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FPAC Guidance on 2013 GHG Reporting

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This guidance has been prepared to help forest product companies calculate and report their 2013 greenhouse gas (GHG) emissions. The industry has been active in past voluntary reporting initiatives and is well positioned to report in an accurate and credible manner under the mandatory reporting regime.

This guidance supplements the Pulp and Paper GHG Calculation Tools developed by the National Council for Air and Stream Improvement (NCASI) for the International Council of Forest and Paper Associations (ICFPA) and the subsequent Canadian version, recently updated as Version 3.3. This Guidance makes specific reference to this Canadian Version of the ICFPA GHG Tools. Readers are encouraged to use both the tools and this guidance in tandem when preparing to report GHG emissions. This guidance is focused primarily on reporting requirements that may apply to pulp and paper facilities; few wood products facilities will meet the threshold for 2013 reporting. However, for those wood products facilities that do exceed the threshold, NCASI has also developed for ICFPA GHG Calculation Tools for Wood Products Facilities that are available on NCASI's website. Click [here](#) to access these tools online.

NB: Version 3.3 of the Pulp & Paper GHG Calculation Tools (the Canadian interface) is appropriate for estimating and reporting 2013 emissions to the Canadian program. Click [here](#) to access these tools, and the Wood Products GHG Calculation Tools, online.

In this guidance you will find an overview of the mandatory reporting regime, specific guidance on how to use the Calculation Tools to fulfill your reporting obligations, and links for more information.

The federal mandatory reporting requirement was first established with 2004 reporting. The threshold for emissions reporting for 2013 is 50,000 metric tonnes CO₂ equivalents. *All facilities are encouraged to review their emissions to ensure there is no inadvertent non-reporting.*

In addition, no detailed sectoral protocols or guidance have yet been supplied by government on which emissions to report and how to quantify them. In a number of areas, we have sought clarification from the officials responsible for managing this system and reflected their advice in this document. However, until such time as specific guidance is offered by the government, individual reporting facilities may have to use their judgment in certain areas as to which emissions should be reported and how best to quantify them.

NB: This Guidance is focused on the requirements under Section 46 of the *Canadian Environmental Protection Act, 1999*. It is not necessarily consistent with the reporting requirements under Section 71 of the *Canadian Environmental Protection Act, 1999*

This guidance is based on views of members of the FPAC Environment Committee and technical advice from NCASI. It does not cover all aspects of the reporting regime and should not be considered as all encompassing. Readers are encouraged to consult Environment Canada documentation for additional guidance.

Table of Contents

1.	Introduction.....	4
2.	Linkage of Reporting to the Large Final Emitters Process.....	4
3.	Highlights of the 2009 Reporting Requirements.....	5
3.1	Administrative Issues.....	5
3.2	Greenhouse Gases and Definitions.....	6
3.3	Indirect Emissions.....	6
3.4	Reporting Threshold – lowered for 2009.....	6
3.5	Treatment of Biomass Emissions.....	7
3.6	Emissions Sources.....	7
3.7	Public Disclosure and Confidentiality.....	8
3.8	Optional Comments.....	8
4.	GHG Emission Calculating Methodologies.....	8
4.1	Uncertainty.....	9
5.	ICFPA/NCASI GHG Calculation Tools – Canadian Version.....	9
5.1	Multi-facility Use.....	9
5.2	Methane and Nitrous Oxide Emissions Factors.....	9
5.3	Operations Inventory.....	10
5.4	Reporting Threshold.....	10
5.5	Stationary Fuel Combustion.....	10
5.6	Industrial Process Emissions.....	10
5.7	Venting & Flaring and Fugitive Emissions.....	11
5.8	On-Site Transportation Sources.....	11
5.9	Waste and Wastewater Sources.....	11
5.9.1	Landfills.....	11
5.9.2	Anaerobic Wastewater Treatment.....	11
5.9.3	Aerobic Wastewater Treatment.....	12
5.10	Indirect Emissions Associated with Power and Steam Imports...12	
5.11	Direct Emissions Associated with Power and Steam Exports.....13	
6.	Links.....	14

1. Introduction

FPAC is proud of its members' achievements. Collectively, they have reduced GHG emissions from their pulp and paper mills by 31% since 2005 – almost double Canada's Copenhagen commitment of 17% reduction. In fact, some facilities have reduced their emissions to below the reporting threshold.

2013 reporting is a continuation of the first phase of the mandatory reporting regime which started with 2004 reporting. Environment Canada issued a notice on November 2nd, 2013 outlining the **reporting requirements to be in effect for 2013, with a reporting deadline of June 1, 2014**. Reporting in future years will be dependent upon subsequent notices. More details of the 2013 notice are reviewed below.

Data submitted to the federal government will be shared with the Alberta, British Columbia and Ontario governments, thereby avoiding duplicate reporting for facilities operating in those provinces. Facilities in other provinces may have to report separately under any applicable provincial reporting requirements.

2. Linkage of Reporting to broader federal climate regulations

The Pulp and Paper sector has previously been considered a large emitting sector under federal climate policy proposals. These proposals included mandatory GHG reduction targets for a more narrow list of emission sources than what is covered by the mandatory reporting requirements. However, since these broader climate policy proposals have not been promulgated there should be no confusion as to which requirements apply.

3. Highlights of the 2013 Reporting Requirements

The reporting of GHG emissions is formally authorized under Section 46 of the *Canadian Environmental Protection Act, 1999* (CEPA). Environment Canada is the federal department responsible for the reporting regime. However, facility level data are shared with Alberta, British Columbia and Ontario provincial governments as part of the ‘one-window’ reporting system. Moreover, Environment Canada publicly discloses facility level emission information as is the case with National Pollutant Release Inventory (NPRI) data. Facilities can request confidential treatment under Section 52 of CEPA. Environment Canada has confirmed that facility level carbon dioxide emissions from biomass will not be publicly disclosed.

3.1 Administrative Issues

If a report was submitted in previous years for the facility’s emissions, a facility identification (ID) number was assigned to the facility. Reporters should use this same facility ID number for reporting 2013 emissions. Returning reporters will be asked to review, update and correct the pre-populated information. If a report was NOT submitted in previous years, reporters must complete the registration process to obtain a facility ID number.

If the entity that operates a facility (that is subject to reporting) changes during the calendar year, the entity that operates the facility as of December 31, 2013, must report for the entire calendar year.

If operations at a facility are terminated in the calendar year, the last operator of that facility must report for the portion of the calendar year during which the facility was in operation (if the threshold was exceeded).

NB: All facilities (reporting or not) are legally required to keep copies of the information requested, together with any calculations, measurements and other data on which this information is based for a period of three years. This includes information used by the facility to conduct its assessment of whether it meets the reporting threshold or not. This is particularly important to recall for facilities that may have reported in previous years but do not meet the threshold for 2013.

3.2 Greenhouse Gases and Definitions

There are six types of greenhouse gases. Only three are relevant for forest products industry manufacturing facilities under this reporting program – carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). The Canadian program also requires reporting of HFC, PFC and SF₆ emissions “if the facility emits these GHGs.”¹ However, it is unlikely that these GHGs are emitted in significant quantities from forest products industry manufacturing facilities. For a complete listing of each gas and its global warming potential see page 7 of Environment

¹ Reporting of sulphur hexafluoride, hydrofluorocarbon and perfluorocarbon emissions is limited to industrial processes and industry product use only. This excludes emissions from refrigeration and air conditioning equipment.

Canada's *Technical Guidance on Reporting Greenhouse Gas Emissions*. All GHGs must be reported, subject to the reporting threshold (below), except in cases where:

- the emission source or emission type does not occur at the facility; or
- the emissions from a given source are not estimated due to the unavailability of data.

In these cases, the reporter can select the “N/A” box associated with the relevant emission source category and GHG listed.

Similarly, for more information on definitions of terms, such as “facility”, or “biomass”, see Environment Canada's *Technical Guidance on Reporting Greenhouse Gas Emissions*.

3.3 Indirect Emissions

Emissions from electricity or steam purchases are considered indirect emissions and are not to be reported. Only direct emissions are to be reported.

3.4 Reporting Threshold

Not all facilities need to report. **Mandatory reporting is limited to only those facilities that emitted 50,000 tonnes carbon dioxide equivalent (CO₂e) or more in 2013, excluding CO₂ emissions from biomass combustion (see below).** Only some forest products industry manufacturing facilities will exceed this threshold. Therefore, not all facilities will be required to report. All facilities are encouraged to reviewed their emissions versus the reporting threshold. This is particularly important for large wood products facilities. Smaller facilities are less likely to exceed the threshold. It should be noted that the facility definition regards an integrated wood products complex as a single source, and therefore, the reporting threshold might be triggered by large integrated facilities.

If you reported previously it is not automatic that you need to report in 2013. You only need to report if you exceed the reporting threshold in 2013. If you have lowered your emissions to below the reporting threshold there is no legal requirement to inform Environment Canada, although you are welcome to do so if you wish.

NB: *Please refer to the bold note in Section 3.1 for guidance on maintenance of records.*

3.5 Treatment of Biomass Emissions

*It is internationally accepted that biomass is CO₂ neutral. Carbon dioxide emissions from biomass sources are treated separately from other GHG emissions and reported for informational purposes. **DO NOT include CO₂ emissions** from the combustion of biomass when determining whether you exceed the reporting threshold. However, **DO include methane and nitrous oxide emissions** from biomass combustion. Similarly, when reporting estimated emissions, include biomass-related methane and nitrous oxide emissions with other fossil fuel-related emissions. Biomass CO₂ is reported as a separate line item.*

3.7 Emission Sources

There are six categories of emission sources under the reporting regime. Below are descriptions of each category.

Emission Source	Description
Stationary Fuel Combustion	Emissions from fuel combustion in boilers, furnaces, lime kilns, etc. If the operator of a cogeneration unit is different from the operator of the overall facility, a separate report is to be submitted by the operator of the cogeneration unit (if the threshold is reached).
Industrial Process	Emissions from fossil carbonates calcined in lime kiln. Exclude CO ₂ from lime mud (biomass-derived emissions). Emissions of fossil CO ₂ from consumption of carbonates or dolomite in flue gas desulfurization systems.
Venting & Flaring	None identified as relevant to forest products industry facilities.
Fugitive	None identified as relevant to forest products industry facilities.
Waste & Wastewater	Includes emissions from disposal of waste, wastewater treatment. Excludes waste-to-energy conversion, which is to be reported under Stationary Fuel Combustion. Biomass CO ₂ is reported separately as a "Memo Item".
On-Site Transportation	Any direct emissions from machinery used for the on-site transportation of substances, materials or products used in the production process. (This definition was expanded to the current scope in the 2006 reporting year.)

If any significant emissions do not fit within the six categories, they can be included in the comments field of the reporting form.

NB: See Section 5 for further guidance on what sources should be reported.

3.7 Public Disclosure & Confidentiality

Environment Canada publicly discloses facility level data, with the exception of carbon dioxide emissions from biomass. Reporters may wish to consider a communications strategy for the disclosure of the data as you may do for NPRI.

Under Section 52 of CEPA, reporters may request confidentiality of the reported data, or portions thereof. To make such a request, reporters must choose "yes" when asked during the reporting process and follow up with a written request must be submitted with appropriate justification and documentation with the report submission/statement of Certification. For more information see the Links section of this document.

3.8 Optional Comments

The reporting system does allow for inputting comments on a voluntary basis. However, these comments do not appear with the data publicly disclosed – which therefore precludes an avenue to include context to the disclosed data.

4. GHG Emission Calculating Methodologies

Environment Canada is not providing any particular guidance on specific calculation methodologies. Rather, reporters are encouraged to follow a hierarchical approach to reporting. First, where available, reporters should use site-specific measurements (e.g., metered fuel consumption, fuel carbon and energy content, unoxidized carbon in ash, etc.). Second, use emission factors for specific fuels and sources in the absence of actual measurements. This is likely to be the most commonly used method. Lastly, reporters are encouraged to prioritize efforts based on sources of greatest significance. FPAC supports this approach.

FPAC, as part of the International Council of Forest and Paper Associations (ICFPA), is pleased to have sponsored the development of the Pulp and Paper GHG Calculation Tools. The Tools were developed by the National Council for Air and Stream Improvement (NCASI) consistent with IPCC guidelines and have been sanctioned by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD). These tools are now referenced within WRI's globally recognized Greenhouse Gas Protocol, which has become a foundation for governments and non-governmental organizations seeking a rigorous, transparent approach to accounting for greenhouse gas emissions. This broad international acceptance of the Tools has led to very positive feedback from federal officials. In fact, the federal government is assessing the appropriateness of adopting these Tools as the official methodology protocol for the pulp and paper sector for future reporting years.

NCASI has also adapted the Pulp and Paper Calculation Tools to the Canadian context through the development of a Canadian interface² for the Tools that will enhance usability, efficiency, and accuracy for the industry. Similar tools have been built for application to the wood products industry. The Canadian Versions have been updated consistent with the requirements under the 2013 reporting requirement.

FPAC strongly encourages all facilities to use Version 3.3 of the Pulp & Paper GHG Calculation Tools and Wood Products GHG Calculation Tools. This guidance makes specific references to the Tools. ***It is also recommended that facilities refer to the Quick Start Guides for the Canadian Versions of the Tools for more detailed information on how to use the Tools.*** Click [here](#) to access online.

CAUTION: The Canadian interface of the GHG Calculation Tools is more comprehensive than what is necessary for the mandatory reporting requirement. This guidance will assist the reader on what to include and exclude for reporting purposes.

² Formal name – NCASI Spreadsheets for Calculating GHG Emissions from Pulp and Paper Manufacturing Workbook Version 3.3 for the Canadian Large Final Emitters Program.

4.1 Uncertainty

The level of accuracy in estimating GHG emissions is dependent upon the quality of underlying data and validity of emission factors used. For the most significant sources estimation methodologies are well established. However, considerable uncertainty exists in estimating emissions from certain sources (e.g., methane emissions from landfills and wastewater treatment systems) and these challenges are further discussed below as appropriate.

5. ICFPA/NCASI GHG Calculation Tools – Canadian Version

5.1 Multi-facility Use

The Canadian Tools are aligned with Canadian policy requirements and are geared for use at the facility level. The data inputted into the Tools become embedded in the Excel file. Thus, use for more than one facility requires creating multiple copies of the Tools.

5.2 Methane and Nitrous Oxide Emission Factors

The Canadian Version of the Tools includes default emission factors that are appropriate for Canadian context. The default factors are largely derived from CSA³, with the exception of factors for methane, nitrous oxide, and “carbon neutral” CO₂ emissions from biomass combustion. FPAC believes the emission factors for biomass fuels as recommended by CSA and Environment Canada are incorrect. Additionally, the Canadian Version of the Tools includes industry-specific emission factors for methane and nitrous oxide emissions from kraft mill lime kilns, which are inherently different from lime kilns operated by other industrial sectors. *FPAC recommends using the emission factors contained in the Canadian Version of the Tools.*

Reporters are encouraged to use site-specific information where available (e.g., facility and fuel-specific emission factors determined from fuel and combustion device measurements). To do so, input a custom emission factor when selecting the emission factor (e.g., Step 3 under the Stationary Combustion tab).

5.3 Operations Inventory

Reporters are encouraged to complete the “Operations Inventory” section of the Canadian Version of the Tools. This will help document your procedures and provide evidence of due diligence.

5.4 Reporting Threshold

Once site-specific data are entered, the Tools indicate whether you have surpassed the reporting threshold, which is 50,000 tonnes of CO₂ equivalents (not including biomass combustion CO₂). Look for the red bold line on the Summary Table.

³ Challenge Registry Guide to Entity & Facility-Based Reporting – Canadian Standards Association (CSA) Climate Change, GHG Registries (formerly VCR Inc.), Version 6.0, October 2009.

5.5 Stationary Fuel Combustion

The calculation of combustion emissions is the most well-understood. The most important sources are power and recovery boilers. Fuel combustion in lime kilns represents a small percentage of total emissions from chemical pulp mills. The major cause for uncertainty is the treatment of biomass emissions. ***DO NOT include CO₂ emissions from the combustion of biomass. However, DO include methane and nitrous oxide emissions from biomass combustion.*** See the section “Treatment of Biomass Emissions” (above) for more information. The Canadian Version of the Tools includes the appropriate emission factors and separate summation of biomass CO₂.

Ensure that biomass fuels are inputted on a dry solids basis. Conversion factors (from wet to dry basis) are not included in the Tools and must be done separately.

5.6 Industrial Process Emissions

Report relevant emissions as appropriate. Includes emissions from fossil carbonates calcined in the lime kiln. This is relevant for those mills purchasing make-up calcium carbonate. Most mills now purchase calcium oxide and release of CO₂ in this circumstance is the responsibility of your supplier. Exclude separate entries for calculations of CO₂ emissions from lime mud calcination, which is a biomass-derived emission (these biogenic CO₂ emissions are calculated and reported separately, based on entered quantities of spent pulping liquor fired in the recovery boiler). The tools provide methods for estimating emissions from lime kilns.

The consumption of limestone/dolomite in flue gas desulfurization (FGD) systems as CO₂ is released during reaction with SO₂. The Tools provide methods for estimating such emissions, although they are expected to be very small at most mills.

5.7 Venting & Flaring, and Fugitive Emissions

Although venting & flaring, and fugitive emissions are generally not relevant for forest products operations, if you have such emissions they must be reported⁴. The Calculation Tools do not cover either emission sources. For more information and estimation methodologies see the WRI/WBCSD GHG Protocol website for the measurement protocol specific to fugitive emissions (see Links section).

5.8 On-Site Transportation Sources

Includes emissions from on-site transportation that are “any direct emissions from machinery used for the on-site transportation of substances, materials or products used in the production process”.

⁴ Starting in the 2006 reporting year, venting & flaring emissions were reclassified separately from other fugitive emissions.

FPAC recommends not reporting on-site transportation emissions. This recommendation is based on two factors: 1) On-site transportation activities at forest products industry manufacturing facilities are generally insignificant to total GHG emissions; and 2) It is our understanding that this requirement is intended to capture emissions from mining equipment and other large mobile sources in other sectors but not emissions from mobile equipment that would typically be in use on site at a wood products or pulp and paper facility.

5.9 Waste and Wastewater Sources

There are three types of ‘waste and wastewater sources’ relevant for pulp and paper mills. Each type is addressed in the following sub-sections.

5.9.1 Landfills

CO₂ emissions from landfills are not to be counted since they are biomass-derived. N₂O is assumed to be negligible. The Canadian Version of the Tools provides three methods for calculating methane emissions, each suited for different past and current land filling activities. According to IPCC Good Practices Guidance and Uncertainty Management in National GHG Inventories, estimation of CH₄ generation from municipal solid waste landfills is associated with uncertainties in the order of $\pm 50\%$ ⁵. Furthermore, since there are even fewer data available on methane generation from forest products industry landfills it is likely that emission estimates from these landfills are even more uncertain than those from municipal landfills. Under the mandatory reporting system, reporters are permitted to not report emissions that cannot be estimated due to an unavailability of data. ***In light of the significant level of uncertainty that exists in estimating methane emissions from landfills, reporters should be cautious of reporting such emissions unless site-specific information provides for a more reliable estimation.***

Exclude off-site landfills. The definition of facility does not include landfills that are off-site and separate from the mill. However, note that a company-owned landfill could be considered a facility (separate from the mill) subject to the rules of the reporting program, though it is unlikely that a stand-alone industry landfill would itself exhibit emissions sufficient to exceed the reporting threshold. The level of uncertainty of estimation described above is also applicable to off-site landfills.

5.9.2 Anaerobic Wastewater Treatment

CO₂ emissions from anaerobic wastewater treatment are not to be counted since they are biomass-derived. N₂O is assumed to be negligible. The Calculation Tools provide a method for estimating methane emissions from this source. According to IPCC Good Practices Guidance and Uncertainty Management in National GHG Inventories estimation of CH₄ generation from

⁵ IPCC Good Practices Guidance and Uncertainty Management in National GHG Inventories (2000), Chapter 5, Section 5.1.1.5, p 5.11

industrial wastewater, the associated uncertainties could be in the order of $\pm 30\%$ ⁶. Under the mandatory reporting system, reporters are permitted to not report emissions that cannot be estimated due to an unavailability of data. ***In light of the significant level of uncertainty that exists in estimating methane emissions from anaerobic wastewater treatment, reporters should be cautious of reporting such emissions unless site-specific information provides for a more reliable estimation.***

5.9.3 Aerobic Wastewater Treatment

The Tools do not cover emissions from aerobic wastewater treatment. Due to lack of data current GHG protocols do not attempt to estimate emissions from aerobic treatment operations. Under the mandatory reporting system, reporters are permitted to not report emissions that cannot be estimated due to an unavailability of data. ***FPAC recommends excluding emissions from aerobic wastewater treatment.***

5.10 Indirect Emissions Associated with Power and Steam Imports

Facilities are not required to report indirect emissions. This section of the Tools is not needed for reporting. However, this section can be useful in estimating the amount of indirect emissions if you wish to use this information for internal purposes. Emission factors for steam purchases are not included in the Tools. Ask your steam supplier for an appropriate factor.

This section, combined with the next section on power exports, can be used to estimate the amount of displaced emissions resulting from less GHG intensive self-generation. For example, a facility with a biomass cogeneration unit can estimate the emissions at a utility generating station associated with the mill's electricity purchases it would otherwise have incurred. Subtracting the direct emissions associated with the self-generation would result in the net displaced emissions, which represents a net benefit to society. Below is an illustrative example.

Source	Emissions (Mt CO ₂ e)
Utility Generation of 1000 GWh	304,000
Subtract - Self-generation of 1000 GWh	5,000
Net Displaced Emissions	<u>299,000</u>

Example communications statement: *“By generating our own X GWh of power we are displacing X kt of GHGs at our local utility site. This may also provide other environmental benefits, such as better air quality.”*

5.11 Direct Emissions Associated with Power and Steam Exports

Netting emissions for power or steam exports is not permitted. Netting is subtracting emissions associated with power or steam exports from total emissions associated with self-generated

⁶ IPCC Good Practices Guidance and Uncertainty Management in National GHG Inventories (2000), Chapter 5, Section 5.2.1.2, p 5.23

power or steam. All emissions (except biomass CO₂) associated with power or steam exports must be reported. ***This section is not needed for the mandatory reporting.***

However, calculating the emissions associated with power and steam exports may provide useful information to individual facilities. As described above, displaced emissions associated with the exported power/steam can be estimated using the tools. Again, this may support communications efforts on sustainable performance.

Example communications statement: *“By generating X GWh of surplus power we are displacing X kt of GHGs at our local utility site. This may also provide other environmental benefits, such as better air quality.”*

6. Links

Canadian Environmental Protection Act	http://laws-lois.justice.gc.ca/eng/acts/C-15.31/index.html
Environment Canada <i>Technical Guidance on Reporting GHG Emissions</i>	http://www.ec.gc.ca/ges-ghg/default.asp?lang=En&n=47B640C5-1
FPAC Website	http://www.fpac.ca/index.php/en/
GHG Reporting Website	http://www.ghgreporting.gc.ca/default.asp?lang=En&n=FA37B3F0-1
IPCC Good Practice Guidance	http://www.ipcc-nggip.iges.or.jp/public/gp/english/
November 2, 2013 Canada Gazette Notice	http://gazette.gc.ca/rp-pr/p1/2013/2013-11-02/html/notice-avis-eng.html#d114
Pulp and Paper Sector GHG Calculation Tools – Canadian Version	http://www.ncasi.org/Programs/Climate-Change/Resources/GHG-Calculation-Tools/Index.aspx
Wood Products Sector GHG Calculation Tools – International Version	http://www.ncasi.org/Programs/Climate-Change/Resources/GHG-Calculation-Tools/Index.aspx
WRI/WBCSD GHG Protocol	http://www.ghgprotocol.org/