax regime because it is a regulated utility.

NGOs have responded to Suncor's parallel path approach and investment in alternative and renewable energy in a number of ways. Greenpeace has applauded Suncor's investment in renewable energy and uses Suncor as a model for the direction that other oil companies could follow. However, consistent with their position opposing new oil developments, Greenpeace has an ongoing campaign protesting Suncor's Stuart Oil Shale project in Australia (see Exhibit 19 for Greenpeace's letter to the Suncor board of directors). In contrast, other NGOs have formed a partnership relationship with Suncor to fight against global warming by encouraging the government to support alternative and renewable energy sources. In a remarkable letter to Canadian Finance Minister Paul Martin in December 2000, the Clean Air Renewable Energy coalition, in which energy companies teamed up with environmental NGOs, pressed for the introduction of a consumer tax credit for green electricity purchasers, and an investment tax credit for green power research and development (see Exhibit 20).

In addition to external factors, Suncor's alternative and renewable energy business faces some internal challenges as well. Rick George and Suncor's Board are committed to the parallel path approach and developing alternative and renewable energy. But this business is in many ways a new world for Suncor. Much has to be learned, and the current commitment of Suncor's Board and its investors has to be maintained over the long term, if Suncor's alternative and renewable energy business is to achieve its potential. The goal of share value doubling every five years cannot be overlooked.

As Suncor moves ahead with its sustainability strategy and with its plans for alternative and renewable energy, it is conscious of the need to balance the interests of all of its stakeholders. Like all investors, Suncor's shareholders are primarily interested in dividends and growth in share value. Governments are interested in strong economies, and oil royalties. Customers are interested in convenience and cheap, clean burning fuel. Employees are interested in job satisfaction and security, and a safe and healthy working environment. Environmental organizations and concerned citizens are worried about the effects of climate change and are demanding a healthy ecosystem. Local communities are interested in clean air, water and land, and jobs and training for their young people.

"One has to be at the leading edge, not at the bleeding edge, to be successful in the long term with sustainable development initiatives," says Gord Lambert, Corporate Director of Sustainable Development at Suncor. "You can't be too far ahead of your stakeholders and you can't be too far behind them either."

The challenge for Suncor will be to maintain the support and commitment of its key stakeholders for the next 5-10 years through a significant process of re-invention, while continuing to create better than average economic and social value and protecting the environment. Achieving this within a steady state political and fiscal system would be a major accomplishment. Doing it during a period that is likely to witness significant changes in the political and fiscal environment because of mounting anxieties over global climate change, is an even greater challenge. However, it may be asserted that in the quest for sustainability - as with any other make or break business challenge - 'fortune favours the brave'. So perhaps if Suncor retains its vision, its entrepreneurial spirit and continues to grow the support and allegiance of its stakeholders, these capabilities may become sufficient sources of differentiation and competitive advantage for the company to fulfill its strategy.

Key Questions

Given Suncor's commitment to alternative and renewable energy, how can the company maximize the short and long term value of its $100 million investment? Consider the current opportunities and constraints to developing 'green energy' in North America; the market opportunities in Europe and the developing world and the political and fiscal changes that may arise from the Kyoto Protocol.

EXHIBIT 1

Suncor's Five-Year Financial Summary

Source: Suncor Energy Inc. Annual Report 1999, p. 64.

($ millions except for ratios)	1999	1998	1997	1996	1995
Revenues					
Oil Sands	**889**	768	751	766	676
Exploration and Production	**306**	290	302	264	191
Sunoco	**1 779**	1 533	1 673	1 638	1 516
Corporate and eliminations	**(587)**	(521)	(572)	(568)	(482)
	2 387	2 070	2 154	2 100	1 901
Net earnings (loss)					
Oil Sands	**174**	150	179	164	130
Exploration and Production	**43**	25	24	22	10
Sunoco	**31**	40	39	32	36
Corporate and eliminations	**(48)**	(27)	(19)	(31)	(25)
	200	188	223	187	151
Cash flow provided from (used in) operations					
Oil Sands	**405**	320	331	318	278
Exploration and Production	**172**	167	162	146	103
Sunoco	**103**	112	121	90	106
Corporate and eliminations	**(89)**	(19)	(39)	(63)	(92)
	591	580	575	491	395
Capital and exploration expenditures					
Oil Sands	**1 057**	507	491	321	193
Exploration and Production	**200**	242	240	187	201
Sunoco	**42**	60	54	55	38
Corporate	**51**	127	62	--	4
	1 350	936	847	563	436
Total Assets	**5 176**	4 104	3 457	2 824	2 440
Capital employed*					
Debt					
Short-term borrowings	**32**	16	36	24	35
Current portion of long-term borrowings	**1**	1	6	6	6
Long-term borrowings	**1 306**	1 298	767	395	253
Shareholders' equity	**2 142**	1 519	1 401	1 247	1 127
	3 481	2 834	2 210	1 672	1 421
Less capitalized costs related to major projects in progress	**(1 084)**	(373)	(599)	(157)	(157)
	2 397	2 461	1 611	1 515	1 264
Ratios					
Per common share (dollars)					
- net earnings	**1.81**	1.70	2.04	1.71	1.38
- net earnings attributable to common shareholders	**1.61**	1.70	2.04	1.71	1.38
- cash dividends	**0.68**	0.68	0.68	0.64	0.57
- cash flow provided from operations	**5.36**	5.27	5.24	4.49	3.62
- cash flow provided from operations attributable to common shareholders	**5.02**	5.27	5.24	4.49	3.62
Return on capital employed (%) *	**8.8**	9.9	14.8	13.7	12.6
Return on shareholders' equity (%) *	**10.9**	12.9	16.9	15.8	13.9
Debt to debt plus shareholders' equity (%)	**38.5**	46.4	36.6	25.4	20.7
Debt to cash flow provided from operations (times)	**2.3**	2.2	1.4	0.9	0.7
Interest coverage – cash flow basis *	**8.8**	8.7	15.4	21.9	20.1

* Definitions:

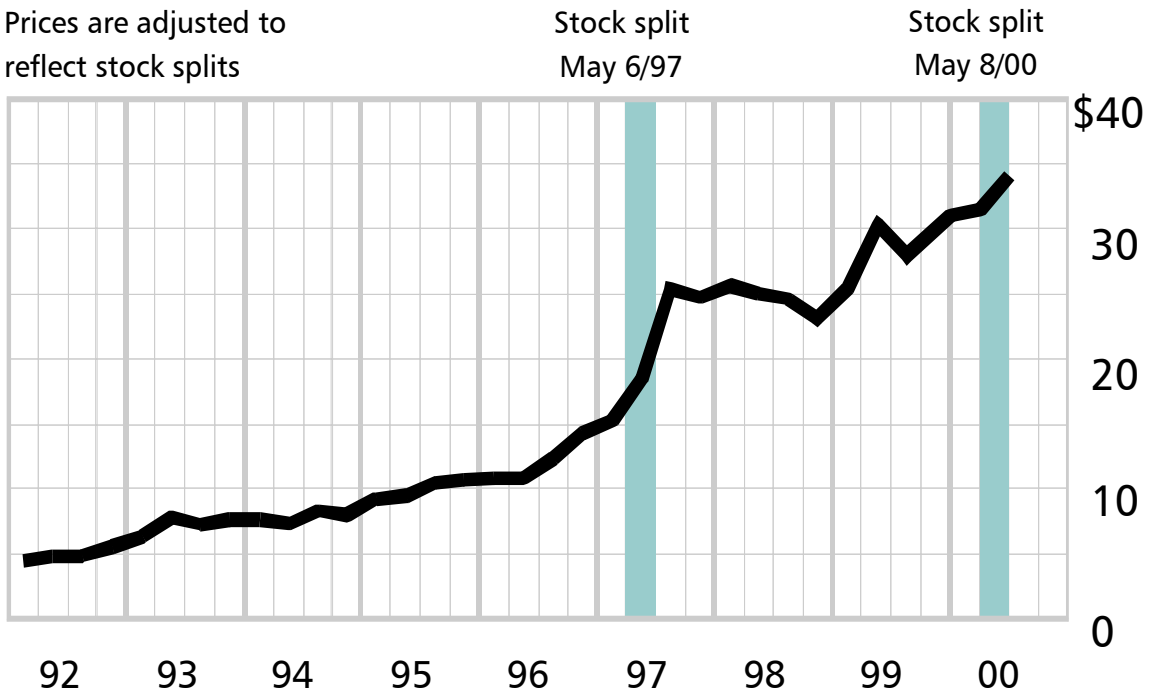
Capital employed – the total of shareholders' equity and debt (short-term borrowings and current and long-term portions of long-term borrowings), less capitalized costs related to major projects in progress. Long-term borrowings are recorded mainly in the corporate segment.

Return on shareholders' equity – earnings as a percentage of average shareholders' equity. Average shareholders' equity is the aggregate of total shareholders' equity at the beginning and end of the year divided by two.

Interest coverage – cash flow basis – cash flow provided from operations before interest expense and income tax payments, divided by interest expenses plus interest capitalized.

EXHIBIT 2

Suncor's Stock Performance 1992-2000



Stock price in Canadian Dollars.
Source: Suncor presentation by Gerry Manwell, Vice President, Alternative Energy Business Development, to the Sustainable Enterprise Academy, York University, October 19th, 2000.

EXHIBIT 3

Selected Financial Data for Canadian Integrated Oil Companies

Integrated oil companies have production, as well as refining and marketing operations. The following financial data are from Canada's integrated oil companies as listed in Canada's Voluntary Challenge and Registry Program. All figures are for 1999 in millions of Canadian Dollars:

	Total Assets	Total Revenue	Total Net Income	Shareholder Equity	Return on Equity (ROE)
Suncor Energy Inc.	5,176	2,387	200	1,830[(1)]	10.9%
Imperial Oil Ltd.	9,687	10,348	582	4,438	13.1%
Petro-Canada	8,661	6,147	233	4,083	5.7%
Shell Canada Ltd.	6,574	5,379	641	3,835	16.7%

1. Suncor's shareholder equity is the average of total shareholder equity at the beginning and end of the year.

Source: 1999 annual reports from each company. Suncor: http://www.suncor.ca/proven/proven_annual.html Imperial Oil: http://www.imperialoil.com/index.html, Petro-Canada: http://www.petro-canada.ca/html/investor/disclosure/annual/PCAR1999_E.pdf, Shell Canada: http://205.233.108.142/code/investor/ar99.pdf

EXHIBIT 4

Suncor's Net Earnings, Operating Cash Flow and Capital Employed by Business Unit, 1999

	Oil Sands	Natural Gas	Sunoco
Net Earnings	70%	17%	13%
Operating Cash Flow	60%	25%	15%
Capital Employed	55%	29%	16%

Source: Suncor Energy Inc. 1999 Annual Report.

EXHIBIT 5

Suncor's Core Purpose

Suncor energy is a unique and sustainable energy company dedicated to vigorous growth in world wide markets by meeting the changing expectations of our current and future stakeholders.

We will actively dialogue and create congruence with our colleagues, investors, customers, partners and communities. We will involve them in our opportunities, processes and issues with the goal of creating long-lasting and mutually beneficial relationships. Our values and beliefs will be demonstrated in all our decisions and actions.

To accomplish our core purpose we will individually and collectively:

- Identify and seize significant growth opportunities in strategically selected markets
- Transform and grow our existing business and continuously improve our processes, products and services
- Earn exceptional customer loyalty by providing quality products and services and building relationships that are value-creating and sustainable
- Invest in opportunities to develop and apply our unique and diverse talents in ways that build the business and achieve our personal growth, reward and satisfaction
- Achieve leadership in health, safety and environmental performance within our businesses, our communities and the eco-systems in which we operate.

Our success is measured by the degree to which we deliver on our commitments and exceed the expectations of stakeholders while doubling our market value every five years.

EXHIBIT 6

Suncor's Principles of Consultation

Integrity of the regulatory process preserved. The regulatory process fulfills a legitimate function that must be met at the end of the process and thus the integrity of the process must not be compromised by the drive to become more efficient.

Open and transparent. All information is made available to stakeholders in a format that is transparent and customised to their needs. All stakeholders received the information within the same time frame.

Information shared freely and early. To facilitate early stakeholder feedback, information would be shared during the developmental stage of the project. This information would usually be distributed in draft form in order to maximise input.

Stakeholders must be able to participate effectively. Stakeholders must have adequate resources to review information and provide valuable input. They must also be allotted time to digest this information and understand the company's proposal.

Sensitivity to all needs of participants. The consultation process must respect the needs of all participants and their other relationships.

EXHIBIT 7

Canada's Greenhouse Gas Emissions by Sector, 1998

Source: Government of Canada Action Plan 2000 on Climate Change

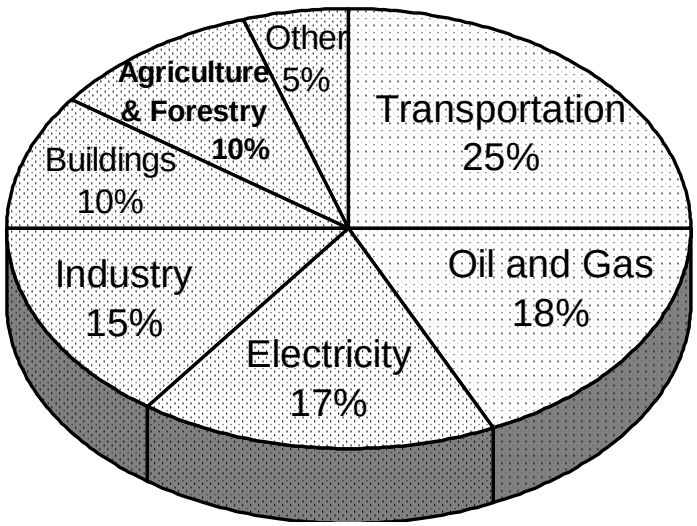
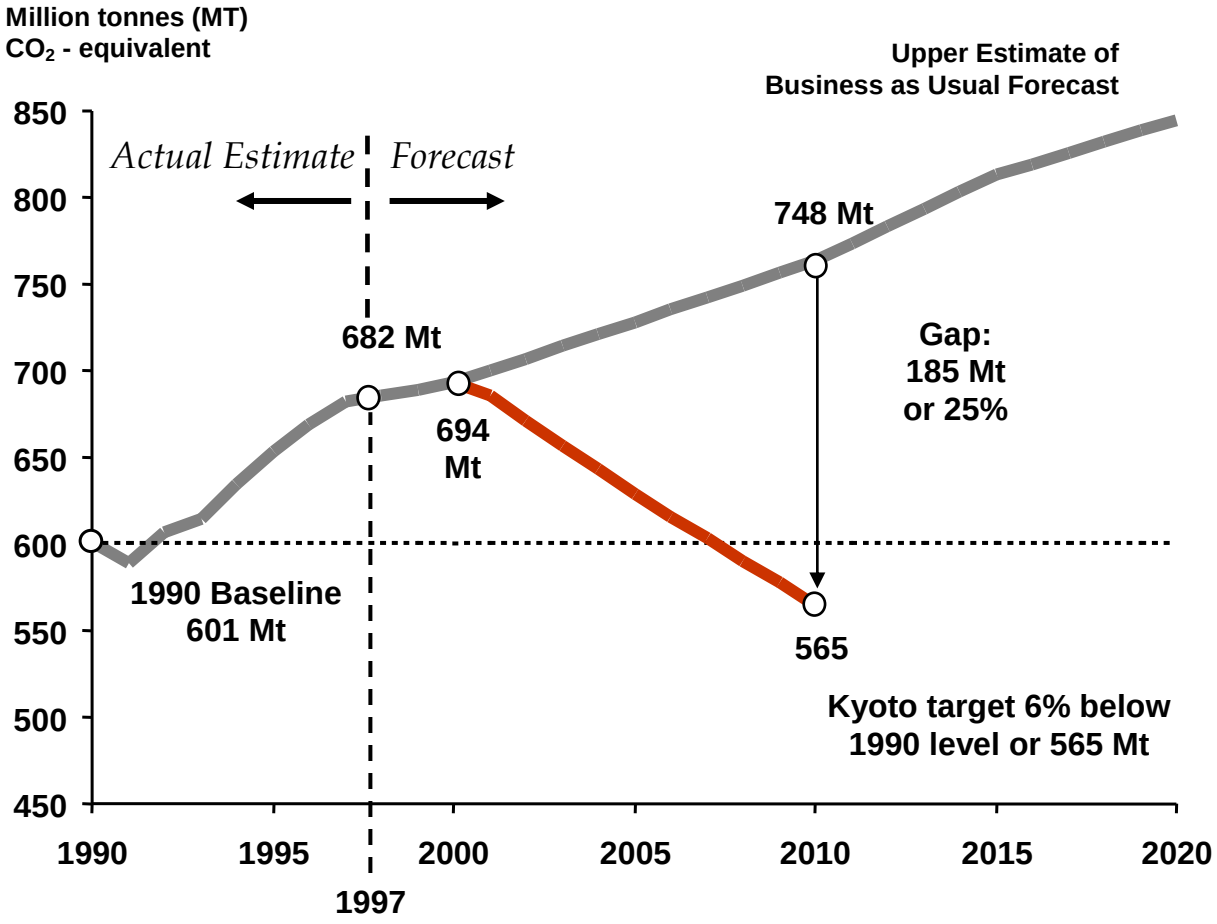


EXHIBIT 8

Canada's Emissions Projections and the Kyoto Target

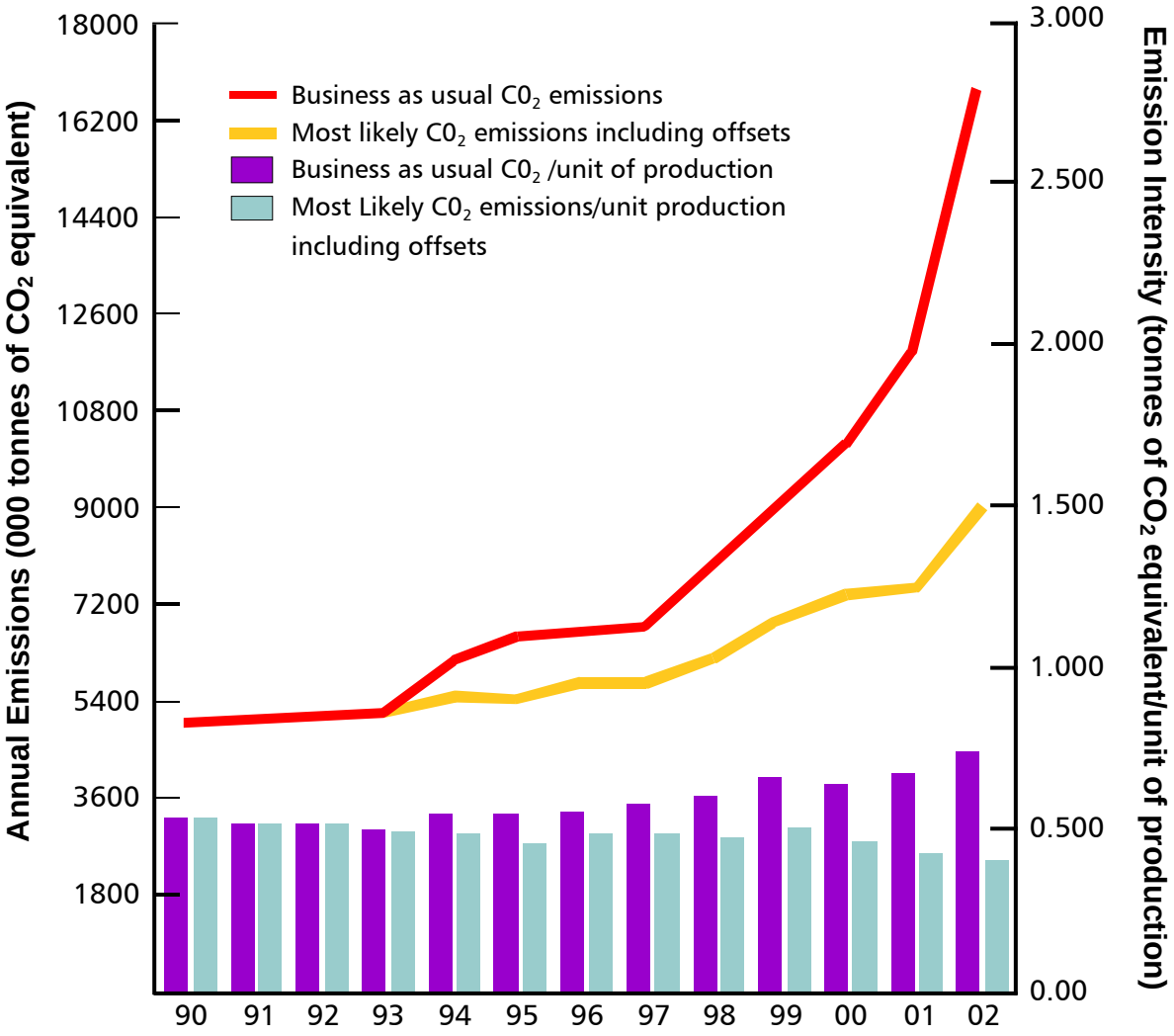


Under the Kyoto Protocol, Canada adopted a greenhouse gas reduction target of 6% below its 1990 baseline. This exhibit illustrates Canada's longer-term emission trends to 2010 (with actual estimates to 1997 and a business-as-usual forecast beyond that). Without additional policy instruments or adjustments to the underlying structure of the economy, Canada's GHG emissions are expected to increase to a level 25% above Canada's Kyoto commitment.

Source: Environment Canada, *Canada's Greenhouse Gas Inventory: 1997 Emissions and Removals with Trends*. Ottawa, 1999.

EXHIBIT 9

Suncor's Greenhouse Gas Emissions and Projection



In this exhibit, the business as usual forecasts project the greenhouse gas emissions that would have occurred if no actions had been taken to reduce them. The "most likely" forecasts incorporate actual data for the period 1990 to 1999. The most likely forecasts for 2000-2002 include greenhouse gas offsets such as forest projects in Costa Rica.

Source: Suncor's Annual Progress Report to Canada's Climate Change Voluntary Challenge and Registry Program, October 2000.

EXHIBIT 10

Suncor's Greenhouse Gas Emission by Business Unit in 1999

Source: Suncor's Report to Canada's Climate Change Voluntary Challenge and Registry Program, 2000, p. 19.

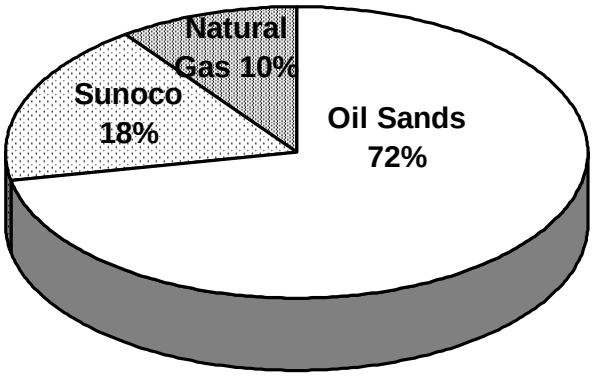


EXHIBIT 11

Flexibility Mechanisms under the Kyoto Protocol

Emissions Trading

Under Article 17 of the Kyoto Protocol, emissions trading is a market mechanism that allows the trading of assigned amounts of emissions among certain countries listed in Annex B of the protocol. The principle behind this mechanism for reducing GHG emissions is that when emissions are reduced in one country, this country constitutes a service to the global community with reducing the risk of climate change for the world at large. Under the Kyoto protocol, emissions trading is allowed for most industrialized countries and several economies in transition who could buy emission credits obtained in developing countries.[48] Countries will tend to buy emission credits as long as they cost less then domestic emission abatement cost. Therefore, emission trading is seen as a cost effective way of reaching GHG reductions worldwide.

The Clean Development Mechanism (CDM)

Under Article 12 of the Kyoto Protocol, the Clean Development Mechanism is designed to enable industrialized countries to finance emissions-reduction projects in developing countries. In doing so, sustainable development could be encouraged in the developing countries and the industrialized countries would receive credit for the GHG reductions achieved. CDM projects can be put into place right now but it is still unknown whether the credits accrued from these projects will be counted as emission reductions.

Joint Implementation (JI)

Under Article 6 of the Kyoto Protocol, Joint Implementation is the transfer or acquisition of emission reduction credits between industrialized countries that have emission reduction targets. Currently, the GHG reductions achieved by these projects are only effective from 2008 to 2012. Therefore, the current value of the credits from a Joint Implementation project would be heavily discounted before 2008. Little activity is currently taking place in this area because the deadline is not on the immediate horizon.

EXHIBIT 12 A

Carbon Intensity of Energy Sources

Carbon intensity is a measure of the amount of greenhouse gasses produced per unit of energy. The choice of energy source makes a significant difference in terms of the amount of carbon dioxide emitted in meeting energy demand. The carbon intensity of various energy sources is given below.

Wind, Solar, Small Hydro. The energy produced from renewable sources such as wind, solar, and small hydro is not accompanied by GHG emissions.

Biomass. The combustion of biomass (such as waste wood, for example) does release CO_2 into the atmosphere. However, if properly managed, this CO_2 release is considered to be a sustainable part of the natural carbon cycle. As such, emissions from biomass are not included in national GHG inventories from fuel combustion.[49] Instead, CO_2 emissions from biomass are accounted for in a "land use change and forestry" category to determine any long-term decline in the total carbon embodied in standing biomass.

Large Hydro. All dam reservoirs, like natural lakes, emit greenhouse gases due to the rotting of vegetation and carbon inflows from the catchment area. What is currently unclear is the scale of these emissions. The World Commission on Dams reports preliminary data from a case study of a hydro dam in Brazil which shows that the level of GHG emissions is significant, relative to emissions from equivalent thermal power plants.[50] However, in other reservoirs studied (notably those in boreal zones), gross emissions of greenhouse gases are significantly lower than the thermal alternative. The report notes that more research is needed on a case-by-case basis to demonstrate the capacity of hydropower to offset climate change.

Nuclear. Nuclear power plants do not emit greenhouse gases.

Fossil Fuels. When burned, coal emits the largest amount of greenhouse gases per unit of energy output, petroleum the next largest, and natural gas the least of the fossil fuels. Within each type of fossil fuel carbon intensity may vary.[51] However, the following is an average carbon intensity (units indicate tonnes of carbon emitted per terra joule of energy[52]): Coal, 27; Petroleum, 20; Natural Gas, 15.[53]

In addition to emitting greenhouse gases when consumed for energy generation, the production of fossil fuels also releases greenhouse gases into the atmosphere. Natural Resources Canada provides the following GHG emission rates for the production of oil and natural gas:

Oil from Oil Sand	126	kilograms of CO2 equivalent per barrel of oil
Conventional Oil	31	kilograms of CO2 equivalent per barrel of oil
Natural Gas	4	kilograms of CO2 equivalent per thousand cubic feet of natural gas

Source: *Canada's Emissions Outlook: An Update*. Ottawa: Natural Resources Canada, 1999, page B-5. Figures from 1995. http://www.nrcan.gc.ca/es/ceo/outlook.pdf

EXHIBIT 12 B

Table C-1
LIFE CYCLE EMISSIONS
kg CO_2E per m^3 of Transport Fuel used in Central North America

Crude						
Crude Element	Canadian Light	Brent North Sea	Saudi Light	Typical Current Synthetic Crude Oil (a)	Venezuela Heavy (Primary/Water Flood)	Venezuela Very Heavy Partly Upgraded (b)
Production Emissions	211	162	247	685	222(?)	495
Transportation Emission (c)	57	34	163	43	73	45
Refining Emissions	190	188	183	221	253	164
Transport Fuel Combustion (d)	2,734	2,739	2,724	2,713	2,802	2,859
Byproduct Equivalent (c)	380	382	385	466	504	570
TOTAL	**3,572**	**3,505**	**3,782**	**4,128(a)**	**3,854**	**4,134**

Notes:

(a) Current mix Xproduction emissions will decrease in future, and byproduct equivalent emissions will decline slightly. Slightly less crude oil will be needed per m^3 of transport fuel.

(b) Petro Zuata project used as an example, but note low energy (emission) primary production that may not be representative of the Orinoco heavy crude belt. Coke byproduct considered under Byproduct Equivalent. Partially upgraded crude assumed refined in a Comoco Louisiana Refinery, product pipelined to Chicago area.

(c) Marine and pipeline.

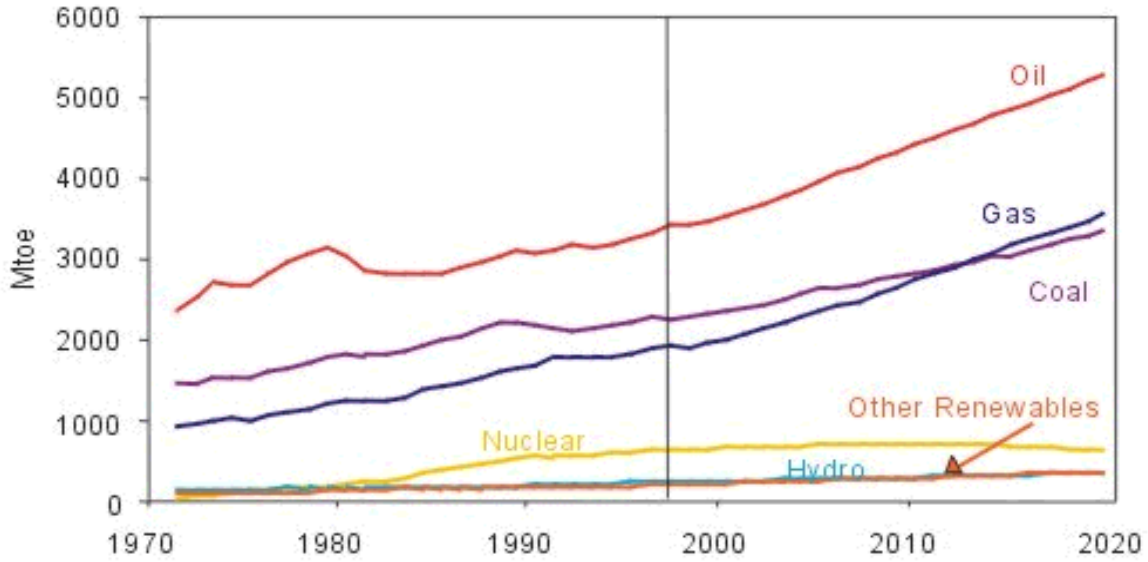
(d) Gasoline, diesel, jet fuel.

(e) In each case same byproduct energy content assumed delivered to economy. Differences from Canadian Light crude byproduct energy corrected by use/reduced use of natural gas.

(?) May be low as well below Canadian equivalent crude production emissions.

EXHIBIT 13

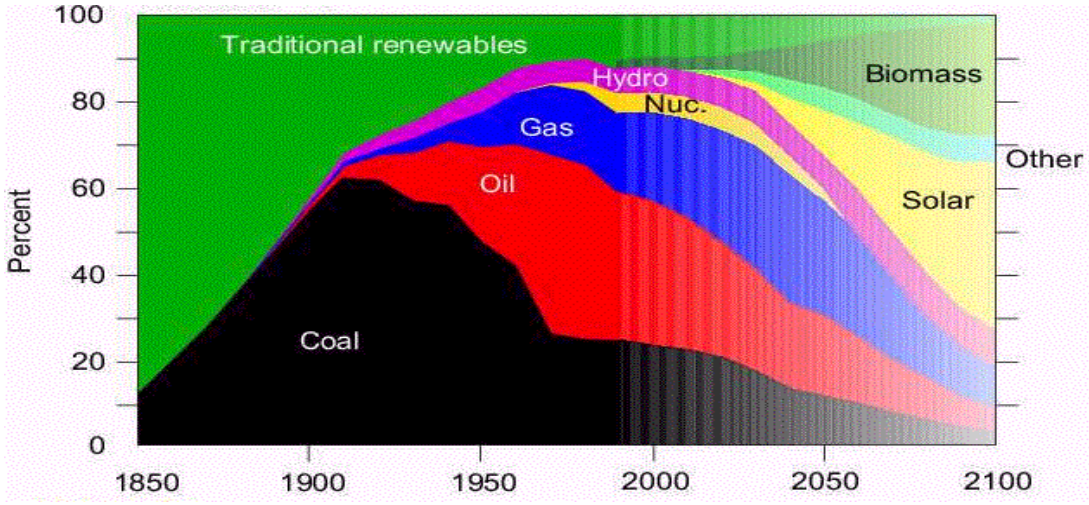
World Energy Scenario Ignoring Possible Initiatives to Address Climate Change



Source: International Energy Agency, *World Energy Outlook 2000*. IEA/OECD 2000. World Primary Energy Supply by Fuel, 1971-2020

EXHIBIT 14

World Energy Scenario Including Possible Initiatives to Address Climate Change



Source: World Energy Council, *Global Energy Scenarios to 2050 and Beyond*

EXHIBIT 15

Alternative and Renewable Energy as a Percentage of Total Net Electricity Generation[54] by Country in 1997

In this table, Alternative and Renewable Energy includes biomass, geothermal, solar, and wind electric power generation[55].

	1997
USA	2.2
Canada	0.7
Denmark	7.2
Belgium	1.5
UK	1.8
Austria	2.7
Finland	10.7
Sweden	2.4
The Netherlands	4.6
Spain	1.3
Germany	1.9

Source:

The Energy Information Administration of the Department of Energy at the U.S. government: www.eia.doe.gov/emeu/iea/table28.html and www.eia.doe.gov/emeu/iea/table63.html.

EXHIBIT 16

Renewable Energy Policy Instruments in the United States[56]

The continued support for electricity generated from renewables faces strong challenges as electricity markets move towards greater competition and deregulation. Renewable energy sources, although environmentally beneficial, are generally more expensive options for generating electricity. In order to maintain renewables as a generating option, a number of strategies have been put in place or proposed. One or more of these mechanisms, described below, are generally part of U.S. Federal and State proposals to support renewables while their costs continue to decline.

Renewable Portfolio Standard

A renewable portfolio standard (RPS) is a market-based strategy to ensure that renewable energy constitutes a certain percentage of total energy generation or consumption. It guarantees that a minimum percentage of generation comes from renewable sources. Under the Federal Government's proposal, an initial RPS requirement would be set close to the existing ratio of renewable generation to total retail electricity sales, with an intermediate increase in 2005, followed by an increase to 5.5 percent in 2010. Retail sellers could meet the RPS requirement

either by generating sufficient renewable electricity to meet the ratio, or by purchasing tradable renewable electricity credits that would be created and tracked.

Systems Benefit Charge

A number of states have been considering a Systems Benefit Charge (SBC) or "wires charge." This would be a fee that would be paid by users of distribution lines, either generators or consumers. It would be included in the cost of electricity to all consumers. Revenues from the charge could be pooled for use in a number of ways to fund the development of selected renewable energy projects.

Public Benefit Fund

This federal government plan supports the creation of a $3 billion Public Benefit Fund (PBF) to provide matching funds to States for low-income assistance, energy efficiency programs, consumer education, and the development and demonstration of energy technologies, particularly renewables. The PBF would be a 15-year program, funded through a generation or transmission interconnection fee on all electricity.

Net Metering

Net metering refers to the concept that a facility is permitted to sell any excess power it generates over its load requirement back to the electrical grid to offset consumption. Under this federal government plan, all consumers would be eligible for net metering, and all distribution service providers would be required to assure the availability of interconnection. This provision would give consumers the option of choosing suppliers on the basis of their generation mix, including paying a premium for energy generated from renewables.

Green Marketing

Green pricing or green marketing is an approach U.S. States have used to maintain or increase demand for renewable electricity. In green marketing programs, electricity suppliers offer consumers electricity produced from environmentally preferred resources consisting largely of renewable energy. Consumers who voluntarily choose to purchase their electricity under a green marketing program pay a premium above their normal electricity bills. This premium is then applied toward the additional costs incurred by electricity suppliers to develop and maintain a renewable power project that might otherwise not be cost-effective.[57]

EXHIBIT 17

Renewable Energy Policy Instruments in the European Union

In **The Netherlands** up to 50% of the Research and Development project costs for renewables can be subsidized, and up to 52% of investments in renewable energy supply can be deducted from taxable income. The Netherlands has a "green tax" on conventional energy sources to support the development of renewables. In addition, interest obtained from green investments is exempt from taxes.[58] Green certificates have recently been introduced in The Netherlands.

In **Germany**, renewable electricity production comes with guaranteed premium prices (a feed in tariff) in combination with a purchase obligation by grid operators of 5%.[59]

In the **UK**, a tendering system exists known as the Non-Fossil Fuel Obligation (NFFO).[60] The NFFO obliges the Regional Electricity Companies to buy a certain amount of renewable electricity at a premium price. This system has succeeded in bringing wind energy into the open market and driving the cost of wind generated electricity down to compare with conventionally generated electricity. Also, UK electricity supply companies will be required to provide 10% of green electricity by 2010.[61]

Overview of renewable energy policy instruments in EU Member States:

	Investment subsidy	Feed-in tariff*	Tender	Fiscal or tax	Green certificates**
Austria	o	+	o		
Belgium		o		o	+
Denmark		o		o	+
Finland	+			o	
France	+	o	o		
Germany	+	+			
Greece	+	+		o	
Ireland	+		+	o	
Italy		o		o	
Luxembourg		o			
Netherlands	+			o	+
Portugal		o			
Spain		o		o	
Sweden	+	o			
UK			+		

+ = main instrument o = additional instrument

***Feed-in tariffs** are special subsidies for renewable electricity generation. They come in the form of guaranteed premium prices in combination with a purchase obligation by the utilities. The levels of guaranteed prices and the basis on which they are established varies considerably from country to country. In several countries the feed-in tariff is based on the avoided cost of the utility that has the purchase obligation. Furthermore, the tariff can be differentiated according to season, time-of-day, and continuity of supply.

****Green certificate systems** seek to stimulate green energy demand. The 'greenness' of electricity is incorporated in the green certificate, which is issued at the moment of production, and which can be traded separately from the physical commodity. Certification provides an accounting system to register production, authenticate the source of electricity, facilitate trade, and verify whether demand has been met. Demand may be voluntary, based on the customer's willingness to pay for green electricity, or it can be imposed by the government. In the latter case, penalties are applied if the demand obligation is not met.

Source: ECN (Netherlands energy Research Foundation), "InTraCert Inception Report-The Role of an Integrated Tradable Green Certificate system in a Liberalising market," M.G. Boots, G.J. Schaeffer, C. de Zoeten, December 2000, report number ECN-C-00-085 (www.ecn.nl).

EXHIBIT 18

Renewable Energy Sources Being Considered by Suncor

Landfill/Sewage Gas: Landfill sites and sewage treatment plants produce methane, a powerful greenhouse gas (21 times more powerful than CO_2). Methane can be captured and used to generate electricity.

Biomass: Utilizing plant material or organic wastes in the production of energy **(**incineration and digestion of wastes from municipal, industrial, and agricultural sources; energy forestry and energy crops). Today, commercial biomass energy contributes more to world primary energy production than all other renewable sources, except for large-scale hydro-electricity.[62] Biomass technology is mature and reliable. It is used in many applications in many countries around the world. When large volumes of biomass exist, biomass can be economic and compete economically with natural gas.[63]

Run-of-River Hydro: Run of river hydro facilities use normal river flow to turn turbines. No large dams or reservoirs are required.[64] Canadian Hydro Power Developers uses run-of-river generating facilities in Alberta, BC and Ontario. It has proven that this form of alternative electricity can be environmentally sustainable and economically attractive.[65]

Solar power: Solar photovoltaic panels transform sunlight into electricity without polluting the environment. At present, photovoltaic power represents a tiny proportion of the world's energy supply, at around 0.01%. However, the solar power market in Canada is growing at a rate of 35 to 40% per year.[66] Encouraged by some governments in Europe and Japan, consumers, businesses and local authorities are using solar panels that feed surplus current into power grids. The market is also growing for rural electrification, especially in developing countries.

Wind Power: Turning of windmill blades connected to a turbine produce electricity without polluting the environment. Wind power is the world's fastest growing source of energy. Worldwide wind power capacity increased by 32% to 4,912 MW during 1995.[67] The American Wind Energy Association estimates a 50% growth of wind energy in the US by the end of 2001 which would entail 1,000 – 1,500 MW of new capacity. With wind technology improvements, several states have implemented purchase requirements for wind energy. With recent natural gas price increases, wind energy has become a low cost source of power in US states with strong wind resources.[68] The Canadian Wind Energy Association expects Canada to have 10,000 MW of installed wind capacity by 2010, up from its current 137 MW of capacity. According to a poll commissioned by the wind energy industry in late 1995, more than 70% of Canadians would choose wind generated electricity if the choice was available to them, and they would pay more for it.[69]

Price Comparisons of Electricity Generated from Alternative and Renewable Sources
Wind (mature technology and almost economic: $0.10/kWh)
Solar (mature technology, but not economic yet: $0.33/kWh)
Biomass-Anaerobic digestion (currently economic in Europe)
Run of River Hydro (currently economic: $0.01/kWh)
Landfill gas (high GHG credit yield, low capital investment)
For comparison: Conventional electricity is priced at approximately $0.08/kWh.

EXHIBIT 19

Letter from Greenpeace to the Board of Suncor

15 November, 2000

Dear Suncor board member,

I am writing to you regarding Suncor's investment in the Stuart Oil Shale Project in Australia. You may be aware that Greenpeace has been campaigning against the Project since 1998 because of its greenhouse gas emissions and the need to move away from fossil fuels to stop dangerous climate change.

Greenpeace is aware of Suncor's recent decision to put on hold further development of the Project unless key criteria, including the management of greenhouse gas emissions, are met.
This is a clear indication that Suncor has already identified serious financial and environmental problems with this project. However, Greenpeace believes this decision does not go far enough and that there is sufficient reason for Suncor to withdraw from the Stuart Project immediately.

According to Suncor's joint venture partners in the Project, Southern Pacific Petroleum (SPP) and Central Pacific Minerals (CPM), oil shale is nearly four times more greenhouse intensive than conventional oil.[70] Neither Suncor nor SPP/CPM have provided any credible evidence that they can achieve their stated goal of comparable or lower production emissions from shale oil than from conventional oil by Stage 3 of the Project – a reduction in emissions of nearly 80 per cent.

Oil shale's greenhouse gas intensity represents a significant carbon liability over conventional oil. Taking a reasonable range of estimated future carbon prices,[71] Greenpeace's research reveals that carbon liability could cost between five and 25 per cent, and possibly as much as 42 per cent, of SPP/CPM's projected annual revenue from the Stuart Project.[72] This is a significant and material impact. Carbon liability will have a similar negative impact on Suncor's projected annual revenue from the Project.

International agreements such as the UN Framework Convention on Climate Change and the Kyoto Protocol have already resulted in political action to reduce greenhouse gas emissions. As the scientific evidence of human induced climate change mounts, it is highly likely that political action will recognize the need for substantial and more rapid reductions in greenhouse gas emissions. We are moving towards a carbon constrained world where greenhouse gas emissions will be an ever increasing financial liability.

For projects like Stuart which will have a long lifetime, the ability of Suncor to attract finance may be hampered as investment and insurance companies become more aware of the impact that carbon liability will have on their portfolios.

There is widespread opposition to the development of oil shale in Australia from tourism and fishing industries, politicians and scientists, other environment groups and many ordinary Australians. In 1999 over 14,000 people individually wrote to the Queensland Government opposing Stage 2 of the Stuart Project. Over 10,000 people made formal submissions as part of the Stage 2 approval process, a record number of objections for any project in Queensland. Eighteen industry and environment groups made a submission to the Queensland Government opposing Stage 2 because of its greenhouse gas emissions. Earlier this year Queensland's environment

groups passed a resolution at their annual conference opposing the Project. Enclosed is a short video with messages to the Suncor board from people who represent some of these organizations.

The Australian Great Barrier Reef is a world icon. Scientists have said that unless effective action is taken to dramatically reduce greenhouse emissions, climate change will cause the destruction of the Great Barrier Reef within the next 30 to 70 years with serious consequences for the tourism and fishing industries that depend on it.[73] Furthermore, Suncor's joint venture partners want to mine oil shale in the World Heritage Area of the Great Barrier Reef. Suncor's reputation is at stake with this Project and every day that Suncor remains involved its reputation will suffer further. By association with its joint venture partners, does Suncor want to be known as the killer of the Great Barrier Reef?

The development of oil shale is incompatible with Suncor's stated desire to be a sustainable energy company. Oil shale is not sustainable. To stop dangerous climate change, such as that which threatens coral reefs, we can only afford to use 25% of existing fossil fuel reserves. This means that fossil fuels have to be phased out and replaced by renewable energy. Whilst Greenpeace views Suncor's interest in renewable energy as a positive step forward, this interest is dwarfed by the oil shale investment. The attempt to develop oil shale is a step in the wrong direction and the company should withdraw from the Stuart Project immediately.

Greenpeace understands that withdrawal from the Stuart Project would have no negative impact on Suncor's balance sheet following September's write down. Greenpeace calls on you to make a decision at next week's Board meeting for Suncor to withdraw from the Stuart Project immediately.

I look forward to hearing from you.

Yours Sincerely
Peter Mullins
CEO
Greenpeace Australia Pacific

(on behalf of Greenpeace Australia Pacific, Greenpeace Canada and Greenpeace International)

Source: Greenpeace website, www.suncore.org. Click on info centre, then briefings and reports, then Greenpeace letter to Suncor Board.

EXHIBIT 20

Front page article in the *Globe & Mail*, leading Canadian national newspaper, December 27, 2000.

Tax breaks proposed for green consumers: Credits only way to fight greenhouse gases, oil companies, environmentalists say

Mark MacKinnon, Globe & Mail, December 27, 2000

OTTAWA -- Two age-old adversaries, oil companies and environmentalists, have banded together to press the federal government to combat global warming and urban smog by offering tax credits to consumers and businesses that use and develop greener sources of power.

Calling itself the Clean Air Renewable Energy (CARE) coalition, the group has written to Finance Minister Paul Martin, pleading with him to introduce two measures it says would create a thriving renewable-energy industry in Canada:

- A consumer tax credit for purchasers of electricity from sources such as wind, sun and biomass fuels.
- A broader investment-tax credit for green power research and development.

The effect, the group contends, would be a reduction in the emissions that cause urban smog and global warming.

The recommendations come from a surprising alliance between some of the country's top environmental lobby groups and some of its worst polluters, just weeks after talks aimed at salvaging a global climate-change accord collapsed in Ottawa.

"We are asking for your personal support and that of your government to . . . invest in the future and kick-start the domestic renewable energy industry," reads the letter, dated Dec. 18 and obtained by The Globe and Mail.

The coalition plans to make its recommendations public this week.

Its members include some of the country's most prominent oil and gas producers -- Suncor Energy, Shell Canada, BP Canada, TransAlta and Westcoast Energy -- and environmental groups such as the Pembina Institute for Appropriate Development, Friends of the Earth, Pollution Probe and the Toronto Environmental Alliance. The Federation of Canadian Municipalities is also involved.

The coalition argues that lack of consumer demand is the primary reason "green" energy products aren't being developed and used as alternatives to fossil fuels.

To create that demand, the group wants Mr. Martin to introduce the consumer tax credit.
The group says the $1.2-billion allotted for climate change and clean-air measures in the February budget and October mini-budget could pay for both that credit and a broadening of the existing tax credit for research. Most of that allotment remains unspent.

The driving force behind the coalition is a fear that Canada is falling behind internationally in the climate-change fight, said Robert Hornung, director of the climate change program at the Pembina Institute, an Alberta-based think tank.

He hopes the fact that environmentalists and energy companies alike can agree on some opening steps -- he calls them "initial measures" -- will propel the federal government to take action.

"The government is always complaining that they're being pulled in different directions. Well, here they're getting a clear signal from a pretty diverse group saying these are steps we can take," Mr. Hornung said.

"It will, frankly, be hard for the government to ignore."

Canada has been widely criticized for stands it has taken since signing the 1997 Kyoto protocol on reducing greenhouse gases.

At a meeting last month of the world's environment ministers in The Hague, Canada aligned itself with countries such as the United States and Japan in fighting for a deal that would require less drastic industrial emissions cuts. Outraged at the position -- and surprised that a onetime environmental champion like Canada would support it -- several European negotiators stormed out of the meeting in disgust.

Canadian officials have claimed that Canada can't move ahead of the United States in taking action to fight global warming, since any emissions caps it imposes in this country would put industry at a competitive disadvantage.

However, multinational energy companies are just as concerned about remaining reliant on fossil fuels while European competitors are receiving incentives to develop wind and solar power technologies that would thrive if a deal to implement the Kyoto protocol is ever reached.

"From the perspective of energy companies, we're starting to see this as an area that does need a bit of a boost," said Gordon Lambert, corporate director for sustainable development at Calgary-based Suncor.

He said the coalition members have come to realize there will be economic benefits, as well as environmental ones, from the development of alternative energy sources.

"We've found, over time, that there can be some common ground found there" with the environmental movement, Mr. Lambert said.

Mr. Hornung said the onus can't be entirely on the energy companies, however.

How consumers spend their energy dollars will ultimately determine whether Canada meets its Kyoto commitment to reduce greenhouse gases to 6 per cent below 1990 levels.

Notably absent from the coalition is Toronto-based Imperial Oil Ltd. Imperial, which owns the Esso chain of gas stations, questions whether so-called greenhouse gases, such as carbon dioxide, lead to global warming.

Endnotes

[1] Rick George, Suncor's 1999 Progress Report on Environment, Health and Safety, and Social Responsibility.

This case was written for the 4th Annual Schulich School of Business MBA Case Competition in Business and Sustainability, February 16-17, 2001. This case was supported by funding from Nestlé Canada and by Ontario Power Generation (formerly Ontario Hydro). The authors acknowledge the generous support and the enthusiastic cooperation of Suncor in preparation of this document. However, the views and opinions expressed in this document are those of the authors.

[2] The two largest oils sands developers in Canada are Suncor and Syncrude, together totaling 80%-90% of oil sands production. Syncrude is the largest oil sands operator with a production of 210,000 BOE/day in 1998. By comparison, Suncor produced about 115,000 BOE/day from oil sands in 1999. Shell has also entered the arena with a new oil sands project in Alberta. Shell will invest $2.4 billion in oil sands and plans to produce 155,000 BOE p/day by the end of 2002. Syncrude has plans to invest $6 billion until 2008 to grow its oil sands operations. By comparison, Suncor's project millennium calls for approximately $2.8 billion investment, which will almost double its oil sands capacity by 2002.

[3] Canadian Association of Petroleum Producers (CAPP), www.capp.ca. CAPP estimates that the oil sands contain a total of 2.5 trillion barrels of oil, of which 300 billion barrels are recoverable using current techniques.

[4] The Canadian Association of Petroleum Producers estimates that as of year end 1997, there were 8.0 billion barrels of remaining established conventional crude oil and 5.6 billion barrels of recoverable oil that was still undiscovered. See www.capp.ca.

[5] Canadian Association of Petroleum Producers, www.capp.ca.

[6] Lorinda R. Rowledge, Russel S. Barton, Kevin S. Brady, *Mapping the Journey: Case Studies in Strategy and Action toward Sustainable Development*, Greenleaf Publishing 1999, p. 72.

[7] Ibid., p.75.

[8] Ibid., p. 75.

[9] See www.vcr-mvr.ca.

[10] 2000 progress report on Environment, Health and Safety, and Corporate Responsibility.

[11] See www.sustainability-index.com.

[12] Energy Information Administration *International Energy Outlook 2000*. www.eia.doe.gov/oiaf/ieo/index.html. See also International Energy Agency, *World Energy Outlook 2000*. IEA/OECD France, 2000, p. 22 for a similar projection.

[13] World Business Council for Sustainable Development, www.wbcsd.ch.

[14] International Energy Agency, *World Energy Outlook 2000*. IEA/OECD France, 2000, p. 21.

[15] International Energy Agency, *Key World Energy Statistics 2000*, IEA/OECD France.

[16] Ibid.

[17] Canadian Association of Petroleum Producers, www.capp.ca.

[18] Ibid.

[19] Ibid.

[20] Ibid.

[21] Natural Resources Canada, *Backgrounder to the Government of Canada's Action Plan 2000 on Climate Change: Canada's North*, www.nrcan.gc.ca/css/imb/hqlib/200079ec.htm.

[22] Environment Canada, November 1999, Canada's Greenhouse Gas Inventory, *1997 Emissions and Removals with Trends,* p. xii.

[23] International Energy Agency, *World Energy Outlook 2000*, OECD, France, p. 26.

[24] Government of Canada *Action Plan 2000 on Climate Change*, p. 7.

[25] Rowledge, Lorinda R., Russel S. Barton, Kevin S. Brady, *Mapping the Journey: Case Studies in Strategy and Action toward Sustainable Development*, Greenleaf Publishing 1999, p. 70.

[26] Ibid., p. 77.

[27] Overall, Suncor is Canada's 15th largest producer of greenhouse gases, of the companies that have reported their emissions to Canada's Voluntary Challenge and Registry Program. Ontario Power Generation is Canada's largest producer of GHG emissions.

[28] Suncor's report to the Voluntary Challenge and Registry program, October 2000, p. 18.

[29] *Improving Viability of Renewable Energy*, Oil and Gas Journal 1999.

[30] BP-Amoco Annual Report. Total assets in 1999 for BP-Amoco: $89,561 million.

[31] See www.bp.com/alive_assets.

[32] Special supplement to the Globe and Mail, Nov. 2000, "Sustainable Energy Development and the Environment," p. 2.

[33] Royal Dutch Shell Annual Report. Total assets of Royal Dutch Shell in 1999: $35,964 million.

[34] See www.syncrude.com (Environment)

[35] Murray Paterson, Manager Green Energy, OPG, personal communication.

[36] Suncor's total assets in 1999 were $ 5.2 billion.

[37] In addition, eight US states have adopted the Renewables Portfolio Standard (RPS). RPS is a system by which an individual state decides to nominate progressive targets for an increasing percentage of its power supply to be satisfied by renewable energy. In turn, electricity suppliers in the respective states are mandated by law to purchase enough green power to satisfy the quota. In several US States (e.g. Iowa, Minnesota and Texas), this has resulted in many wind projects because usually wind energy is the cheapest renewable source available.

[38] See www.greenpowergroup.org

[39] Special supplement to the Globe and Mail, Nov. 2000, "Sustainable Energy Development and the Environment"

[40] Friends of the Earth Canada, *Enhancing the market for green electricity*, March 2000

[41] Ibid. No data exist for the other jurisdictions regarding residential % of green power consumption.

[42] Netherlands Energy Research Foundation, *InTraCert Inception Report-The Role of an Integrated Tradable Green Certificate system in a Liberalizing market*, M.G. Boots, G.J. Schaeffer, C. de Zoeten, December 2000, report number ECN-C-00-085.

[43] See the writings of Amory Lovins for a greater description of the distributed energy supply model.

[44] Suncor's report to the Voluntary Challenge and Registry program, October 2000, p. 23 – 24.

[45] The trade involved Suncor's purchase of 100,000 tonnes of CO2-E (CO2-Equivalent) in the year 2000. Suncor also has an option to buy up to an additional 10 million tonnes of GHG reductions at $ 10 million over a 10-year period starting in 2001. This option depends on official US and Canadian recognition of credits for the reduction.

[46] See www.vcr-mvr.ca.

[47] Suncor's Alternative and Renewables group has valued certified GHG credits at $5 US/tonne. Based upon assumptions of a certain turnover rate and emissions value, the global market for emissions could be a low of $18 billion to a high of

$1.8 trillion dollars in the next 5-10 years. This represents a lot of money to be made and lost, plus a high level of uncertainty.

[48] International Energy Agency, *World Energy Outlook*, p.203, 204. OECD/IEA, 1999

[49] *The Revised 1996 Intergovernmental Panel on Climate Change (IPCC) Guidelines for National Greenhouse Gas Inventories, Reference Manual (Volume 3)*. The Intergovernmental Panel on Climate Change, 1996. This document represents the consensus of one hundred and forty scientists and national experts from more than thirty countries. http://www.ipcc-nggip.iges.or.jp/public/gl/guidelin/ch1ref1.pdf.

[50] *Dams and Development: A New Framework for Decision-Making*. The Report of the World Commission on Dams, November 16 2000, http://www.dams.org.

[51] For coal, greenhouse gas emissions per tonne vary depending on the coal's composition of carbon, hydrogen, sulphur, ash, oxygen, and nitrogen. For petroleum, the carbon intensity per unit of energy is usually less for light refined petroleum products such as gasoline than for heavier products such as heating oil. For natural gas, greenhouse gas emissions depend on the composition of the gas which, in its delivered state, is primarily methane, but can include small quantities of ethane, propane, butane, and heavier hydrocarbons.

[52] 1 terra joule = 10^{12} joules

[53] Adapted from *The Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories, Reference Manual (Volume 3)*, page 1.13.

[54] Total net electricity generation includes thermal, hydro, nuclear, biomass, geothermal, solar and wind electric power generation.

[55] Hydro electricity generation is not included in the alternative and renewable energy figures because only small hydro projects (less than 10MW) are considered to be a renewable energy source, and a distinction for small and large hydro generation was not found. The Pembina Institute refers to " run of river hydro" of less than 20MW and small hydroelectric facilities of less than 30 MW as renewable energy sources (*The Pembina Institute Green Power Guidelines for Canada*, Marlo Raynolds and Andrew Pape, July 2000).

[56] Information on regulatory policies relating to alternative and renewable energy and electricity generation adapted from the U.S. Energy Information Administration, *Issues for Renewable Fuels in Competitive Electricity Markets* http://www.eia.doe.gov/cneaf/electricity/chg_str_fuel/html/chapter5.html

[57] As of March 1998, there were 17 State level green pricing programs in operation, 5 in active development, 7 that were pending formulation based on utility market research, and 4 in the planning stage. A current list of green pricing programs can be found at http://www.eren.doe.gov/greenpower/summary.html. A current list of utilities and power marketers involved in green power programs can be found at http://www.eren.doe.gov/greenpower/marketing.html.

[58] See the Ministry of Economics of The Netherlands website at www.minez.nl.

[59] ECN (Netherlands energy Research Foundation), InTraCert Inception Report ECN-C-00-085, December 2000.

[60] ECN (Netherlands energy Research Foundation), InTraCert Inception Report ECN-C-00-085, December 2000.

[61] British Wind Energy Association, www.bwea.com..

[62] Royal Dutch Shell Annual Report.

[63] Robert Spragins, director of electricity research with the Canadian Energy Research Institute, Global Mail, November 20, 2000.

[64] The Pembina Institute refers to " run of river hydro" of less than 20MW and small hydroelectric facilities of less than 30 MW as renewable energy sources (*The Pembina Institute Green Power Guidelines for Canada*, Marlo Raynolds and Andrew Pape, July 2000).

[65] Special supplement to the Globe and Mail, Nov. 20, 2000, "Sustainable Energy Development and the Environment"

[66] Special supplement to the Globe and Mail, Nov. 20, 2000, "Sustainable Energy Development and the Environment," p.2.

[67] Canadian Wind Energy Association.

[68] American Wind Energy Association, Windpower Monthly Newsmagazine, Nov. 2000.

[69] Special supplement to the Globe and Mail, Nov. 20, 2000, "Sustainable Energy Development and the Environment," p.4.

[70] Presentation by Dr Stephen Grocott, SPP/CPM, 8 February 1999

[71] Range used A$10-A$50 per tonne of CO2 (also used by the Australian Government).

[72] Submission to the Australian Stock Exchange on the carbon liability of the Stuart Project – see page 67; www.greenpeace.org.au/asxreport

[73] Associate Professor Ove Hoegh-Guldberg, University of Sydney, Climate Change, Coral Bleaching and the Future of the World's Coral Reefs, commissioned by Greenpeace, 1999.