



333, rue Franquet, Sainte-Foy (Québec)
Canada G1P 4C7
Tél. : (418) 652-2238
1 800 386-5114
Télec. : (418) 652-2292

www.bnq.qc.ca

Le BNQ est membre du Système
national de normes (SNN).

Le 4 octobre 2007

Madame Christine Lagacé
Lagacé & Legault International Inc.
2015, avenue Victoria, bureau 200
Saint-Lambert (Québec) J4S 1H1

Objet : Royal Mat Inc.
Évaluation sommaire de la version anglaise du rapport de quantification
N/Ref.: 36606-1

Madame,

La présente communication vise à répondre à votre requête d'évaluer sommairement la version anglaise du rapport de quantification de Royal Mat Inc. produite à partir de la version française du 5 juillet 2007. À cet effet, la version traduite et envoyée le 4 octobre 2007 a été revue.

Nous constatons les suivants :

- L'information essentielle à la compréhension semble s'y retrouver et être conforme à la version française du 5 juillet 2007, bien que certaines parties de cette version française aient été résumées, modifiées ou retirées (ex. : le chapitre sur les principes généraux des 3RV et le schéma de procédé);
- La lettre de présentation du rapport en version anglaise, signée par Mme Lagacé, est maintenant adressée au BNQ plutôt qu'à Fondation Carbon Quantum comme dans la version française.

Espérant le tout conforme à vos besoins, nous vous transmettons nos salutations distinguées.

Isabelle Landry, M.Sc.
Responsable des programmes en environnement et en
santé et sécurité au travail

OBJECTIVES, CRITERIA AND LEVEL OF AUDIT ASSURANCE

The main objective of the steps involved in verifying the documentation supporting the greenhouse gas (GHG) assertions of Royal Mat Inc. and those carried out on the premises on December 21, 2006 was to enable the Bureau de Normalisation du Québec (BNQ) to issue, with a reasonable level of assurance, a letter of opinion regarding the GHG reductions presented in the firm's GHG project report dated July 5, 2007.

The verification process was carried out in compliance with the ISO 14064-3: 2006 standard entitled *Specification with guidance for the validation and verification of greenhouse gas assertions*. The verification statement is formally presented in section 6.0. However, any decision regarding the project should take consideration of the document as a whole.

Verification Team

The team conducting the verification consisted of the following:

- Isabelle Landry, auditor responsible for the verification
- Jean-Louis Bertrand, auditor (involved in the revision of the preliminary drafts of the report and the visit of the premises)
- Charles Landry, evaluator

INFORMATION ABOUT THE ORGANIZATION AND THE PROJECT

The project description and the reference case, the types of GHG in question, the sources of GHG emissions and the period covered by the project are all clearly described in the project report. As such, it was deemed unnecessary to reiterate the information here. Nonetheless, the following summary may help clarify the reading of this verification statement.

Project case

Use of end-of-life car and truck tires (recycling) for the manufacturing of new rubber products.

Reference case

According to information provided by Recyc Québec for the purpose of this project, end-of-life tires in Quebec have been routed in one of two ways since the second half of the 1990s, namely toward: 1) energy recovery or 2) recycling, with Royal Mat using the majority of these end-of-life tires. In the years covered by the GHG declaration (2000- 2006), it was reported that, on average, 35% of end-of-life tires in Quebec were sent for energy recovery, while some 65% were recycled. It was, furthermore, assumed that if Royal Mat had not carried out its activities during this period, 35% of its annual consumption of worn tires for the manufacturing of new rubber products would have gone toward energy recovery.

Types of GHG and sources of emissions

The GHG's in question are the following: carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O). The sources of emissions are clearly described in the quantification report; to summarize, they include:

- the handling of tires prior to uptake into the recycling process (diesel and propane consumption);
- the use of power (electricity) in the transformation process (shredding, granulation, cleaning of steel);
- the use of power (natural gas) for the heating of the building and the use of two driers and two presses;
- the procedure itself;
- the handling of the finished products (diesel and propane consumption);
- the handling of process waste (diesel consumption).

Period covered by the project

The years 2000 to 2006.

GHG assertion made by the organization

The GHG assertion was taken from the quantification report dated July 5, 2007.

Concept of relative importance

Relative importance was not established as a fixed value for this project and the uncertainty associated with the activity data and emission coefficients was considered in its entirety.

CONTEXT AND VERIFICATION ACTIVITIES

BNQ was mandated by L₂I - Solutions financières (Lagacé & Legault International) to perform verifications. The firm's project report was therefore submitted to BNQ in a **final version dated July 5, 2007** (following the integration of corrections based on a review of the documentation and the verification of preliminary drafts of the report). A site visit was conducted on December 21, 2006.

Review of documentation and resolution of corrective action requests

A review of the documentation was carried out and transmitted on January 17, 2007. **Responses were provided to eleven corrective action requests (CAR)** and seven clarification requests. The corrective actions proposed to address discrepancies and the responses to the clarification requests were provided in their entirety to BNQ by the quantifier on May 29, 2007, and were consequently evaluated and found satisfactory.

Preparation for the site visit and audit and sampling plan

Prior to the site visit, an audit and sampling plan was forwarded to Royal Mat Inc. This plan included a schedule as well as the elements verified, activities and means of verification.

Preparation of the verification statement

The verification statement was prepared following the document review and site visit, taking into consideration 1) the corrective actions proposed to correct to discrepancies and 2) the project report, modified accordingly and dated July 5, 2007.

EVALUATION OF METHOD USED TO QUANTIFY GHG EMISSIONS ASSOCIATED WITH THE PROJECT

Primary reference

According to information provided by the quantifier, the project report was prepared largely on the basis of ISO 14064-2. However, the objectives of the verification did not involve an assessment of compliance with this standard.

Quantification method, choice of sources and relevant types of GHG emissions

The project team selected a quantification method following a review of generally accepted methods such as those published by the Intergovernmental Panel on Climate Change (IPCC), the Environmental Protection Agency (EPA) and Environment Canada. The method in question is based on waste matter management and comes from a 2006 EPA study entitled *Solid Waste Management and Greenhouse Gases, A Life-Cycle Assessment of Emissions and Sinks*. **This reference is reliable** for the quantification of GHG emissions associated with waste management.

Accordingly, the approach chosen for the quantification of project GHG emissions involves the use of emission factors combined with certain activity data to quantify GHG emissions. In the absence of certain directly observed and measured emissions data, **this method is considered adequate**.

Ultimately, the quantities of project GHG emissions were compared with reference-case emissions for each of the years covered (2000 to 2006) to determine GHG emission reductions. These reductions were presented tCO₂-e. The calculations were submitted to BNQ for verification.

The emission factors associated with energy recovery and tire recycling are also taken from the EPA study. It should be noted that, insofar as the emission factor for tire recycling used in the study is based primarily on tire retreading, the quantifier deemed it appropriate to subtract from the net reductions the estimated GHG emissions for the operation of the plant, based on certain activity-related data. Thus, GHG emissions estimates regarding the use of electricity, natural gas, diesel and propane were calculated and taken into account. Insofar as the emission factor for recycling is generally based on these emissions, we consider **this approach relevant to address the lack of specificity for the emission factor** in question.

The emission sources and types of GHG covered by the report appear to be those most relevant to the project. Where certain emission sources were excluded from the calculations, adequate arguments were provided, and the site visit served to corroborate this information.

Choice of reference case

Simply put, the reference case makes the hypothesis that, based on the given availability of end-of-life tires in the period of 2000 to 2006, 35% of Royal Mat's tire consumption for each year covered would have been directed toward energy recovery and 65% toward recycling by other recyclers (recycling is the project case).

In this context, for the purpose of calculating emissions for the reference case, the decision was made to use emissions resulting from the energy recovery of 35% of Royal Mat's tire consumption for each year covered by the GHG assertion. **This reference case appears to be realistic.**

Company activity data

The primary activity data used for the quantification refers to the weight in tonnes of the shredded tires transformed into rubber products for each year covered by the GHG assertion. This data was submitted to both the quantifier and the BNQ by Royal Mat Inc. The quantities used as inputs for the quantification **seem to reflect the reality**. The same is true of the data on electricity, natural gas and propane consumption. The consumption of diesel fuel is related to transport and was estimated based on the distance covered by the trucks, at a rate of 39.5 L/100 km.

As mentioned above in the section entitled "Quantification method", the choice of relevant emissions sources and types of GHG emissions for this verification statement, the power consumption data and the transport data were used to compensate for the lack of specificity with regard to the emission factor for tire recycling.

Evaluation and consideration of uncertainty

The EPA study in question is considered by the EPA itself as sufficiently precise in its working hypotheses and calculation methods to support the quantification of GHG emissions from projects under the voluntary program framework. It does, however, present certain limitations, specifically because it refers to average power consumption values for US industry, which may not apply to the Canadian context.

Initially, the quantifier suggested the use of emission factors adjusted to the Canadian context. However, the adjusted factors were not used for the final quantification since, following a review of the data underlying the choice of these values, it was considered that these were difficult to validate.

As for the quantification method presented in the study, the EPA considers that the data required for a rigorous statistical treatment of both the uncertainty and viability of the data were unavailable.

Nonetheless, the quantification report presents uncertainty values related to the evaluation of CO₂ emissions for the use of natural gas (+ or - 1%), the collection of the firm's activity data (+ or - 2%) and transportation (+ or - 10%, or 1.6 % of total emissions).

Data quality management and record retention

All activity data are stored on-site at Royal Mat in a structured and secure manner. Some of these data are even verified by Recyc Québec in the context of the recycling program.

VERIFICATION STATEMENT REGARDING THE GHG ASSERTION

With respect to the GHG assertion made by Royal Mat Inc. and the information above, we conclude with a reasonable level of certainty that:

- the information is true, fair and supported, establishing that total emissions for the years 2000 to 2006 amount to approx x 107 035 tCO₂-e, taking associated uncertainty into consideration (see previous section on uncertainty);
- the principles of relevance, completeness, coherence and transparency have been respected;
- the notion of uncertainty is not fully addressed in the report.