Usually, the CBIT project team develops research reports in a narrative format. The key findings from the reports are translated into the tabular formats proposed by the IPCC.

**Please fill in the piece of the table presented on page 2 based on the text written below.**

Please keep in mind that certain information may be missing from the text. Nonetheless, your objective is to fill all cells of the table.

**I. Title**

Development of national greenhouse gas emission factors of combustion facilities for heat generation facilities in the Republic of Korea (IPCC 2006 Category 1.A.2.a (Energy – Fuel combustion - Manufacturing industries and Construction–Iron and Steel).

**II. Duration**

April 2008 to February 2010 (22 months).

**III. Purpose and Importance of the Study**

UNFCCC recommends national greenhouse gas emission statistics to be created based on the IPCC Guidelines. However, since the basic greenhouse gas emission factors recommended by the IPCC are according to fuel used without considering detailed technology and therefore developing different results from the actual amount of emissions, the IPCC suggested that each country develop and apply its own national greenhouse gas emission factors in the future. And we are trying to ride along international trends by developing our own emission factors with consideration of fuel and combustion technology.

**IV. Main contents of the Study**

In this project, our own greenhouse gas emission factors were developed at the Tier 2 level based on default values and development methods suggested by the IPCC guidelines for manufacturing industries among fuel combustion activities in the energy sector. The developed factors are expected to provide necessary data for estimating greenhouse gas emissions by combustion fuel used in various industrial areas including domestic power plants, and also for establishing strategies for greenhouse gas emissions accordingly. The followings are the main contents of the project.

- Development method for greenhouse gas emission factors to create a national report according to the IPCC guidelines;

- Development of emission factors according to fuel combustion activities by heat facilities of the Iron and Steel industry to create a national report complying with the IPCC guidelines (CH4, N2O);

- Derivation of final results of greenhouse gas emission factors to be registered in the EFDB.

**V. Result of emission factor development**

Although various types of combustion equipment are used in the basic iron and steel industry and casting industry, the representative industrial furnaces are steel rolling heating furnaces, cupolas, and 6 sintering furnaces. <Table 3 > presents the measurements and emission factors developed for the sample group consisting of 9 companies. Measurements of 9 places were obtained indirectly by calculation, while emissions and fuel input for greenhouse gas exhausted from 1 sintering furnace could be measured in real-time, and its emission factors were developed from direct measurements. The emission factors developed for iron and steel rolling furnaces were almost similar, with the mean values of N2O ranging between 0.376 and 0.379 kg/TJ regardless of B-C oil or LNG, whereas CH4 showed small deviations ranging between 0.234 and 0.535 kg/TJ. Cast iron-melting cupola uses cokes that have incomplete combustion conditions, resulting in a relatively high CO emission factor, and relatively high N2O and CH4 emission factors of 2.723kg/TJ and 41.963kg/TJ, respectively. Lastly, direct measurements from the sintering furnace showed relatively high N2O and CH4 emission factors of 2.275kg/TJ and 66.460kg/TJ, respectively.

Please, fill in the table below

|  |  |
| --- | --- |
| **2006 Source/Sink Categories (CODE1,...)** |  |
| **Gases (ID1,ID2,...)** |  |
| **Fuel 2006 (type)** |   |
| **Description** |  |
| **Properties** | **Technologies/Practices** |  |
| **Abatement/Control technologies** |  |
| **Parameters/Conditions** |  |
| **Region/Regional conditions** |  |
| **Value** |  |
| **Unit (ID)** |  |