



**Submission to the
Ministry for the Environment
on the draft Climate Change
(Stationary Energy and Industrial Processes)
Regulations**

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A BlueScope Steel Company

**Submission to the
Ministry for Environment on
the draft Climate Change
(Stationary Energy and Industrial Processes)
Regulations**

by

**New Zealand Steel Limited
10 December 2008**

Introduction

New Zealand Steel Limited operates a fully integrated steel mill at Glenbrook, South Auckland, producing a large range of steel products for the local and export markets. It is a wholly owned subsidiary of BlueScope Steel Limited of Australia.

New Zealand Steel wishes to represent its submission in discussion with the appropriate authority. Matters relating to the Company's submission should be directed to Mr Paul van Brakel or telephone 09 375 8111 ext 7357.

Company Profile

New Zealand Steel is a subsidiary of an Australian publicly listed company, BlueScope Steel Limited. It produces a range of iron and steel products from raw materials at its single site mill at Glenbrook on the southern shores of the Manukau Harbour. It lies in the Franklin District near the town of Waiuku. It began production in 1968 and major expansions completed in 1987 created an integrated steel mill.

New Zealand Steel produces a range of flat steel products for both domestic and export markets. Slabs are rolled into hot and cold rolled products, which are then on-sold or further-processed into products like hollow sections, galvanised steel, ZINCALUME® steel and COLORSTEEL® steel.

Section 1: Executive Summary

1. New Zealand Steel (NZ Steel) recognises and supports the objectives of the Climate Change Bill. Reducing greenhouse gas (GHG) emissions is an important global issue.
2. New Zealand Steel submits that in consideration of the proposed deferral of the Climate Change ETS law, by the New Zealand Government, further time is provided to resolve the issues manifest in the draft Climate Change (Stationary Energy and Industrial Processes) Regulations 2008, and accompanying explanatory Emissions Trading Bulletin No.8.
3. There are numerous areas in the regulations where requirements have not been specifically detailed and are therefore open to interpretation which could result in non standardised or inadequate reporting and therefore be misleading, and possibly result in dispute. Clarification is sought to resolve these.
4. Owing to the variety of industrial processes in New Zealand, carbon is embedded in a number of product and waste streams. The regulations must recognize and allow for this, and not repudiate this. Therefore an allowance must be provided, within the regulations, for a firm to submit the quantity of embedded carbon which is to be deducted from a firm's inventory providing they can substantiate the quantity of embedded carbon.
5. New Zealand Steel submits that it should be heard in support of this submission.

Section 2: Detailed Submission on the collection of data and information and calculation of emissions

1. Timing

While it is recognised that the intent of these regulations is to capture all carbon used in Stationary Energy and Industrial Processes there is a need to improve the detail in specific areas. This has been particularly noted during the New Zealand Steel's scrutiny of the regulations in particular the regulations pertaining to iron and steel making.

Consequently, as stated in the summary, New Zealand Steel submits further time is provided to resolve the issues manifest in the *Climate Change (Stationary Energy and Industrial Processes) Regulations 2008 (Draft for Consultation)*, and in the accompanying explanatory *Emissions Trading Bulletin Climate Change (Stationary Energy and Industrial Processes) Regulations 2008: draft for consultation No.8 October 2008*

2. Methodology for Emissions Calculation

The *Emissions Trading Bulletin Climate Change (Stationary Energy and Industrial Processes) Regulations 2008: draft for consultation No.8 October 2008*, which was intended to accompany and explain the draft regulations discusses 3 broad methodologies for firm's emissions calculation on p2 column1 Emissions calculation.

New Zealand Steel submits its support for adopting what is referred to in the bulletin as the third way of creating default emission factors, but allow individual participants to apply for unique emission factors specific to their activity.

3. Costs of data collection and the calculation of emissions

The bulletin states officials encourage submission on direct costs of data collection and calculation of emissions.

New Zealand Steel submits that it is in favour of self reporting in the manner it has been doing so under the various voluntary agreements to various government agencies. Ideally, it would recommend that there is no change to the structure of its current reporting, which should maintain its direct costs at the current level.

There has been no evaluation of additional costs.

However, New Zealand Steel is very aware that there may be hidden costs associated with additional work which has not been outlined such as inventory auditing. From experience with auditing its greenhouse gases inventory in 2006 this can be very costly.

4. **Regulation 4 – Fees and Charges**

While Clause 4 outlines the intention to levy charges, the draft of Schedule 1 is incomplete as to the application and magnitude of fees.

NZS submits that the current self reporting to various Government agencies meets the requirements of the proposed regulation and no additional external costs are appropriate.

If the intention is for the Ministry to levy regular or ad hoc charges, NZS reserves the right to make further submissions.

5. **Regulation 7 – Referencing of Emission Factor to Calorific Value**

In regulation 7.1, the term EF is a specific emission factor which is referenced on an energy basis, and not on a mass basis.

While New Zealand Steel currently uses, and has used, this type of specific emission factor in its reporting, and it is understood this may have been adopted, as it used elsewhere internationally, it submits that:

- a) An alternative specific emission factor based on mass could be used, and
- b) if the proposed emission factor based on energy be used then full consideration needs to be given to the errors that may arise when using it.

To use the proposed specific emission factor correctly then the effects of variation to either or both of the carbon content and calorific value on the specific emission factor and how it can influence the total emissions derived should be fully understood.

This is an important issue as mass balances are normally performed in industry to ensure material balances such as for coal, are correct, while checking the calorific value may not be correct, as this is not necessarily straight forward for all industries and is costly.

Whereas, if a specific emission factor based on mass is adopted it is significantly easier, more accurate and less costly to perform emissions calculations. It should also be recognised the energy content is not necessary for determining the carbon emissions, only determining the carbon content is, and which is done on a mass basis.

If this specific emission factor is to be used and it is required to be either checked or re-evaluated then both the carbon content and the calorific value must be re-determined to obtain the correct factor. This is important for a firm which may wish to adopt a unique specific emission factor and for any self checking which may be required as a result of that decision.

Given the issues, New Zealand Steel, therefore, submits that the adoption and use of this specific emission factor for the reporting of emissions under these regulations be discussed in a wider forum to establish, whether depending on the outcome, what guidelines are established for the use of mass or energy based emission factors.

6. **Opt in Participants - Regulation 45 : Method of calculating emissions in relation to purchasing coal - measurement of consumption**

In regulation 45.1a, there is a requirement for reporting the amount of coal received. New Zealand steel submits that, as the intent of the regulations is to account for the emissions, the amount of coal consumed is a more appropriate measure and should be used.

New Zealand Steel has voluntarily reported data for coal on this basis, to various government agencies, since the mid 1990's.

7. **Opt in Participants - Regulation 46 : Method of calculating emissions in relation to purchasing coal - emission factor**

In regulation 46.1, the term EF, as referred to in Schedule 2 Table 2 there is a given specific emission factor for sub-bituminous coal as for coals used by New Zealand Steel.

Should New Zealand Steel choose to opt-in as a participant, given that the carbon content varies in coal seams, New Zealand Steel submits that it may review this factor if considered inappropriate, and use a different factor provided supporting evidence is supplied.

8. **Opt in Participants - Regulation 49 :Method of calculating emissions in relation to purchasing natural gas**

In regulation 46.1, the term EF₅, as referred to in Schedule 2 Table 5 provides a specific emission factor for processed natural gas as used by New Zealand Steel.

Should New Zealand Steel choose to opt-in as a participant, given that the carbon content of natural gas is prone to variation, dependant on the blend from the various gas fields, New Zealand Steel submits that it may review this factor if considered inappropriate, and use a different factor provided supporting evidence is supplied.

9. **Regulation 27 : Collection of information for purpose of calculating emissions from producing iron and steel – Consideration of moisture content for material mass information**

In Regulation 27 a) while the number of tonnes of a reducing agent is broadly sufficient, within the clause, if the material has a certain moisture content then this needs to be considered, otherwise it should be stated that it is dry, and dry tonnes deducting the moisture content are used.

The information, for example, New Zealand Steel has voluntarily reported for coal to various government agencies is, and has been, based on a standardised moisture content. New Zealand Steel submits a recommendation that this is continued for the sake of historical continuity. If required this can be easily converted to that of a dry basis.

10. **Regulation 27 : Collection of information for purpose of calculating emissions from producing iron and steel – Consideration of methodology for carbon content determination**

In Regulation 27 b) there is a requirement for reporting the carbon content of each type of reducing agent.

As carbon can be reported for coal, for example on a fixed or total basis, while it may be inferred for the sake of reporting that it is required on a total basis it should be considered to state this to avoid any misreporting, and in addition include the acceptable methodology for determining the carbon content.

This would provide clarity if for example the factors are not provided in schedule 3 table 1 or if a re-determination is required,

11. **Regulation 27 : Collection of information for purpose of calculating emissions from producing iron and steel – Frequency for carbon content determination**

In Regulation 27 b) there is no recommended frequency for the testing of any variability in carbon content for reporting should there be a requirement. It is inferred that this may be annually, however if a factor is adopted from schedule 3 then it may be interpreted that no re-evaluation may be necessary.

12. **Regulation 27 : Collection of information for purpose of calculating emissions from producing iron and steel – emission factor for reducing agents**

In Regulation 27b) there is a recommended emission factor, as referred to in schedule 3 table for reducing agents of 3.67 tCO₂ e/t.

New Zealand Steel has used 3.43 tCO₂ e/t. for carbon electrodes which has been agreed upon historically with the various agencies of the New Zealand government, up to as recently as 2005 with the Ministry for Environment –see Appendix 1. New Zealand Steel submits for the continuation of being able to use this factor unless sufficient reason is provided to do otherwise.

13. **Regulation 27 : Collection of information for purpose of calculating emissions from producing iron and steel – carbon content of iron sand**

In Regulation 27 e) there is a requirement for reporting the total amount of iron sand used. New Zealand Steel submits that this requirement be removed from the regulations as iron sand does not contain carbon and therefore is irrelevant for any carbon accounting inventory.

14. Regulation 27 : Collection of information for purpose of calculating emissions from producing iron and steel – emission factor for Dolomite

In Schedule 3 Table 1 the emission factor for dolomite is 0.48 tCO₂ /t. There is no carbon in dolomite used by New Zealand Steel as it is “dead burnt”, hence it is purely MgO. New Zealand Steel, therefore, submits that this factor is not applicable to its use of dolomite.

15. Allowance for the deduction of embedded carbon in products and waste streams from the emissions inventory

Owing to the variety of industrial processes in New Zealand, carbon is embedded in a number of product and waste streams. The regulations must recognize and allow for this, and not repudiate this. Therefore an allowance must be provided, within the regulations, for a firm to submit the quantity of embedded carbon which is to be deducted from a firm’s inventory providing they can substantiate the quantity of embedded carbon.

An example of this is, at the end of the iron and steelmaking process the steel has had all carbon removed from it excepting for, on average, 0.015% carbon. This is the residual level of carbon prior to any alloying process and is embedded in the steel, and not lost in any downstream processes unless recycled in a secondary steelmaking process such as an electric arc furnace operation which New Zealand Steel does not use.

This is also applicable to other products and waste streams.

New Zealand Steel, therefore, submits that as all carbon inputs in the upstream iron and steelmaking processes have been included and accounted for, that any embedded carbon in any of its waste or products, which can be substantiated, may be deducted from New Zealand Steel’s inventory should it choose to do so.

16. Exclusion of reporting of carbon used in steel alloying from any regulatory requirements

In Regulation 27 i) there is a requirement for reporting the carbon content of each type of carbon input.

Carbon associated with steel alloying, which is carbon added to steel to achieve the final chemistry specific to the mechanical properties required of the steel. The treatment of carbon additions under these regulations is not discussed.

As the carbon added is embedded New Zealand Steel, therefore, submits a recommendation for excluding the reporting of any carbon used in steel alloying.

It should be noted that this has been discussed before with government agencies, and has been excluded in any voluntary reporting scheme, which New Zealand Steel has been a participant in since the mid 1990’s.

17. **Schedule 2 and 3 Supplementary document explaining derivation of emission factors provided.**

Given there is a reference to certain emission factors for Stationary Energy and Industrial Processes and such factors are prone to variation depending on the material, New Zealand Steel submits that there is a requirement for supplementary information be provided by government to support and explain the derivation of all said emission factors such that these can proven back to first principles.

18. **Exclusion of reporting of imported carbon embedded in imported slab**

New Zealand Steel submits that any carbon included in imported steel slab used in our Rolling Mills or downstream processes is excluded from any assessment for any emissions on the premise that any carbon is embedded.

19. **Exclusion of reporting of imported carbon in scrap used in steelmaking process**

New Zealand Steel submits that any scrap material used in our steelmaking process is excluded from any assessment for any emissions on the premise that any carbon included has already been accounted for on the basis that all scrap used at New Zealand Steel is from internal uprisings.

20. **Exclusion of reporting of waste gases used in electricity cogeneration**

New Zealand Steel submits that any carbon included in waste gas, as referred to in the accompanying explanatory Emissions Trading Bulletin No.8, is excluded from any assessment for any emissions on the premise that any carbon included has already been accounted for on the basis of coal consumption from which all the carbon is derived that is used for cogeneration of electricity.

Section 3: Appendices

Appendix 1

Refer to section 6. Specific Emissions Factors and Fuel Mix in the accompanying file to this submission i.e. Methodology_Final Emission Factors .pdf which has been extracted from the document - 051212 New Zealand Steel World's Best Practice Report Methodology.pdf

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