



Norske Skog

Norske Skog Canada Ltd.

Submission to the Climate Change Voluntary Challenge and Registry

Submitted to:

*Canada's Climate Change
Voluntary Challenge and Registry Inc.*

and

*Canadian Industry Program on Energy
Conservation (CIPEC)*

June 2001

1 PRESIDENT'S MESSAGE

Norske Skog Canada Ltd. recognizes that the climate change or greenhouse gas issue is an important global environmental issue and that Canada, together with most industrialized nations, has committed to ambitious GHG emission reduction targets. The Company supports the implementation of voluntary, cost-effective actions to reduce emissions and maintain competitiveness. Norske Skog Canada (formerly Fletcher Challenge Canada Ltd.) has demonstrated its support by participating in VCR and CIPEC programs and - more importantly - by becoming more efficient, reducing its energy intensity and lowering its GHG emissions.

As a result of mill modernization, fuel switching and continuous efficiency improvements, Norske Skog Canada's GHG direct emissions (from three B.C. pulp and paper mills) are approximately 30% below our 1990 emission level. Total emissions of CO₂e were 981,400 tonnes in 1990 and 684,600 tonnes in 1999, while production (total tonnes of pulp and paper manufactured at these facilities) rose by 12%.

The majority of the Company's emission reductions resulted from \$ 400 million modernization of the Crofton mill in 1992 and fuel switching from oil to natural gas when a natural gas pipeline was connected to Vancouver Island. Both of these reductions were both 'unique' opportunities. Further emission reductions resulted from energy projects that: (1) increased energy from biomass ("backed out" fossil fuels); and (2) reduced steam demand (energy consumption).

The Company has also achieved emission reductions as a consequence of strategic decisions in its product mix. In our kraft mill operations, our sawdust based pulps make use of waste wood, which would otherwise be burned or landfilled, and in the process offset consumption of sawmill residual chips. Similarly in our paper operations, our migration to lighter weight papers reduces our emissions on a surface area basis and also reduces emissions from the transport of raw materials and finished products to and from our facilities. Our on-going use of recycled de-inked pulp in our paper facilities serves to offset virgin fibre content which is more energy intensive due to required harvesting and processing activities.

Continuous improvements in energy efficiency - both on the generation and usage (demand) sides - are a big focus for Norske Skog Canada as they translate directly into lower operating costs, improved competitiveness and make 'environmental sense'. The Company has set ambitious energy reduction targets and is evaluating its future options for power generation. If Norske Skog Canada continues to move ahead with its aggressive plans, the Company expects its direct emissions to drop by another 177,000 tonnes CO₂e by the end of 2005.

Voluntary, early actions that result in real, measurable and verifiable reductions are an essential part of Canada's climate change efforts. They allow companies, such as Norske Skog Canada, to help reduce the "Kyoto gap", making it easier for Canada to meet its ambitious target. Norske Skog Canada has made substantial, early reductions in GHG emissions that should be appropriately recognized. As such, the Company supports the proposed baseline protection initiative and development of initiatives that acknowledge early action.

Norske Skog Canada intends on continuing to report to VCR and CIPEC programs on its progress in the management of its greenhouse gas emissions.



Russell J. Horner
President and Chief Executive Officer

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3 EXECUTIVE SUMMARY

Norske Skog Canada Ltd.'s Greenhouse Gas Action Plan 2000 presents the Company's greenhouse gas (GHG) emissions from direct and indirect sources for the period 1990 through 1999 and gives a forecast of emissions to 2005. The Company's current emissions are almost 30% below our GHG emissions in 1990. This Plan explains the reasons for this substantial reduction and lists some of the key projects that are expected to contribute to further emission reductions.

Who is Norske Skog Canada Ltd.? Norske Skog Canada Ltd. (previously Fletcher Challenge Canada Ltd.) is a major North American manufacturer of groundwood printing papers and market pulp. As of July 2000, 50.8% of the Company is owned by the international pulp and paper producer Norske Skogindustrier ASA. Norske Skog Canada Ltd. has the capacity to produce some 1.8 million tonnes annually of newsprint, groundwood specialty papers, market pulp and container board at three mills in British Columbia. As the Company does not own any harvesting operations, Norske Skog Canada Ltd.'s entire fibre supply is purchased from independent suppliers, mainly solid wood manufacturers. The majority of the Company's pulp and paper products are sold to customers located in North America, the Pacific Rim and Western Europe.

What are Norske Skog Canada Ltd.'s GHG emissions?

Statistic	Units	1990 (Base Year)	1999	2005 *
Production	tonnes pulp and paper	1,539,170	1,722,740	1,808,835
Total Energy	TJ	56,250	56,550	No total estimate
GHG Emissions				
• direct sources	t CO ₂ e	981,400	684,630	243,535
• indirect sources (purchased power)	t CO ₂ e	46,915	75,620	184,865

* Indirect emissions associated with purchased steam not included.

What are the sources of these emissions? GHG emissions (both direct and indirect) are strongly related to the Company's energy consumption – both the amount and type of energy the Company uses to manufacture its products. Approximately 98% of Norske Skog Canada Ltd.'s direct emissions are derived from the combustion of natural gas and Bunker C (oil) in the power boilers, recovery boilers and lime kilns. Indirect emissions are attributed to Norske Skog Canada Ltd.'s purchases of power and, in the future, steam.

While Norske Skog Canada Ltd. consumes close to 56,000 TJ of total energy each year, we contribute relatively few GHG emissions on an energy basis. That is to say, less than 25% of the Company's total energy supply is from fossil fuels, the majority of the energy supply is derived from CO₂-neutral biomass and hydro-generated electricity.

What are the GHG emission trends? Over the period 1990 through 1999, GHG emissions have dropped by 30%. This substantial reduction of 183,570 t CO₂e is attributed to:

- ✓ Modernization of the Crofton pulp and paper mill (\$ 400 million) in 1992;
- ✓ Fuel switching from Bunker C (oil) to natural gas at Crofton and Elk Falls mills;
- ✓ Fuel switching from fossil fuels to biomass energy at all three mills; and
- ✓ Energy efficiency improvements; i.e. projects that have reduced steam demand at all three mills.

While these initiatives had significant GHG benefits, they were undertaken for a number of reasons. The initiatives made economic sense, improved efficiencies, reduced reliance on fossil fuels, had environmental benefits and improved the Company's competitiveness in the global marketplace.

In which direction are GHG emissions heading? Norske Skog Canada's direct GHG emissions are expected to continue to decline with the implementation of projects that will reduce energy demand (primarily steam consumption) and increase the use of biomass energy (backing out fossil fuels.). The Company's goal is to move into the top quartile of Canadian pulp and paper companies, with respect to energy consumption. To achieve this goal, the Company has ambitious energy (steam) reduction targets for all of its facilities. If these targets are attained, Norske Skog Canada's current (1999) emissions of 684,640 t CO₂e will be reduced by an additional 177,000 t CO₂e. (Note that total production is expected to remain relatively constant for the next 5 years.)

How will these targets be met? Norske Skog Canada's new energy management systems lay the foundation for accurate energy monitoring and evaluation of the effects of process changes on energy consumption and GHG emissions. Work on identifying, designing and implementing new projects that reduce energy and emissions is continuing. Pinch studies (that examine the implications of proposed energy reduction projects on the entire facility's operations) will be completed for Crofton and Elk Falls mills by the end of the year 2000. These studies are expected to generate numerous new opportunities for energy reduction. On the generation side, projects are underway to find ways to improve the efficiencies of the power and recovery boiler systems, and look ahead to future options to produce efficient, clean energy from biomass. As employee participation is a vital part of this process, efforts will be made to continue to communicate the importance of energy efficiency and its environmental benefits to all employees.

Norske Skog Canada will report its progress towards these energy and GHG emission reduction targets to the VCR and CIPEC programs next year.

4 ORGANIZATION PROFILE

Norske Skog Canada Ltd. is a major North American manufacturer of groundwood printing papers and market pulp. For the paper segment of our business, our goal is to be the preferred supplier in the pressroom of our customers; and for our pulp business, we strive to deliver superior, measurable value to our customers. To achieve these goals, Norske Skog Canada is continually working to improve its products, increase its operating efficiencies, drive costs from its businesses and optimize its market presence.

The Company employs approximately 2,000 people of which 1,500 are hourly production employees. For the 2000 fiscal year (year ended June 30, 2000), Norske Skog Canada reported net earnings of \$ 99.4 million (\$ Cdn). In the fall of 1999, the Company set an ambitious target of \$105 per tonne improvement in the profit margin of its paper business that was to be reached by December 2001. In fact, the goal was reached by December of 2000 twelve months ahead of schedule. This focus on cost reduction is essential to remain competitive in an increasingly global industry. *[For more information on the Company's financial performance, please refer to the Fletcher Challenge Canada Ltd.'s Annual Report 2000.]*

Norske Skog Canada has the capacity to produce some 1.8 million tonnes annually of newsprint, groundwood specialty papers, market pulp and container board at three mills in British Columbia: two kraft pulp and paper mills at Crofton and Elk Falls (on Vancouver Island) and a kraft pulp mill in the province's northern interior at Mackenzie.

The Company is the world's largest producer of sawdust pulp. The capacities of the three mills are listed, by product, in Table 1.

Table 1. Norske Skog Canada Capacity by Mill and Product Line (Source: FCCL Annual Report – Fiscal 2000)

Pulp and Paper Mill	Location	Capacity by Product ('000 tonnes as of June 30, 2000)				
		Newsprint	Groundwood Specialties	Market Pulp	Container Board	Total
Crofton	Crofton, B.C.	320	110	330	0	760
Elk Falls	Campbell River, B.C.	345	145	200	105	795
Mackenzie	Mackenzie, B.C.	0	0	230	0	230
TOTAL	Province of B.C.	665	255	760	105	1,785

The principal markets for Norske Skog Canada's products are located in North America, the Pacific Rim and Western Europe.

4.1 Sustainable Fibre Supply

As Norske Skog Canada does not own any harvesting operations, its fibre supply is purchased under secure, long term contracts. All three B.C. mills purchase their wood fibre from independent suppliers,

primarily solid wood manufacturers. In 1999, the fibre supply consisted of sawmill wood chips (62%); pulpwood (13%); sawdust (22%) and recycled deinked pulp (3%).

The Company supports independent third party certification as a valuable tool in the validation of sustainable forest management. As of June 1999, most of the Company's major fibre suppliers had informed the Company of their plans to pursue certification.

Also, a Chain of Custody pilot project was completed at the Elk Falls mill this year. The chain of custody system allows the mill to track and verify certified-fibre sources in the manufacture of its newsprint product line and provide customers with information about the paper's certified-fibre content. Chain of Custody Certification (under the Forest Stewardship Council¹) provides independent, third party validation that the newsprint manufactured at the Elk Falls mill is sourced from forests that meet stringent environmental, social and economic standards. The system must be audited on an annual basis to retain certification.

4.2 Managing Environmental Issues and Minimizing Impacts

Norske Skog Canada's Corporate Environmental Strategic Plan provides the framework to address environmental issues, minimize detrimental impacts and assess the risks of emerging policies and regulations. The three mills report their progress on the Plan's action items to the Corporate Executive on a quarterly basis. The Plan is updated annually and approved by the Environment, Health & Safety Committee of the Board.

Each of the three Norske Skog Canada mills has an Environmental Management System (EMS) in place to address environmental issues in a systematic manner and ensure that its operations are in compliance with environmental regulations. The EMS systems facilitate continuous improvement of each mill's environment performance.

In 1999, each mill's Pulp Operations' EMS was registered to the ISO 14001 standard. The systems use annual internal surveillance audits and bi-annual external compliance audits to ensure that the Company's manufacturing facilities are compliant with all applicable legislation. The audit findings are communicated to management and the Board, so that appropriate action plans can be developed to address any deficiencies. The audits completed during 1998 and 2001 have indicated that the Company's facilities are operating substantially in compliance.

The greenhouse gas issue is considered to be an important, long term environmental issue. It is included as an aspect in the EMS databases of the three mills.

4.3 Changes Since Fletcher Challenge Canada Ltd.'s Last Filing

Like most of Canada's forest products industry, Fletcher Challenge Canada Ltd. (now Norske Skog Canada Ltd.) has been undergoing restructuring to improve its overall competitiveness in the global marketplace. Since the company's last filing with the VCR and CIPEC programs in 1996, the following structural changes have taken place:

- ✓ Organizational separation of Paper and Pulp Operations into two separate business segments (fiscal 1997);
- ✓ Sale of 52% interest in TimberWest Forest Ltd. (fiscal 1997);
- ✓ Sale of 100% interest in Blandin Paper Company (fiscal 1998);

¹ The Forest Stewardship Council is an international, non-government organization dedicated to the establishment and verification of sustainable forest management practices.

- ✓ Norske Skogindustrier ASA² acquisition of 50.8 per cent shareholding formerly held by Fletcher Challenge Ltd. of New Zealand (July 2000); and
- ✓ Company name change to Norske Skog Canada Ltd. (October 2000).

With the sale of interest in TimberWest and Blandin Paper, Norske Skog Canada is no longer involved in harvesting timber or manufacturing lumber.

On the operations side, a nine month strike disrupted operations at all three mills from July 1997 through April 1998. As discussed further in this Plan, some of this unexpected down time was used to improve operating efficiencies at each mill. In 1999, the mills operated without disruption and close to their design capacities. This submission reports on the year 1999, the first full calendar year of operation since 1996.

4.4 Internal Practices for Dealing With Climate Change

Norske Skog Canada's Corporate Environmental Strategic Plan sets out the action items for each environmental issue. The GHG issue is considered to be an important, long-term environmental issue that could become regulated in the future. In previous years, actions under the "GHG issue" heading have included: development of an emissions inventory, identification of emission reduction measures, investigation of opportunities to trade emission reduction credits, etc.

This year, in conjunction with the preparation of its GHG Action Plan 2000, Norske Skog Canada is reevaluating its strategy with respect to the GHG issue. The Company recognizes that climate change policies and, possibly, regulations are under development at national and provincial levels. These initiatives could have significant implications for Norske Skog Canada's operations. As such, the Company is updating its decision-makers with respect to recent policy developments and exploring different strategy options.

As the GHG issue is very much an energy issue for Norske Skog Canada, it follows that the issue is also addressed through the Company's energy management and planning processes. Progress made in reducing the Company's energy consumption, in particular, purchased fossil fuels and power will further reduce the Company's GHG emissions.

The Company's goal is to improve its energy efficiency so that it moves into the "first quartile" group of pulp and paper companies. With respect to energy generation, the Company's goal is to maximize energy from biomass (e.g. hogfuel, black liquor, etc.) and "back out" fossil fuels. Both of these goals provide GHG benefits. The Corporate Energy Council meets monthly to review each mill's energy performance, assess progress with respect to set targets and develop sound action plans.

² Norske Skog is an international pulp and paper producer with a solid reputation as a well-managed company with a strong environmental commitment. For more information, see: www.norskeskog.no

5 GHG EMISSIONS INVENTORY (1990-1999)

5.1 Methodology

The GHG emissions inventory presented in this Action Plan includes the direct and indirect (purchased power) emissions released from Norske Skog Canada's three B.C. pulp and paper mills: Crofton, Elk Falls and Mackenzie. The VCR's "Registration Guide 1999" and Canadian Pulp and Paper Association's "Greenhouse Gas Action Plan Guidelines (1999)" were used as guidance documents in the preparation of the inventory and this plan.

Norske Skog Canada has selected the calendar year "1990" as its base year. The same methodology is used to estimate the Company's GHG emissions starting from the 1990 base year through to the current reporting year of 1999.

The inventory reports the Company's direct GHG emissions (emissions of CO₂, CH₄ and N₂O) from the following sources:

- ✓ stationary combustion of fossil fuels (natural gas, oil);
- ✓ stationary combustion of wood residue (hogfuel) and black liquor;
- ✓ mobile/stationary combustion of fossil fuels (diesel oil, gasoline, propane); and
- ✓ calcination of limestone in the lime kilns.

The majority of Norske Skog Canada's direct emissions are derived from the first category, i.e. stationary combustion of natural gas and oil (Bunker C) in the mills' power boilers, recovery boilers and lime kilns.

The direct emissions are calculated by multiplying the annual consumption of fossil fuel (or wood residue, lime, etc.) by the respective Environment Canada³ GHG emission factors. The same procedure is followed for each of the three gases. CH₄ and N₂O emission factors for the combustion of wood residue in hogfuel power boilers are taken from US EPA⁴. The combustion of wood residue and black liquor are assumed to release no net CO₂ to the atmosphere.

Indirect emissions associated with the electricity purchased by the B.C. mills are separately reported in Norske Skog Canada's GHG emissions inventory. Since BC Hydro is the power supplier for all three mills, BC Hydro's average GHG emission intensity values (reported in its 1999 VCR submission) are used to convert purchased power (in MWh) into the individual GHG emissions.

All GHG emissions are converted into CO₂-equivalent (CO₂e) values by applying the respective 100-yr global warming potentials (GWP) of 1, 21 and 310, to the estimated tonnes of CO₂, CH₄ and N₂O.

5.2 Quantification

For the 1990 base year, Norske Skog Canada's direct GHG emissions were estimated to be 981,400 tonnes CO₂e. Indirect emissions (purchased power) were determined to be 47,000 tonnes CO₂e. Virtually all of the GHG emissions were in the form of CO₂.

Presented in Table 2 are Norske Skog Canada's energy use and GHG emissions, by gas, for 1990. The emissions are reported in two forms, on an absolute basis and per unit of production (tonne of pulp and paper) basis.

Table 2. Norske Skog Canada's Energy Use and GHG Emissions in 1990 Base Year

³ Environment Canada, 1999. Canada's Greenhouse Gas Inventory – 1997 Emissions and Removals with Trends.

⁴ Compilation of Air Pollutant Emission Factors, AP-42, Fifth Edition, Volume I: Stationary Point and Area Sources

Statistic	Units	1990 Value	
Production	Tonnes	1,539,173	
Total Energy	Tera Joules (TJ)	56,253	
	GJ/tonne	37	
GHG emission		Direct	Indirect
CO ₂	Tonnes CO ₂	972,790	46,215
	Tonnes CO ₂ e/tonne	0.63	0.03
CH ₄	Tonnes CO ₂	78.6	1.7
	Tonnes CO ₂ e/tonne	0.05	0.00
N ₂ O	Tonnes CO ₂	22.5	2.1
	Tonnes CO ₂ e/tonne	0.02	0.00
CO ₂ e	Tonnes CO ₂	981,404	46,914
	Tonnes CO ₂ e/tonne	0.64	0.03

* Emissions of CH₄ and N₂O are believed to be slightly underestimated as emission factors are not available for the combustion of black liquor.

On a company wide basis, 98% of Norske Skog Canada's direct CO₂e emissions were derived from the combustion of oil and natural gas in the mills' power boilers, recovery boilers and lime kilns. In 1990, 89% of direct emissions were attributed to the combustion of Bunker C (oil); and 9% to the combustion of natural gas.

On an energy basis, Norske Skog Canada's direct and indirect emissions, together, amounted to 18.3 tonnes CO₂e per TJ of energy consumed in 1990. This value indicates that the Company's energy supply was not very GHG intensive. As shown in Figure 1, nearly 60% of the Company's energy supply was derived from CO₂-neutral biomass sources, i.e. combustion of wood residue (hogfuel) and black liquor. Twenty four percent (24%) of its energy demand was met by fossil fuels and 17% by purchased power. As purchased power was predominantly from hydroelectric generation in 1990, this figure indicates that only one quarter of the Company's total energy supply contributed to the release of GHG emissions.

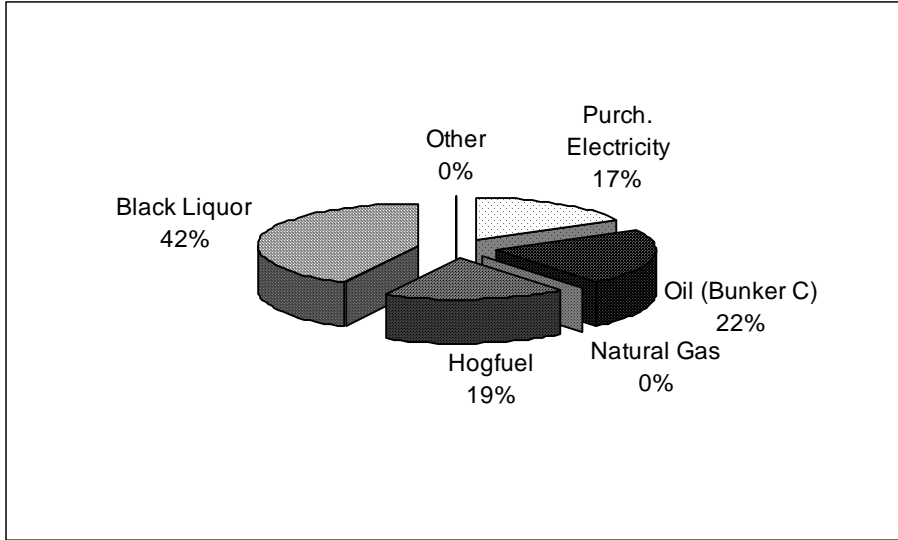


Figure 1. Norske Skog Canada's Energy Supply (GJ/GJ basis) in 1990

The Company's GHG Emissions Inventory for the period of 1990 through 1999 is presented in Appendix A. The tables list the direct and indirect emissions by individual gas for each calendar year. Shown in Figure 2 are the Company's production and (direct) emission trends over time.

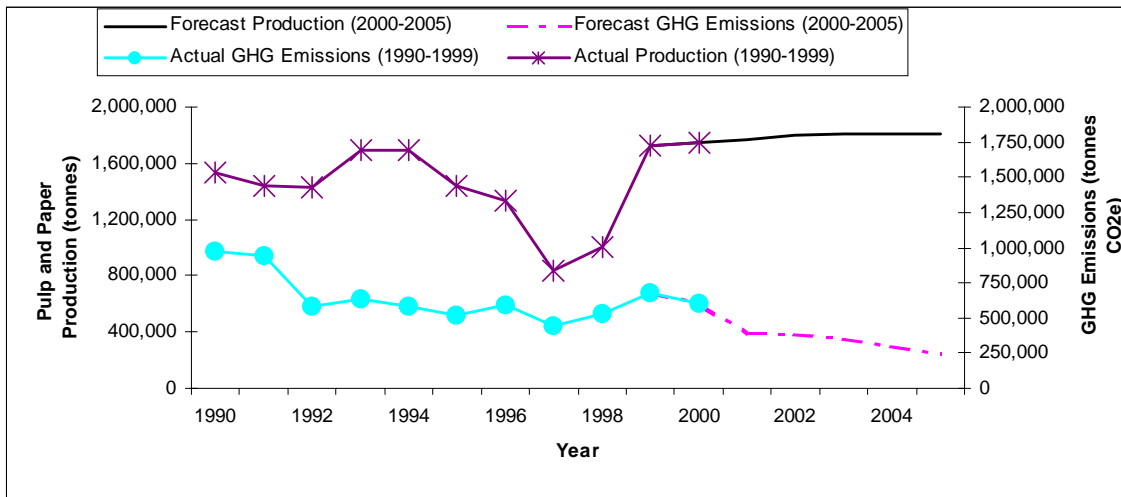


Figure 2. Norske Skog Canada Production and Direct GHG (CO₂e) Emissions (1990-2005)

Production has fluctuated considerably over the last 10 years as a result of capacity upgrades, curtailment and strike interruptions. The drop in 1997 and 1998 reflects the shorter operating periods of 7 months (in 1997) and 8 months (in 1998). The year 1999 represents the first full operating year since 1996.

Overall, direct GHG emissions show a declining trend since 1990. Emission reductions are attributed to: (1) improved energy efficiency and lower energy demand; and (2) switching to less GHG-intensive sources of energy.

Significant energy improvements were made as a result of modernization (Crofton mill) and other capital and non-capital projects (all 3 mills). Norske Skog Canada's energy intensity dropped from 37 GJ/tonne in 1990 to 33 GJ/tonne in 1999. (See Tables in Appendix A.) At the same time, a significant amount of

fuel switching – that is, switching to less GHG-intensive forms of energy – took place. As shown in Table 3, more energy was derived from biomass⁵ and less from fossil fuels; and within fossil fuel category, more energy was derived from natural gas and less from Bunker C (oil).

Table 3. Percentage of Energy by Fuel Type (GJ/GJ basis)

Year	Oil (Bunker C)	Natural Gas	Total Fossil Fuel	Wood Residue (hogfuel)	Black Liquor	Total Biomass	Purchased Electricity
1990	21	3	24	18	41	59	17
1992	7	12	19	17	46	63	17
1996	6	14	20	19	45	64	16
1999	5	16	21	19	44	63	15

Both types of fuel switching reduced the GHG intensity of the Company's energy supply, and consequently contributed to lowering its GHG emissions. On an energy basis, Norske Skog Canada's direct and indirect emissions, together, amounted to 13.4 tonnes CO₂e per TJ of energy consumed in 1999. This translates into a decline of almost 4 tonnes CO₂e/TJ from 1990.

The conversion of boilers and kilns from oil to natural gas shifted the primary emissions source from oil combustion (in 1990) to natural gas combustion. In 1999, 64% of the Company's total direct emissions resulted from combustion of natural gas and 33% were attributed to the combustion of Bunker C (oil).

As shown in Figure 3, indirect emissions (from purchased power) varied over the 1990 to 1999 period. This is mainly because the average emission factor associated with power production changed from year to year. Norske Skog Canada's power consumption dropped slightly over this period. However indirect emissions fluctuated depending upon the source of electricity generation, i.e. whether it was a "low or high water" year for the Company's electricity supplier (i.e. BC Hydro).

⁵ The combustion of wood residue and black liquor (biomass) is assumed to release no net CO₂ to the atmosphere.

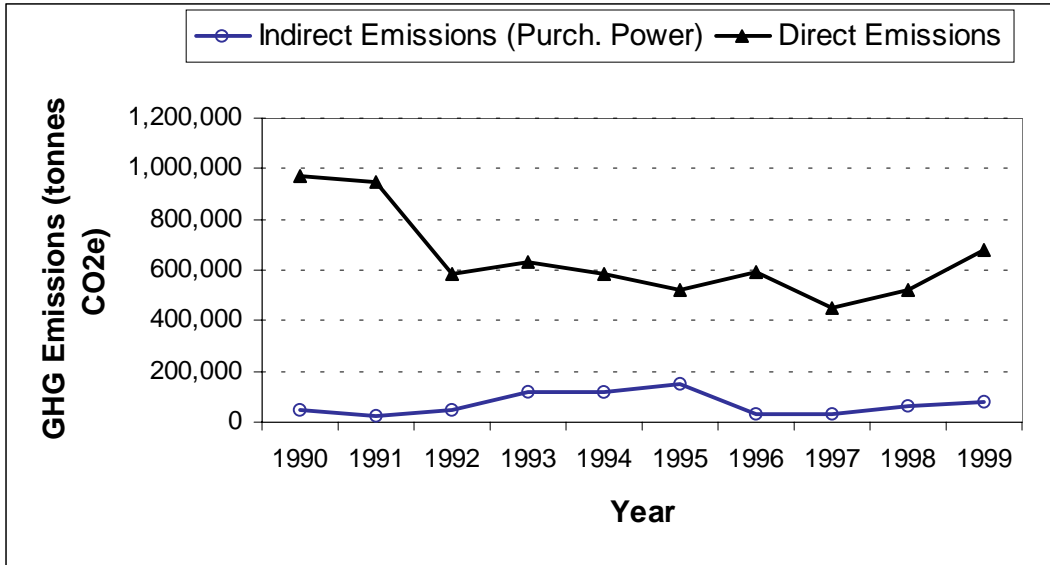


Figure 3. Norske Skog Canada's Direct and Indirect GHG (CO₂e) Emissions (1990-1999)

6 PROJECTIONS (2000 - 2005)

6.1 Methodology

The projected GHG emissions from Norske Skog Canada's operations at Crofton, Elk Falls and Mackenzie mills are presented in this section. They were estimated based on the first five years of Fletcher Challenge Canada's 10 Year Strategic Plan, developed in February 2000. This plan includes the projected (future) consumption of natural gas, oil, wood residue (hogfuel) and purchased power.

The 10 Year forecast assumes that:

- ✓ Planned energy projects (listed later in the report) will be implemented.
- ✓ There will be no change in the energy efficiency of the lime kilns.
- ✓ Power requirements that cannot be met through self-generation will be purchased from BC Hydro.
- ✓ Island Cogen Plant (adjacent to the Elk Falls mill) will start operation in 2001, and should deliver steam to the mill for 9 months in 2001, and 12 months every year thereafter. As a consequence of this project, two power boilers have been permanently shut down at the Elk Falls mill. The Company's direct emissions have decreased but higher indirect emissions have resulted.
- ✓ Apart from the above-mentioned changes at the Elk Falls mill, there will be no other major changes to the Company's structure.

The direct emission estimates for the period 2000 to 2005 were based on the projected demand for natural gas and Bunker C (oil). The forecast consumption of natural gas and oil were converted into emissions of CO₂, CH₄ and N₂O using the respective Environment Canada emission factors. These sources represent 95 to 98% of Norske Skog Canada's total direct emissions⁶.

To project the indirect emissions for the period 2000 to 2005, the future demand for purchased power was multiplied by the BC Hydro emission factor for the corresponding year. These factors were taken from BC Hydro's 1999 VCR submission.

The same calculation methodology was used as described for the GHG Emissions Inventory Methodology. The CO₂, CH₄ and N₂O emissions were converted into CO₂e values by applying the 100-yr GWP values of 1, 21 and 310.

As the 10 year strategic plan was based on FCCL's fiscal year which runs from July 1st to June 30th, the data do not correspond exactly to the calendar year reporting used in the Company's 1990-1999 GHG emissions inventory. This means that there is some overlap between the 1999 calendar year and the year 2000 fiscal year (in the forecast). This error is considered to be small, and is not believed to effect the integrity of the Action Plan. [Note: Norske Skog Canada is in the process of changing its fiscal year end to the calendar year.]

6.2 Quantification

Summarized in Table 4 are Norske Skog Canada's direct and indirect GHG emissions for the years 1990, 1999 and 2005. The GHG emission estimates for the period 1990 to 2005, by individual gas and calendar year, are presented in Appendix A.

Table 4. Norske Skog Canada GHG Emissions in 1990, 1999 and 2005

⁶ Emissions from biomass combustion (CH₄, N₂O only), mobile combustion of fossil fuels and limestone calcination were not included.

Statistic	Units	1990 Value		1999 Value		2005 Value	
Tot. Production	tonnes	1,539,173		1,722,742		1,808,834	
Tot. Energy	Tera Joules (TJ)	56,253		56,544			
	GJ/tonne	37		33			
GHG Emissions by gas type		Direct	Indirect	Direct	Indirect	Direct	Indirect
CO₂	tonnes CO ₂	972,790	46,215	675,714	74,958	242,753	184,325
	tonnes CO ₂ /tonne	0.63	0.03	0.39	0.04	0.13	0.10
CH₄ *	tonnes CH ₄	78.62	1.74	65	2.31	7	5
	kg CH ₄ /tonne	0.051	0.00	0.038	0.00	0.00	0.00
N₂O *	tonnes N ₂ O	22.46	2.14	24.38	1.98	2	1
	kg N ₂ O/tonne	0.015	0.00	0.014	0.001	0.00	0.00
CO₂e	tonnes CO ₂ e	981,404	46,914	684,632	75,619	243,534	184,863
	tonnes CO ₂ e/tonne	0.64	0.03	0.40	0.04	0.13	0.10

The projected emissions for the period 2000 to 2005 are slightly underestimated (i.e. 1-5%) as emissions from biomass combustion, mobile combustion of fossil fuels and limestone calcination were not included in the forecast, and CH₄ and N₂O emission factors are not available for the combustion of black liquor.

CO₂ is again the predominant greenhouse gas. The major sources of Norske Skog Canada's direct emissions are the combustion of natural gas and Bunker C (oil) in the mills' power boilers, recovery boilers and lime kilns. Indirect emissions relate to the emissions associated with the electricity purchased from BC Hydro.

As shown in Figure 2⁷ and in the emission tables of Appendix A, the direct GHG (CO₂e) emissions drop considerably over the 15 year period - from 981,400 (in 1990) to 684,600 (in 1999) to 243,500 (in 2005) tonnes CO₂e. While total production is expected to remain fairly constant from 2000 to 2005, direct GHG emissions are expected to continue to decline as less natural gas and oil is consumed. The projects and activities described later explain how these reductions will be achieved.

It is important to note that the drop in direct emissions shown in 2001 reflects both internal projects and the start-up of Island Cogen Plant (ICP), adjacent to the Elk Falls mill. Gas use at the Elk Falls' mill should drop substantially in conjunction with ICP start-up. The Company recognizes that this is not a real reduction, but an "activity shift" because a portion of Elk Falls' steam production will be transferred to ICP. When ICP has started up, Norske Skog Canada will adjust its GHG emissions baseline accordingly to account for this activity shift.

Presented in Figure 4 are Norske Skog Canada's direct and indirect emissions for the period 1990 to 2005. Indirect emissions (from purchased power) are estimated to be 185,000 t CO₂e in 2005, almost 300% greater than 1990 indirect emissions of 47,000 t CO₂e. This increase is entirely attributed to the change in the average GHG intensity of the purchased power supply. Purchased power demand is projected to be slightly below 1990 demand for the entire period 2000-2010. However, during this time period BC Hydro's new power load is expected to come from combined cycle natural gas turbines, which will significantly increase the average GHG intensity of its power supply.

⁷ Emissions corresponding to the years 1990 through 1999 are considered to be actual emissions, while emissions corresponding to the years 2000 to 2005 are projected emissions.

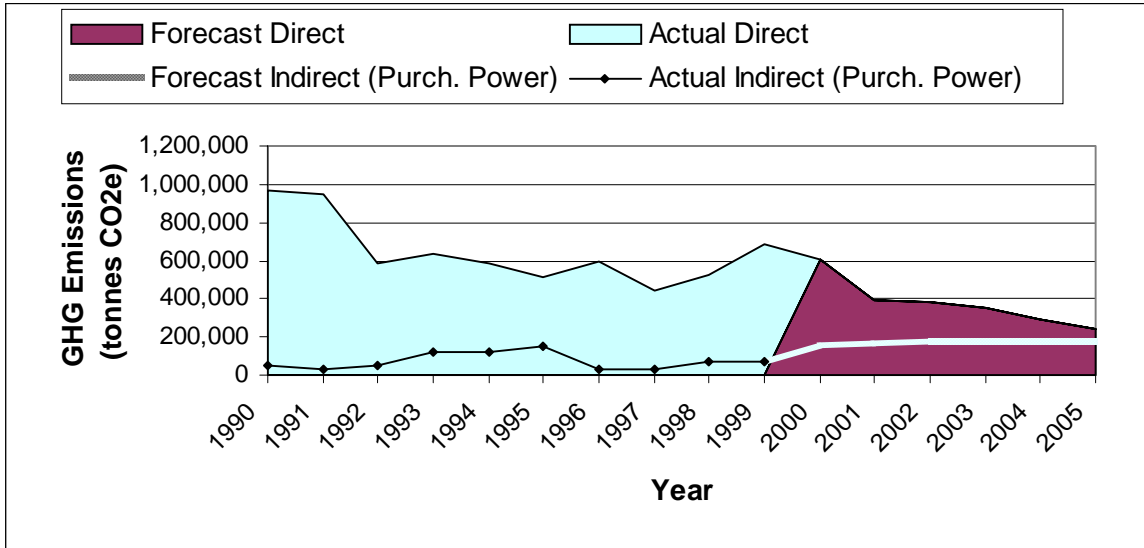


Figure 4. Norske Skog Canada's Direct and Indirect GHG (CO₂e) Emissions (1990-2005)

As stated above, indirect emissions associated with purchased steam (from ICP) will be added once ICP has started up and the necessary data are available.

7 TARGET SETTING

7.1 Targets

Norske Skog Canada has not set corporate-wide GHG emission reduction targets at this time. Due to the strong linkage between energy consumption and GHG emissions, the mills' energy reduction targets also serve as their GHG targets. "GHG performance" is indirectly assessed by monitoring two indicators: steam consumption (GJ) and fossil fuel and biomass used to generate steam.

For many years now, the Company's goal has been to maximize the amount of energy derived from biomass (spent pulping liquor and hogfuel). Natural gas is considered to be the supplemental fuel. As energy demand declines, natural gas is "backed out". So reducing steam usage translates into lower natural gas consumption and associated GHG emissions.

For the period 2000 to 2005, the mills have set the steam reduction targets shown in Table 5. These are ambitious targets designed to help achieve Norske Skog Canada's cost reduction goal and move the company into the "first quartile" of companies with respect to energy efficiency.

If Norske Skog Canada's production levels remain relatively constant (i.e. close to 1999 level), attainment of these steam reduction targets would translate into a GHG emissions reduction of approximately 177,000 t CO₂e by the end of the year 2005.

Table 5. Norske Skog Canada's Energy and GHG Emissions Reduction Targets (2000-2005) - Source: *FCCL 10 Year Strategic Plan (February 2000)*

Year	Crofton	Elk Falls	Mackenzie	Total
Steam Reduction Targets	GJ	GJ	GJ	GJ
2001	869,210	394,510	194,465	1,458,185
2002	0	421,990	197,000	618,990
2003	0	268,880	199,065	467,945
2004	501,740	0	97,015	598,755
2005	503,620	0	97,855	601,475
GHG Emission Reduction Targets	t CO ₂	t CO ₂	t CO ₂	t CO ₂
2001	41,115	18,660	9,200	68,970
2002	0	19,960	9,320	29,280
2003	0	12,720	9,415	22,135
2004	23,730	0	4,590	28,320
2005	23,820	0	4,630	28,450

7.2 Process for Target Review and Update

With improved energy tracking, Norske Skog Canada energy reduction targets and, consequently, GHG emission reduction targets have become more accurate. Targets are regularly reviewed and, if necessary, updated as more is learned about the processes, the equipment and the variables that effect energy consumption.

There are several systems in place, at mill and corporate levels, to track the progress made in achieving the energy reduction targets. For example, energy staff from the Power & Recovery (steam generation) Area at each mill hold daily meetings. Here they discuss power and recovery boiler operations and the key parameters tracked on the operators' daily sheets. On a weekly basis, key performance indicators (KPIs) are reviewed for each area. Steam usage targets are one of several energy-related KPIs.

On a monthly basis, "scorecards" are reviewed for each area of the mill. The achievement of energy targets and action plans are discussed here, and there is opportunity to problem solve, if needed. Finally, quarterly reviews with the Executive are held at each mill. Environmental coordinators participate in these meetings and provide guidance on the GHG implications of energy decisions.

GHG emissions are currently tracked on an annual basis, by mill and for the Company as a whole. Progress towards emission reduction is formally reviewed at least once a year in conjunction with the preparation of Norske Skog Canada's submission to the VCR and CIPEC programs.

8 MEASURES TO ACHIEVE TARGETS (2005)

8.1 List of Key Activities / Projects

Numerous projects and activities launched in 1999 are expected to reduce Norske Skog Canada's energy consumption and GHG emissions, and allow the Company to meet, or exceed, its reduction targets. These projects are being done for a variety of reasons, including environmental reasons. Some are considered "maintenance of business" projects, while others are classified as "profit adding". They include both capital and non-capital projects.

Projects with Energy Savings and Emission Reductions

A listing of the planned projects for the years 2000 through 2002 is provided by facility elsewhere in the report. This list was based on the best information available as of October 2000. (Note: The recent changes in ownership, the Company's capital plan is being reworked and projects are being reassessed. Consequently, changes could be made to this project list.)

In addition to these projects, the Company implemented a significant change to its maintenance systems this year (2000) which is expected to improve the efficiencies of its Pulp Operations. Norske Skog Canada has partnered with ABB Canada to form AllWin Technical Services Inc., a maintenance organization that will provide the three mills with world class technical capability in maintenance practices, systems and training. This initiative is expected to improve energy efficiencies and reduce GHG emissions at each mill.

Projects Under Review

On the energy consumption side, the pinch (energy) studies should be completed for Crofton and Elk Falls' mills by the end of 2000. Projects that make sense from a technical perspective will undergo economic analysis and those that meet Norske Skog Canada criteria will be put forward for approval. The pinch studies could generate two to three years' worth of energy and GHG emission reduction projects.

On the generation side, much work is underway at all three mills to improve the efficiency of the power and recovery boiler systems - the systems that generate steam energy from biomass (hogfuel and spent pulping liquor).

Power (Hogfuel) Boilers - Tighter standards for particulate emissions have restricted operation of the hogfuel power boilers at the mills. This has resulted in increased use of natural gas at the expense of hogfuel. Studies are underway at each mill to find ways to improve the power boiler operation and reduce particulates.

Crofton and Elk Falls' mills are faced with an additional challenge of burning wet hogfuel during the winter months. Several bark presses have been installed at the Elk Falls mill to lower the moisture content of the fuel. The Crofton mill is implementing changes to its hogfuel drying system.

Recovery Boilers - Studies are also underway in the chemical recovery and recovery boiler areas of each mill to increase the net generation of steam. A project is underway at the Mackenzie mill to find ways to improve the efficiencies of its evaporators (e.g. design changes, operator training, etc.)

The Corporate Energy Council is also looking ahead to the future, exploring new options for efficient and clean generation of steam and power.

8.2 Estimated Impact of Activities / Projects

Projects planned for the years 2000 through 2002 that are expected to reduce energy demand and/or GHG emissions are listed below for each mill. The Company intends to report on each project's status, energy savings and emission reductions in the next (2001) submission.

Norske Skog Canada - Crofton

- ✓ Recovery boiler: Repairs on evaporator effect
- ✓ Kraft mill: Improved Kamyrdigester extraction
- ✓ Power boiler: Changes to emissions control equipment
- ✓ General: Online energy management system
- ✓ Kraft mill: Improved pressure washer operation
- ✓ Kraft mill: Mechanical seals for brownstock pumps
- ✓ Recovery boiler: Preheating of combustion air
- ✓ Kraft mill: Improvements to kraft machine

Norske Skog Canada - Elk Falls

- ✓ Recovery boiler: Install heat exchanger
- ✓ Recovery boiler: Add instrumentation that allows steam generation to be maximized
- ✓ Power boiler: Install 4th hogfuel (bark) press
- ✓ Power boiler: Retrofit existing scrubber with new nozzles (lowers emissions)
- ✓ Kraft mill: Raise temperature setpoints of batch digester condensers
- ✓ Kraft mill: Reduced water consumption for brownstock washing (increased concentration of weak black liquor)
- ✓ Chemical recovery: Optimize lime kiln operation
- ✓ General: Insulation projects
- ✓ Repair leaking steam coils on pulp dryer
- ✓ Power boiler: Install wet electrostatic precipitator to No.5 power boiler

Norske Skog Canada - Mackenzie

- ✓ Chemical recovery: Improve efficiency of evaporator system
- ✓ Power boiler: Install natural gas package boiler
- ✓ Power boiler: Upgrade grate, air and gas systems

9 RESULTS ACHIEVED (1990-1999)

The major projects and activities that resulted in Fletcher Challenge Canada's energy and emission reductions in the current (1999) and previous (1990-1998) reporting years are summarized here.

9.1 Current Reporting Year (Calendar 1999)

A Company "refocus on energy" took place in 1999. Early in the year, the Corporate Energy Council was formed to guide the Company's energy initiatives. Council members include the Company's Vice President - Supply and Utilities, the Power and Recovery Area (steam generation) Leads from each mill and Paper Operations' energy managers. Throughout 1999, the importance of higher energy efficiency and lower energy costs was communicated to all employees.

The key projects/initiatives undertaken in 1999 include:

1. Follow-through on OPSIM (OperationS IMprovement)

Many of the operational improvements, identified in the previous two years, were followed through on in 1999. For example:

- ✓ Small, non-capital projects were implemented.
- ✓ Elk Falls hired BC Hydro's Energy Coach (July – December 1999)
- ✓ The Energy Coach visited the Elk Falls mill and prepared a list of potential energy savings projects. Three types of projects were identified: (1) small items (that were implemented right away); (2) insulation projects (scheduled for the year 2000); and (3) larger, capital projects.
- ✓ The Elk Falls mill attributes a 1 GJ/tonne reduction in steam usage to increased awareness of energy, and the implementation of small measures.
- ✓ Further evaluation of larger energy projects. The Crofton and Elk Falls' mills commissioned pinch (energy) studies that should be completed by the end of 2000. These studies will examine the implications of the proposed projects on the entire facility's operations.

2. Online Energy Management Systems

Implementation of more sophisticated online energy management systems was started at the Crofton and Elk Falls' mills in 1999. This project will provide the mills with detailed, real time information on how energy generation and usage affect operating costs. This new energy information is already starting to show its value. For example, operators are better understanding how mill process changes effect energy use. The information is also allowing more realistic energy targets to be set, and lays the groundwork for more detailed GHG emissions tracking.

3. Review of Power Boiler Operation (Mackenzie)

Alstom Power was hired to conduct an engineering study of the hogfuel power boiler at the Mackenzie mill. Hogfuel firing has been curtailed in this boiler because of difficulty meeting particulate emissions standards. This project, due to be completed in the year 2000, will review the status of the boiler and identify what improvements could be made its operation (in particular, its combustion of hogfuel).

4. Specific Energy Reduction Projects

In addition, the following specific energy and emission reduction projects were undertaken in 1999:

Crofton

- ✓ Chemical Recovery: Increased concentration of weak black liquor (Reductions of 0.29 GJ/tonne and 0.014 t CO₂e/tonne)
- ✓ Bleach Plant: Lowered temperature of bleach tower (Reductions of 0.10 GJ/tonne and 0.0047 t CO₂e/tonne)
- ✓ General: Insulation projects (Reductions of 0.06 GJ/tonne and 0.0028 t CO₂e/tonne)

Elk Falls

- ✓ Bleach Plant: Water recirculation projects (reduced demand for hot fresh water)

9.2 Interim Years

The key projects/activities implemented during this period are described in Fletcher Challenge Canada's 1996 Action Plan to the VCR and CIPEC programs. During the 1997- 1998 strike period, the unexpected downtime was used to review mill operations and search for ways to improve operational efficiency when the mills were up and running. This was referred to as the OPSIM (OperationS Improvement) project. Numerous efficiency improvements were identified by OPSIM.

Year	Projects / Activities
1990 –1995	Modernization of Crofton mill (\$ 400 million) Conversion of equipment from oil to natural gas at Crofton and Elk Falls' mills <i>(See previous VCR submission for more details)</i>
1996	Replacement of hogfuel presses (Elk Falls)
1997	OPSIM; Project Planning; Implementation of small measures
1998	OPSIM; Project Planning; Implementation of small measures

9.3 Verification

The GHG emissions cited in this Action Plan, as well as the source data and factors used in the calculations, are documented and verifiable. Most of the data were retrieved from the mills' process and accounting information systems.

During the preparation of this Plan, it was found that the Mackenzie mill' gas meter gave faulty readings for a certain period of time. This led to a review of the mill's historical data for the 1990-1999 period and resulted in small changes in the GHG emissions inventory.

9.4 Offsets

Norske Skog Canada recognizes that some initiatives the Company has undertaken have reduced GHG emissions "outside" of the Company's three pulp and paper operations. They include:

- ✓ Shift from using chips to sawdust in the pulping process. This has improved the yield from harvest, thereby requiring less harvest. *(fewer GHG emissions associated with harvest)*
- ✓ Use of de-inked post-consumer recycled pulp as part of the paper furnish. Recycled pulp, purchased from Newstech Recycling Inc., Coquitlam, B.C., replaces a portion of virgin fibre which is generally

more energy intensive to produce. *(fewer GHG emissions associated with harvest and primary production due to multiple use of the fibre)*

- ✓ Review of the supply chain process has increased the use of marine and rail transportation to transport Norske Skog Canada's products. This has reduced the use of truck transportation which is less energy efficient. *(fewer GHG emissions associated with product transportation)*
- ✓ Consolidation of Norske Skog Canada's inventory of paper and containerboard into fewer locations has reduced handling and the potential for product damage and waste. The Sylvan Distribution Centre, opened in Vancouver, B.C. in June 1999, now handles about 400,000 tonnes per year of paper (almost half of FCCL's paper production). *(fewer GHG emissions associated with product reprocessing)*
- ✓ Closer working relationship with customers has resulted in better paper quality with fewer web breaks and less waste generation. *(fewer GHG emissions associated with reprocessing and waste disposal)*
- ✓ Migration to lighter weight papers reduces our emissions on a surface area basis (and per newspaper basis) and also reduces emissions from the transport of raw materials and finished products to and from our facilities

10 EDUCATION, TRAINING AND AWARENESS

10.1 Our Corporate Response to Climate Change Issue

Norske Skog Canada has participated in two of Canada's voluntary emission reduction programs, VCR and CIPEC initiatives, since 1996. The Company has developed a corporate-wide GHG emissions inventory and regularly updates and improves its inventory. The Company understands that its GHG emissions are strongly connected to its energy consumption, in particular, to its use of fossil fuels and purchased power. Norske Skog Canada is making significant investments and actively taking steps to reduce its energy consumption, lower its energy costs and, at the same time, reduce its GHG emissions and other environmental impacts.

As a member of the Canadian Pulp and Paper Association, Norske Skog Canada is represented by CPPA in the National Climate Change Consultation Process, and in other forums where industry input has been requested. Earlier this year, the Company participated in the government's consultation on the Baseline Protection Initiative. Given the substantial emission reductions that Norske Skog Canada has made since 1990, the Company strongly supports government initiatives that recognize its early actions.

As noted in the Company's Environmental Policy, included in Appendix B:

- ✓ The Company will seek to continually improve its environmental performance.
- ✓ The principle of pollution prevention will be applied to the use of resources and to the generation of by-products.

The statements guide Norske Skog Canada to continually do better and aim to prevent pollution. They apply to all environmental issues, including the GHG issue. Completion of the GHG strategy options project that is currently underway will help the Company to update its position and response to the GHG issue.

10.2 Climate Change and Our Employees

Norske Skog Canada communicates environmental issues, including the climate change or greenhouse gas (GHG) issue, to its employees in a number of ways. For example, the mill environmental coordinators participate in numerous daily and weekly meetings where operating (energy and non-energy related) decisions are being made on a continuous basis. The coordinators can discuss the "GHG implications" of proposed actions with operators, managers and other employees.

Also, each mill publishes a daily employee newsletter that can be used to highlight important issues, including "GHG news". Elk Falls' environment page on the Company's intranet system contains a "GHG folder" which contains an easy-to-follow update on the GHG issue in the year 2000.

These are several ways that the GHG issue is communicated to Norske Skog Canada employees. Over the next year, the environmental coordinators plan to undertake employee communication initiatives on the climate change issue.

10.3 Climate Change and Our External Contacts

Norske Skog Canada responds to all questions the Company receives related to its environmental performance. On a few occasions, customers have asked how many GHG emissions are produced per tonne of pulp or paper, and the Company has provided the customers with this information.

Two projects are underway at Crofton and Elk Falls' mills that will quantify and communicate the GHG attributes of two of Norske Skog Canada's product lines. These projects will develop Environmental

Profile Data Sheets⁸ (EPDS) for Catalyst directory paper (manufactured at Crofton) and Marathon newsprint (produced at Elk Falls). GHG emissions are one of the environmental attributes included in the EPDS profile.

Completion of this work will enable Norske Skog Canada to provide its customers, environmental groups and other interested parties with objective, product-specific information on its “GHG performance”. This information should be available by the end of the year 2000.

10.4 Our Public Education on Climate Change

Until this year, the Company’s Annual Report has served as the main vehicle to discuss its environmental challenges, specific objectives and progress made in achieving these objectives with the broader public. Approximately 12,000 copies are published each September and distributed to shareholders and other members of the investment community, customers, operating communities, governments and employees.

With the change in ownership, the Company’s communication strategy is being redefined at this time. Tentative plans are to include a “GHG page” on Norske Skog Canada’s website. This will provide another way for the Company to communicate its “GHG performance” and position on the issue to a broader, global audience.

At the mill level, both Crofton and Elk Falls mills publish newsletters for the residents of their respective communities. The newsletters provide opportunities for the individual mills to tell their “GHG story”.

⁸ Environmental Profile Data Sheet (EPDS) is a standardized reporting form, prepared and independently audited by a third party, that describes a product’s environmental attributes over its lifecycle.

11 CONTACTS

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12 APPENDIX A. - SUMMARY TABLES OF GHG EMISSIONS

Table A1. Direct GHG Emissions (1990-1999)

	Units	Year									
		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Tot. Production	tonnes (pulp and paper)	1,539,173	1,438,044	1,430,518	1,697,337	1,691,200	1,439,366	1,328,819	839,781	1,005,943	1,722,742
Tot. Energy	TJ/yr	56,253	52,087	50,086	57,249	59,399	51,596	53,156	32,831	38,175	56,544
GHG Emissions											
CO₂	tonnes CO ₂	972,790	945,451	587,455	635,280	584,191	517,683	595,246	447,977	524,195	675,714
	tonnes CO ₂ /tonne	0.63	0.66	0.41	0.37	0.35	0.36	0.45	0.53	0.52	0.39
	% change Total CO ₂ (from 1990)		-3	-40	-35	-40	-47	-39	-54	-46	-31
CH₄	tonnes CH ₄	78.62	76.87	53.78	61.62	60.67	51.83	63	39	45	65
	kg CH ₄ /tonne	0.051	0.053	0.038	0.036	0.036	0.036	0.048	0.047	0.045	0.038
	% change Total CH ₄ (from 1990)		-2	-32	-22	-23	-34	-20	-50	-42	-18
N₂O	tonnes N ₂ O	22.46	22.19	19.37	22.65	22.91	19.92	23.78	14.73	17.26	24.38
	kg N ₂ O/tonne	0.015	0.015	0.014	0.013	0.014	0.014	0.018	0.018	0.017	0.014
	% change Total N ₂ O (from 1990)		-1	-14	1	2	-11	6	-34	-23	9
CO₂e	tonnes CO ₂ e	981,404	953,943	594,588	643,595	592,566	524,946	603,947	453,367	530,499	684,632
	tonnes CO ₂ e/tonne	0.64	0.66	0.42	0.38	0.35	0.36	0.45	0.54	0.53	0.40
	% change Total CO ₂ e (from 1990)		-3	-39	-34	-40	-47	-38	-54	-46	-30

Table A2. Indirect GHG Emissions (1990-1999) – Emissions Related to Purchased Electricity

Statistic	Unit	Year									
		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Total Production	tonnes (pulp and paper)	1,539,173	1,438,044	1,430,518	1,697,337	1,691,200	1,439,366	1,328,819	839,781	1,005,943	1,722,742
GHG Emissions											
CO₂	tonnes CO ₂	46,215	24,947	47,392	119,945	119,156	150,136	32,548	33,377	66,039	74,958
	tonnes CO ₂ /tonne	0.03	0.02	0.03	0.07	0.07	0.10	0.02	0.04	0.07	0.04
	% change Total CO ₂ (from 1990)		-46	3	160	158	225	-30	-28	43	62
CH₄	tonnes CH ₄	1.74	1.11	1.58	3.50	3.47	4.23	1.12	1.03	1.95	2.31
	kg CH ₄ /tonne	0.001	0.001	0.001	0.002	0.002	0.003	0.001	0.001	0.002	0.001
	% change Total CH ₄ (from 1990)		-36	-9	101	99	143	-36	-41	12	33
N₂O	tonnes N ₂ O	2.14	1.68	2.33	3.60	3.56	4.02	2.22	1.61	2.42	1.98
	kg N ₂ O/tonne	0.001	0.001	0.002	0.002	0.002	0.003	0.002	0.002	0.002	0.001
	% change Total N ₂ O (from 1990)		-21	9	68	67	88	4	-25	13	-7
CO₂e	tonnes CO ₂ e	46,914	25,492	48,147	121,134	120,332	151,470	33,260	33,897	66,830	75,619
	tonnes CO ₂ e/tonne	0.03	0.02	0.03	0.07	0.07	0.11	0.03	0.04	0.07	0.04
	% change Total CO ₂ e (from 1990)		-46	3	158	156	223	-29	-28	42	61

Table A3. Direct GHG Emissions (Projected 2000-2005)

Statistic	Units	2000	2001	2002	2003	2004	2005
Total Production	tonnes (pulp and paper)	1,742,746	1,770,070	1,794,969	1,806,146	1,808,381	1,808,834
GHG Emissions by gas type							
CO₂	tonnes CO ₂	598,563	391,336	384,792	348,870	291,599	242,753
	tonnes CO ₂ /tonne	0.34	0.22	0.21	0.19	0.16	0.13
CH₄ *	tonnes CH ₄	17.23	11.12	10.97	10.08	8.62	7.36
	kg CH ₄ /tonne	0.010	0.006	0.006	0.006	0.005	0.004
N₂O *	tonnes N ₂ O	5.43	3.62	3.54	3.15	2.54	2.02
	kg N ₂ O/tonne	0.003	0.002	0.002	0.002	0.001	0.001
CO₂e	tonnes CO ₂ e	600,607	392,692	386,119	350,057	292,566	243,534
	tonnes CO ₂ e/tonne	0.34	0.22	0.22	0.19	0.16	0.13

Table A4. Indirect GHG Emissions (Projected 2000-2005)

Statistic	Units	2000	2001	2002	2003	2004	2005
Total Production	tonnes (pulp and paper)	1,742,746	1,770,070	1,794,969	1,806,146	1,808,381	1,808,834
GHG Emissions by gas type							
CO₂	tonnes CO ₂	165,681	166,111	175,977	184,510	184,515	184,325
	tonnes CO ₂ /tonne	0.10	0.09	0.10	0.10	0.10	0.10
CH₄ *	tonnes CH ₄	4.56	4.53	4.77	4.98	4.98	4.97
	kg CH ₄ /tonne	0.003	0.003	0.003	0.003	0.003	0.003
N₂O *	tonnes N ₂ O	1.32	1.31	1.36	1.40	1.40	1.40
	kg N ₂ O/tonne	0.001	0.001	0.001	0.001	0.001	0.001
CO₂e	tonnes CO ₂ e	166,184	166,612	176,498	185,049	185,052	184,863
	tonnes CO ₂ e/tonne	0.10	0.09	0.10	0.10	0.10	0.10

Note: Emissions Related to Purchased Electricity ONLY; Emissions Related to Purchased Steam not included

13 APPENDIX B - ENVIRONMENTAL POLICY



Norske Skog Canada Ltd.

Environmental Policy

Norske Skog Canada operates three pulp and paper mills in the Province of British Columbia. This policy applies to all Company activities that support the production and marketing of its pulp and paper products.

- ✓ The Company will meet the obligations of all environmental legislation applicable to its operations.
- ✓ The Company will seek to continually improve its environmental performance.
- ✓ The principle of pollution prevention will be applied to the use of resources and to the generation of by-products.
- ✓ Environmental objectives and targets will be part of business planning at all operations and will be reviewed annually by senior management.
- ✓ The Company will monitor its environmental performance and will communicate its record to all stakeholders.
- ✓ The day to day responsibility for environmental performance rests with all employees.

Russell J. Horner

President and Chief Executive Officer
Norske Skog Canada Ltd.