Appendix 6

About

Title: Benchmarking Tool for Steel Plant **With** EAF (Exclusive Advanced Copy/ Strictly Confidential)
Author: Nippon Steel & Sumikin Research Institute Corporation
Project: CTCN Project
Last Updated: March 12, 2018

Instructions

The intended user of this document is a Steel Plant building manager or energy manager.

There are 3 purposes of this document. This document serves users as a:
1) Energy Data Collection Tool for Steel Plants
2) Benchmarking Comparison Tool for Steel Plants
3) Means of Generating an Annual Plant Report for a Steel Plant to send to ISIT

This document requires the entry of steel plant energy and output data (annual data in Sheet B or monthly data in Sheets 01-12)
This document uses the data to generate a benchmarking comparison analysis and an Annual Plant Report for ISIT
See the Table of Contents below for more information on how to use this document

Table of Contents for this document:

A) Instructions	This sheet (A) provides information and tips for using this document
B) Annual Data Entry	This sheet (B) is used for collecting all the relevant energy consumption and output data of a steel plant in a calendar year This sheet (B) can be filled out manually or automatically (by filling out the individual Monthly Data Entry sheets (Sheets 01-12)) All Input cells are highlighted in blue, for example: **input** Further instructions on entering data in the Annual Data Entry Sheet are visible at the top of Sheet B
C) Benchmarking Results	This sheet (C) automatically provides a graphic comparison of the energy intensity and emissions intensity of your steel plant to the industry averages and industry ranges in Thailand. This sheet (C) will only generate complete benchmarking results when all relevant data has been entered in Sheet B or Sheets 01-12
D) Annual Plant Report	This sheet (D) automatically generates an Annual Plant Report of specific metrics to send to ISIT This sheet (D) will only generate a complete Annual Plant Report when all the relevant data has been entered in Sheet B or Sheets 01-12 There are two ways to send an Annual Plant Report to ISIT: Option 1 (most preferred): Copy sheet D, open a new Excel Workbook file, "paste special" "values and number formats" into a new Excel Workbook, save it, and email it to ISIT Option 2: Print sheet D as a PDF file and email it to ISIT Option 3: Print sheet D as a hard copy and send to ISIT via mail.
Monthly Data Entry Sheets	The following twelve sheets (01-12) are used for collecting all the relevant energy consumption and output data of a steel plant on a monthly basis Filling out total input and output in these sheets (01-12) will automatically calculate the annual figures in Sheet B If the user prefers to manually enter annual data, the user should delete or overwrite the formulas in Sheet B and manually input annual data in Sheet B These sheets also include additional option to record energy cost and facility-by-facility energy consumption data in these sheets. These data are not intended for reporting, and will not be reflected in the Annual Plant Report sheet. Recording of this information is suggested for the purpose of internal improvement by the steel plant. Further instructions on entering data in the Annual Data Entry Sheet are visible at the top of Sheets 01-12 and Sheet B
01 Jan.	This sheet (01) is for collecting all relevant energy consumption and output data of a steel plant in the month of January
02 Feb.	This sheet (02) is for collecting all relevant energy consumption and output data of a steel plant in the month of February
03 Mar.	This sheet (03) is for collecting all relevant energy consumption and output data of a steel plant in the month of March
04 Apr.	This sheet (04) is for collecting all relevant energy consumption and output data of a steel plant in the month of April
05 May.	This sheet (05) is for collecting all relevant energy consumption and output data of a steel plant in the month of May
06 Jun.	This sheet (06) is for collecting all relevant energy consumption and output data of a steel plant in the month of June
07 Jul.	This sheet (07) is for collecting all relevant energy consumption and output data of a steel plant in the month of July
08 Aug.	This sheet (08) is for collecting all relevant energy consumption and output data of a steel plant in the month of August
09 Sep.	This sheet (09) is for collecting all relevant energy consumption and output data of a steel plant in the month of September
10 Oct.	This sheet (10) is for collecting all relevant energy consumption and output data of a steel plant in the month of October
11 Nov.	This sheet (11) is for collecting all relevant energy consumption and output data of a steel plant in the month of November
12 Dec.	This sheet (12) is for collecting all relevant energy consumption and output data of a steel plant in the month of December
Factors	This sheet (Factors) provides a reference for energy consumption and emissions factors

Additional Instructions for Data Entry

Sheet B contains formulas in the cells that automatically sum the data entries in the 12 monthly data entry sheets (Sheets 01-12)

There are two options for entering data in this document:

Option 1: Manually enter annual data in Sheet B

Option 2: Manually enter monthly data in Sheets 01-12, which is automatically summed into annual data in Sheet B

If you choose Option 1, please delete or overwrite the forumulas in the input cells of Sheet B

Note:

1. "Energy consumption for total steel plant"part is based on ISO14404 Calculation Sheet for Steel Plant for EAF and/or RHF/Rolling, etc.
 1-1. "Input" means energy/materials purchased by the steelworks from suppliers.
 1-2. "Output" means energy/material sold to the customers outside of steelworks.
 1-3. "stp" means standard temperature and pressure.
2. "Heat consumption (annual average)" means annual average of energy intensity of RHF, which can be calculated by dividing the total fuel consumption of RHF by the amount of input semi-finished steel. This includes the heat consumption during holding time at mill stoppage and furnace temperature changing time.
3. "Heat consumption at stable operation" means the energy intensity of RHF when RHF is operated under the same conditions for more than two hours. This excludes the heat consumption during holding time at mill stoppage and furnace temperature changing time.

Please fill in blue-colored cells only. Gray/pink-colored cells are automatically calculated.

General information

Year of Assessment	2017
Name of person in charge of this data	*********
phone	***-****-****
E mail	***@*******
Company name	***
Site name	***
Established date	mm/dd/yyyy
Main product	***
Annual EAF production capacity	*** ton-crude steel/y
Actual annual EAF production of crude steel	0 ton-crude steel/y
Annual purchased semi-finished steel products	*** ton/y
Annual RHF production capacity	*** ton- steel*/y (*semi-finished steel such as bloom, billet, slab etc.)
Actual annual production of final steel products	*** ton-product steel/y

Energy consumption for total steel plant

Energy Consumption Source			Unit	Input (purchased)	Output (sold)	Calculation results of energy consumption: Direct (GJ/y)	Upstream (GJ/y)	Credit (GJ/y)	Calculation results of CO_2 emission: Direct ($t\text{-}CO_2/y$)	Upstream ($t\text{-}CO_2/y$)	Credit ($t\text{-}CO_2/y$)
Gas fuel	1	Natural gas	10^3m^3(stp)	0	0	0	-	0	0	-	0
	2	Town gas	10^3m^3(stp)	0	0	0	-	0	0	-	0
Liquid fuel	3	Heavy oil	m^3	0	0	0	-	0	0	-	0
	4	Light oil	m^3	0	0	0	-	0	0	-	0
	5	Kerosene	m^3	0	0	0	-	0	0	-	0
	6	LPG	t	0	0	0	-	0	0	-	0
Solid fuel	7	EAF coal	dry t	0	0	0	-	0	0	-	0
	8	Steam coal	dry t	0	0	0	-	0	0	-	0
	9	Coke	dry t	0	0	0	-	0	0	-	0
	10	Charcoal	dry t	0	0	0	-	0	0	-	0
	11	SR/DR coal		0	0	-	-	-	0	-	0
Auxiliary material	12	Limestone	dry t	0	0	-	-	0	0	-	0
	13	Burnt lime	t	0	0	-	0	0	-	0	0
	14	Crude dolomite	dry t	0	0	-	-	0	0	-	0
	15	Burnt dolomite	t	0	0	-	0	0	-	0	0
	16	EAF graphite electrodes	t	0	0	-	-	0	0	0	0
	17	Nitrogen	10^3m^3(stp)	0	0	-	0	0	-	0	0
	18	Argon	10^3m^3(stp)	0	0	-	0	0	-	0	0
	19	Oxygen	10^3m^3(stp)	0	0	-	0	0	-	0	0
Energy carriers	20	Electricity	MWh	0	0	-	0	0	-	0	0
	21	Steam	t	0	0	-	0	0	-	0	0
Ferrous-containing material	22	Pellets	t	0	0	-	-	-	0	-	-
	23	Hot metal	t	0	0	-	-	-	0	-	0
	24	Cold iron	t	0	0	-	-	-	0	-	0
	25	Gas-based DRI	t	0	0	-	-	-	0	-	0
	26	Coal-based DRI	t	0	0	-	-	-	0	-	0
Alloys	27	Ferro-nickel	t	0	0	-	-	-	0	-	0
	28	Ferro-chromium	t	0	0	-	-	-	0	-	0
	29	Ferro-molybdenum	t	0	0	-	-	-	0	-	0
Product and by-product	30	CO_2 for external use	t	0	0	-	-	-	0	-	0
Others	N	Other emission sources	—	0	0	0	0	0	0	0	0
Sub Total						0	0	0	0	0	0

Total Energy Consumption: GJ/y
Energy Consumption Intensity: GJ/ton-crude

CO_2 Emission: $ton\text{-}CO_2/y$
Intensity: $ton\text{-}CO_2/ton\text{-}crude\ steel$

Unit electricity consumption for EAF/LF

	No.		Unit	Intensity
Electric arc furnace (EAF)	1	Electricity consumption	MWh/ton-crude steel	-
Ladle furnace (LF)	2	Electricity consumption	MWh/ton-crude steel	-
			total	0.00

Energy intensity of RHF

	No.		Unit	Intensity
Reheating furnace for hot rolling (RHF)	1	Heat consumption (annual average)	GJ/ton- steel*	-
	2	Heat consumption at stable operation (cold cha	GJ/ton- steel*	-
	3	Heat consumption at stable operation (hot char	GJ/ton- steel*	-

(*semi-finished steel such as bloom, billet, slab etc.)

Changes in operation and equipment

e.g.) Changing fuel, equipment, operation time, times of scrap charge etc.

Implementation of energy saving technologies/SOP

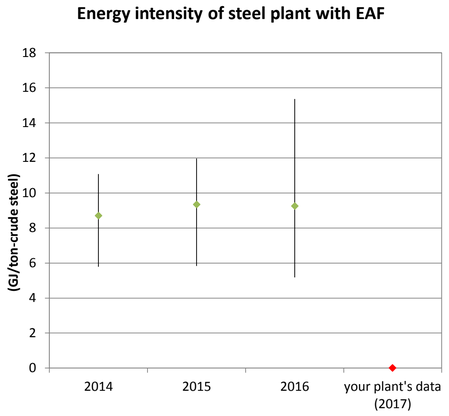
e.g.) Implementation of energy saving technologies such as "High temperature continuous scrap preheating EAF" or SOP such as "Good slag foaming with coherent burner" etc.

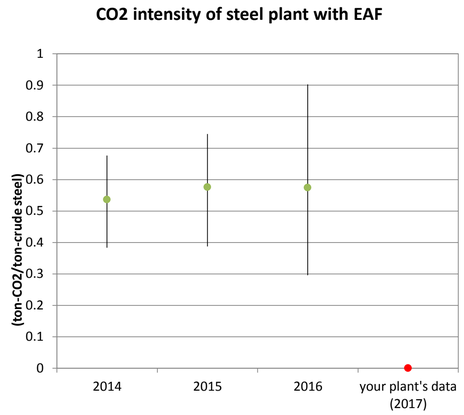
This sheet will only generate complete benchmarking results when all relevant data has been entered in Sheet B or Sheets 01-12
Red points show your plant's data in the graphs. The other color points show the average of Thailand steel industry.

Energy/CO2 intensity of Thailand steel industry (2014-2016)

	unit		2014	2015	2016	your plant's data (2017)
Plant with EAF energy intensity	(GJ/ton-crude steel)	Max	11.075	11.971	15.371	
		Min	5.791	5.826	5.175	
		Average	8.717	9.349	9.259	
Plant with EAF CO2 intensity	(ton-CO2/ton-crude steel)	Max	0.677	0.745	0.903	
		Min	0.383	0.388	0.296	
		Average	0.536	0.576	0.574	
		N =	9	9	9	

	unit		2014	2015	2016	your plant's data (2017)
Plant without EAF (Reroller) energy intensity	(GJ/ton-product steel)	Max	4.883	4.232	4.137	
		Min	1.412	1.471	1.320	
		Average	2.889	2.674	2.206	
Plant without EAF (Reroller) CO2 intensity	(ton-CO2/ton-product steel)	Max	0.336	0.290	0.283	
		Min	0.109	0.113	0.102	
		Average	0.202	0.187	0.155	
		N =	6	6	6	





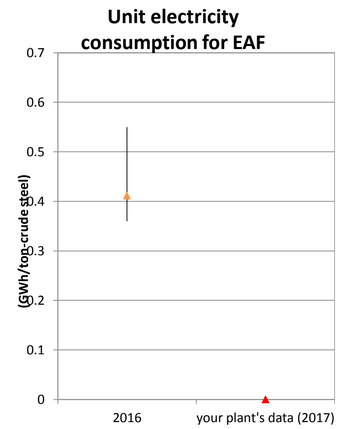
4.883	4.232	4.137
1.412	1.471	1.320
2.889	2.674	2.206

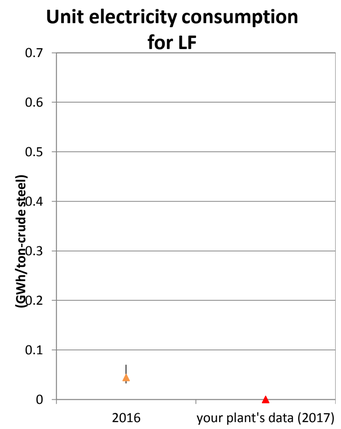
Unit electricity consumption for EAF/LF of Thailand steel industry

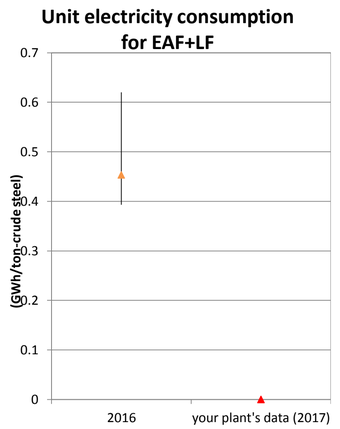
	unit		2014	2015	2016	your plant's data (2017)
EAF	(GWh/ton-crude steel)	Max			0.550	
		Min			0.360	
		Average			0.412	-
		N =			9	

	unit		2014	2015	2016	your plant's data (2017)
LF	(GWh/ton-crude steel)	Max			0.070	
		Min			0.033	
		Average			0.045	-
		N =			8	

	unit		2014	2015	2016	your plant's data (2017)
EAF+LF	(GWh/ton-crude steel)	Max			0.620	
		Min			0.393	
		Average			0.453	0.000
		N =			8	







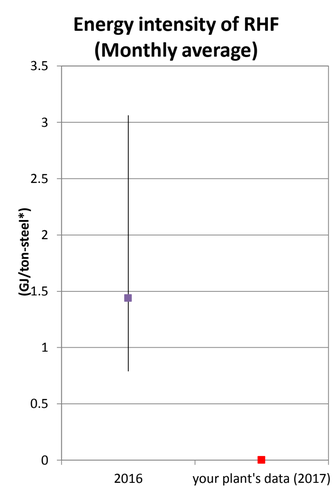
Energy intensity of RHF of Thailand steel industry

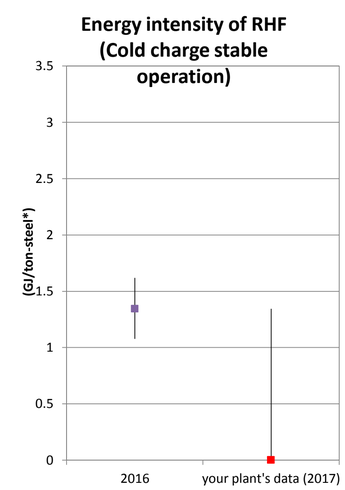
	unit		2014	2015	2016	your plant's data (2017)
Monthly average	(GJ/ton-steel*)	Max			3.063	
		Min			0.790	
		Average			1.439	-
		N =			17	

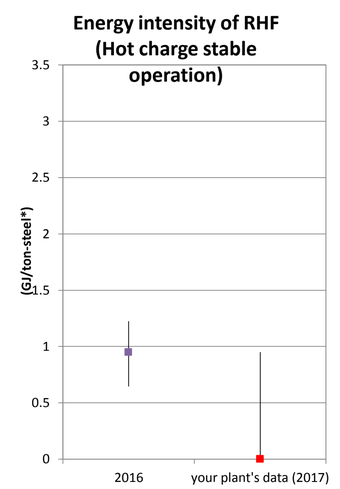
	unit		2014	2015	2016	your plant's data (2017)
Cold charge stable operation	(GJ/ton-steel*)	Max			1.620	
		Min			1.077	
		Average			1.345	-
		N =			16	

	unit		2014	2015	2016	your plant's data (2017)
Hot charge stable operation	(GJ/ton-steel*)	Max			1.225	
		Min			0.646	
		Average			0.950	-
		N =			9	

(*semi - finished steel such as bloom, billet, slab etc.)







Additional Instructions for Sending the Annual Plant Report to ISIT

The Annual Plant Report is automatically generated in Sheet D after all data has been entered in this document either in Sheet B or Sheets 01-12

To protect sensitive or private data elsewhere in the document, do not send the entire document to ISIT

It is only necessary to send the contents of Sheet D to ISIT

To avoid calculation errors or sharing of private data, there are two options for sending the Annual Plant Report to ISIT:

Option 1 (preferred): Copy Sheet D, open a new Excel Workbook file, "paste special" "values and number formats" into the new Exel file, save it, and email it to ISIT

Option 2: Print Sheet D as a PDF file and email it to ISIT

Option 3: Print Sheet D as a hard copy and send to ISIT via mail

General information

Year of Assessment	2017	
Name of person in charge of this data	*********	
phone	***-****-****	
E mail	***@********	
Company name	***	
Site name	***	
Established date	mm/dd/yyyy	
Main product	***	
Annual EAF production capacity	***	ton-crude steel/y
Actual annual EAF production of crude steel	0	ton-crude steel/y
Annual purchased semi-finished steel products	***	ton/y
Annual RHF production capacity	***	ton- steel*/y (*semi-finished steel such as bloom, billet, slab etc.)
Actual annual RHF production of final steel products	***	ton-product steel/y

Energy consumption for total steel plant

						Calculation results of energy consumption			Calculation results of CO_2 emission		
Energy Consumption Source			Unit	Input (purchased)	Output (sold)	Direct	Upstream	Credit	Direct	Upstream	Credit
						GJ/y			t-CO_2/y		
Gas fuel	1	Natural gas	10^3m^3(stp)	0	0	0	-	0	0	-	0
	2	Town gas	10^3m^3(stp)	0	0	0	-	0	0	-	0
Liquid fuel	3	Heavy oil	m^3	0	0	0	-	0	0	-	0
	4	Light oil	m^3	0	0	0	-	0	0	-	0
	5	Kerosene	m^3	0	0	0	-	0	0	-	0
	6	LPG	t	0	0	0	-	0	0	-	0
Solid fuel	7	EAF coal	dry t	0	0	0	-	0	0	-	0
	8	Steam coal	dry t	0	0	0	-	0	0	-	0
	9	Coke	dry t	0	0	0	-	0	0	-	0
	10	Charcoal	dry t	0	0	0	-	0	0	-	0
	11	SR/DR coal		0	0	-	-	-	0	-	0
Auxiliary material	12	Limestone	dry t	0	0	-	-	0	0	-	0
	13	Burnt lime	t	0	0	-	0	0	-	0	0
	14	Crude dolomite	dry t	0	0	-	-	0	0	-	0
	15	Burnt dolomite	t	0	0	-	0	0	-	0	0
	16	EAF graphite electrodes	t	0	0	-	-	0	0	0	0
	17	Nitrogen	10^3m^3(stp)	0	0	-	0	0	-	0	0
	18	Argon	10^3m^3(stp)	0	0	-	0	0	-	0	0
	19	Oxygen	10^3m^3(stp)	0	0	-	0	0	-	0	0
Energy carriers	20	Electricity	MWh	0	0	-	0	0	-	0	0
	21	Steam	t	0	0	-	0	0	-	0	0
Ferrous-containing material	22	Pellets	t	0	0	-	-	-	0	-	-
	23	Hot metal	t	0	0	-	-	-	0	-	0
	24	Cold iron	t	0	0	-	-	-	0	-	0
	25	Gas-based DRI	t	0	0	-	-	-	0	-	0
	26	Coal-based DRI	t	0	0	-	-	-	0	-	0
Alloys	27	Ferro-nickel	t	0	0	-	-	-	0	-	0
	28	Ferro-chromium	t	0	0	-	-	-	0	-	0
	29	Ferro-molybdenum	t	0	0	-	-	-	0	-	0
Product and by-product	30	CO_2 for external use	t	0	0	-	-	-	0	-	0
Others	N	Other emission sources	—	0	0	0	0	0	0	0	0
		Sub Total				0	0	0	0	0	0
					Total Energy Consumption Intensity	GJ/y	GJ/ton-crude		CO_2 Emission Intensity	t-CO_2/y	ton-CO_2/ton-crude steel

Unit electricity consumption for EAF/LF

	No.		Unit	Intensity
Electric arc furnace (EAF)	1	Electricity consumption	MWh/ ton-crude	-
Ladle furnace (LF)	2	Electricity consumption	MWh/ ton-crude	-
			total	0.00

Energy intensity of RHF

	No.		Unit	Intensity
Reheating furnace for hot rolling (RHF)	1	Heat consumption (monthly average)	GJ/ton- steel*	-
	2	Heat consumption at stable operation (cold cha	GJ/ton- steel*	-
	3	Heat consumption at stable operation (hot char	GJ/ton- steel*	-

(*semi-finished steel such as bloom, billet, slab etc.)

Changes in operation and equipment

e.g.) Changing fuel, equipment, operation time, times of scrap charge etc.

Implementation of energy saving technologies/SOP

e.g.) Implementation of energy saving technologies such as "High temperature continuous scrap preheating EAF" or SOP such as "Good slag foaming with coherent burner" etc.

Inputs For Annual Industry Report:

								EAF-based	RHF only		EAF-based	RHF only							
Name	EAF?	EAF capacity tons/yr	EAF production tons/yr	emi - finished proc	HF capacity tons/y	ction of final ste	GJ/y	GJ/ton of steel	-	t-CO2/y	CO2/t of steel	-	EAF MWh/t	LF MWh/t	F+LF MWh/t	HF mo/av	RHF cold	RHF hot	anges in op
***	yes	***	0	***	***	***							-	-	0.00	-	-	-	peration tin

tation of tech/SOP
uous scrap preheating EAF" or SOP such as "Good slag foaming with coherent burner" etc.

Appendix 6

Monthly data entry sheets start from next sheet

Additional Instructions for Data Entry
Sheet B contains formulas in the cells that automatically sum the data entries in the 12 monthly data entry sheets (Sheets 01-12)
There are two options for entering data in this document:
Option 1: Manually enter annual data in Sheet B
Option 2: Manually enter monthly data in Sheets 01-12, which is automatically summed into annual data in Sheet B
If you choose Option 1, please delete or overwrite the forumulas in the input cells of Sheet B

Note: This sheet is based on ISO14404 Calculation Sheet for Steel Plant for EAF and/or RHF/Rolling, etc.
1. "Input" means energy/materials purchased by the steelworks from suppliers.
2. "Output" means energy/material sold to the customers outside of steelworks.
3. "stp" means standard temperature and pressure.

Please fill in blue-colored cells only. Gray/pink-colored cells are automatically calculated.

General information

Name of person in charge of this data	*********	
phone	***-****-****	
E mail	***@*******	
Actual monthly EAF production	***	ton-crude steel/month
Monthly purchased semi-finished steel products	***	ton- steel*/month (*semi-finished steel such as bloom, billet, slab etc.)
Actual monthly production	***	ton-product steel/month

Monthly Data Entry

Energy Consumption Source			Unit	Energy cost	Total		Facility by Facility: EAF		LF		CCM		Ladle heater and ladle transfer		EAF dedusting system		Oxygen plant		RHF		Rolling mill		Cooling water for EAF		Cooling water for CCM		Cooling water for RHF		Others	
				THB/Unit	Input (purchased)	Output (sold)	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output
Gas fuel	1	Natural gas	10^3m^3(stp)																									
	2	Town gas	10^3m^3(stp)																									
Liquid fuel	3	Heavy oil	m^3																									
	4	Light oil	m^3																									
	5	Kerosene	m^3																									
	6	LPG	t																									
Solid fuel	7	EAF coal	dry t																									
	8	Steam coal	dry t																									
	9	Coke	dry t																									
	10	Charcoal	dry t																									
	11	SR/DR coal																										
Auxiliary material	12	Limestone	dry t																									
	13	Burnt lime	t																									
	14	Crude dolomite	dry t																									
	15	Burnt dolomite	t																									
	16	EAF graphite electrodes	t																									
	17	Nitrogen	10^3m^3(stp)																									
	18	Argon	10^3m^3(stp)																									
	19	Oxygen	10^3m^3(stp)																									
Energy carriers	20	Electricity	MWh																									
	21	Steam	t																									
Ferrous-containing material	22	Pellets	t																									
	23	Hot metal	t																									
	24	Cold iron	t																									
	25	Gas-based DRI	t																									
	26	Coal-based DRI	t																									
Alloys	27	Ferro-nickel	t																									
	28	Ferro-chromium	t																									
	29	Ferro-molybdenum	t																									
Product and by-product	30	CO_2 for external use	t																									
Others	N	Other emission sources	—																									

Calculation results

Energy Consumption Source			Unit	Total Energy Consumption (GJ/month)			Total CO_2 Emission ($t-CO_2$/month)			Total Energy Cost ($t-CO_2$/month)	
				Direct	Upstream	Credit	Direct	Upstream	Credit	Input	Output
Gas fuel	1	Natural gas	10^3m^3(stp)	0	-	0	0	-	0	0	0
	2	Town gas	10^3m^3(stp)	0	-	0	0	-	0	0	0
Liquid fuel	3	Heavy oil	m^3	0	-	0	0	-	0	0	0
	4	Light oil	m^3	0	-	0	0	-	0	0	0
	5	Kerosene	m^3	0	-	0	0	-	0	0	0
	6	LPG	t	0	-	0	0	-	0	0	0
Solid fuel	7	EAF coal	dry t	0	-	0	0	-	0	0	0
	8	Steam coal	dry t	0	-	0	0	-	0	0	0
	9	Coke	dry t	0	-	0	0	-	0	0	0
	10	Charcoal	dry t	0	-	0	0	-	0	0	0
	11	SR/DR coal		-	-	-	0	-	0	0	0
Auxiliary material	12	Limestone	dry t	-	-	0	0	-	0	0	0
	13	Burnt lime	t	-	0	0	-	0	0	0	0
	14	Crude dolomite	dry t	-	-	0	0	-	0	0	0
	15	Burnt dolomite	t	-	0	0	-	0	0	0	0
	16	EAF graphite electrodes	t	-	-	0	0	0	0	0	0
	17	Nitrogen	10^3m^3(stp)	-	0	0	-	0	0	0	0
	18	Argon	10^3m^3(stp)	-	0	0	-	0	0	0	0
	19	Oxygen	10^3m^3(stp)	-	0	0	-	0	0	0	0
Energy carriers	20	Electricity	MWh	-	0	0	-	0	0	0	0
	21	Steam	t	-	0	0	-	0	0	0	0
Ferrous-containing material	22	Pellets	t	-	-	-	0	-	-	0	0
	23	Hot metal	t	-	-	-	0	-	0	0	0
	24	Cold iron	t	-	-	-	0	-	0	0	0
	25	Gas-based DRI	t	-	-	-	0	-	0	0	0
	26	Coal-based DRI	t	-	-	-	0	-	0	0	0
Alloys	27	Ferro-nickel	t	-	-	-	0	-	0	0	0
	28	Ferro-chromium	t	-	-	-	0	-	0	0	0
	29	Ferro-molybdenum	t	-	-	-	0	-	0	0	0
Product and by-product	30	CO_2 for external use	t	-	-	-	0	-	0	0	0
Others	N	Other emission sources	—	0	0	0	0	0	0	0	0
Subtotal				0	0	0	0	0	0	0	0
			Total			GJ/month			$t-CO_2$/month		GJ/month
			Intensity (Unit)			GJ/tcs*			$t-CO_2$/tcs*		THB/tcs*

Facility by Facility Energy Consumption (GJ/month)

No.	Energy Consumption Source	EAF			LF			CCM			Ladle heater and ladle transfer			EAF dedusting system			Oxygen plant		
		Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit
1	Natural gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
2	Town gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
3	Heavy oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
4	Light oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
5	Kerosene	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
6	LPG	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
7	EAF coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
8	Steam coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
9	Coke	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
10	Charcoal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
11	SR/DR coal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	Limestone	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
13	Burnt lime	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
14	Crude dolomite	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
15	Burnt dolomite	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
16	EAF graphite electrodes	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
17	Nitrogen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
18	Argon	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
19	Oxygen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
20	Electricity	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
21	Steam	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
22	Pellets	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	Hot metal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	Cold iron	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	Gas-based DRI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	Coal-based DRI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	Ferro-nickel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	Ferro-chromium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	Ferro-molybdenum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	CO_2 for external use	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N	Other emission sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total				GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month
Intensity (Unit)				GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*

No.	Energy Consumption Source	RHF			Rolling mill			Cooling water for EAF			Cooling water for CCM			Cooling water for RHF			Others		
		Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit
1	Natural gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
2	Town gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
3	Heavy oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
4	Light oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
5	Kerosene	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
6	LPG	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
7	EAF coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
8	Steam coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
9	Coke	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
10	Charcoal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
11	SR/DR coal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	Limestone	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
13	Burnt lime	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
14	Crude dolomite	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
15	Burnt dolomite	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
16	EAF graphite electrodes	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
17	Nitrogen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
18	Argon	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
19	Oxygen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
20	Electricity	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
21	Steam	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
22	Pellets	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	Hot metal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	Cold iron	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	Gas-based DRI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	Coal-based DRI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	Ferro-nickel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	Ferro-chromium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	Ferro-molybdenum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	CO_2 for external use	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N	Other emission sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total				GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month
Intensity (Unit)				GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*

Facility by Facility CO_2 Emission ($t-CO_2$/month)

No.	Energy Consumption Source	EAF			LF			CCM			Ladle heater and ladle transfer			EAF dedusting system			Oxygen plant		
		Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit
1	Natural gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
2	Town gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
3	Heavy oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
4	Light oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
5	Kerosene	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
6	LPG	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
7	EAF coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
8	Steam coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
9	Coke	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
10	Charcoal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
11	SR/DR coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
12	Limestone	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
13	Burnt lime	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
14	Crude dolomite	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
15	Burnt dolomite	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
16	EAF graphite electrodes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	Nitrogen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
18	Argon	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
19	Oxygen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
20	Electricity	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
21	Steam	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
22	Pellets	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-
23	Hot metal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
24	Cold iron	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
25	Gas-based DRI	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
26	Coal-based DRI	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
27	Ferro-nickel	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
28	Ferro-chromium	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
29	Ferro-molybdenum	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
30	CO_2 for external use	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
N	Other emission sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total				$t-CO_2$/month			$t-CO_2$/month			$t-CO_2$/month			$t-CO_2$/month			$t-CO_2$/month			$t-CO_2$/month
Intensity (Unit)				$t-CO_2$/tcs*			$t-CO_2$/tcs*			$t-CO_2$/tcs*			$t-CO_2$/tcs*			$t-CO_2$/tcs*			$t-CO_2$/tcs*

No.	Energy Consumption Source	RHF			Rolling mill			Cooling water for EAF			Cooling water for CCM			Cooling water for RHF			Others		
		Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit
1	Natural gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
2	Town gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
3	Heavy oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
4	Light oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
5	Kerosene	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
6	LPG	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
7	EAF coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
8	Steam coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
9	Coke	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
10	Charcoal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
11	SR/DR coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
12	Limestone	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
13	Burnt lime	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
14	Crude dolomite	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
15	Burnt dolomite	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
16	EAF graphite electrodes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	Nitrogen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
18	Argon	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
19	Oxygen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
20	Electricity	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
21	Steam	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
22	Pellets	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-
23	Hot metal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
24	Cold iron	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
25	Gas-based DRI	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
26	Coal-based DRI	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
27	Ferro-nickel	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
28	Ferro-chromium	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
29	Ferro-molybdenum	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
30	CO_2 for external use	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
N	Other emission sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total				$t-CO_2$/month			$t-CO_2$/month			$t-CO_2$/month			$t-CO_2$/month			$t-CO_2$/month			$t-CO_2$/month
Intensity (Unit)				$t-CO_2$/tcs*			$t-CO_2$/tcs*			$t-CO_2$/tcs*			$t-CO_2$/tcs*			$t-CO_2$/tcs*			$t-CO_2$/tcs*

Facility by Facility Energy Cost (THB/month)

No.	Energy Consumption Source	EAF		LF		CCM		Ladle heater and ladle transfer		EAF dedusting system		Oxygen plant		RHF		Rolling mill		Cooling water for EAF		Cooling water for CCM		Cooling water for RHF		Others	
		Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output
1	Natural gas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	Town gas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Heavy oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Light oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Kerosene	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	LPG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	EAF coal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Steam coal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Coke	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Charcoal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	SR/DR coal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Limestone	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	Burnt lime	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Crude dolomite	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	Burnt dolomite	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	EAF graphite electrodes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	Nitrogen	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	Argon	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	Oxygen	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Electricity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	Steam	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	Pellets	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	Hot metal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	Cold iron	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	Gas-based DRI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	Coal-based DRI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	Ferro-nickel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	Ferro-chromium	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	Ferro-molybdenum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	CO_2 for external use	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N	Other emission sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total			THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month
Intensity (Unit)			THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*

*tcs = ton crude steel

Monthly Data Entry Sheets (02 Feb.)

Additional Instructions for Data Entry
Sheet B contains formulas in the cells that automatically sum the data entries in the 12 monthly data entry sheets (Sheets 01-12)
There are two options for entering data in this document:
Option 1: Manually enter annual data in Sheet B
Option 2: Manually enter monthly data in Sheets 01-12, which is automatically summed into annual data in Sheet B
If you choose Option 1, please delete or overwrite the forumulas in the input cells of Sheet B

Note: This sheet is based on ISO14404 Calculation Sheet for Steel Plant for EAF and/or RHF/Rolling, etc.
1. "Input" means energy/materials purchased by the steelworks from suppliers.
2. "Output" means energy/material sold to the customers outside of steelworks.
3. "stp" means standard temperature and pressure.

Please fill in blue-colored cells only. Gray/pink-colored cells are automatically calculated.

General information

Name of person in charge of this data	*********	
phone	***-****-****	
E mail	***@*******	
Actual monthly EAF production	***	ton-crude steel/month
Monthly purchased semi-finished steel products	***	ton- steel*/month (*semi-finished steel such as bloom, billet, slab etc.)
Actual monthly production	***	ton-product steel/month

Monthly Data Entry

Group	No.	Energy Consumption Source	Unit	Energy cost (THB/Unit)	Total Input (purchased)	Total Output (sold)	EAF Input	EAF Output	LF Input	LF Output	CCM Input	CCM Output	Ladle heater and ladle transfer Input	Ladle heater and ladle transfer Output	EAF dedusting system Input	EAF dedusting system Output	Oxygen plant Input	Oxygen plant Output	RHF Input	RHF Output	Rolling mill Input	Rolling mill Output	Cooling water for EAF Input	Cooling water for EAF Output	Cooling water for CCM Input	Cooling water for CCM Output	Cooling water for RHF Input	Cooling water for RHF Output	Others Input	Others Output
Gas fuel	1	Natural gas	10^3m^3(stp)																											
	2	Town gas	10^3m^3(stp)																											
Liquid fuel	3	Heavy oil	m^3																											
	4	Light oil	m^3																											
	5	Kerosene	m^3																											
	6	LPG	t																											
Solid fuel	7	EAF coal	dry t																											
	8	Steam coal	dry t																											
	9	Coke	dry t																											
	10	Charcoal	dry t																											
	11	SR/DR coal																												
Auxiliary material	12	Limestone	dry t																											
	13	Burnt lime	t																											
	14	Crude dolomite	dry t																											
	15	Burnt dolomite	t																											
	16	EAF graphite electrodes	t																											
	17	Nitrogen	10^3m^3(stp)																											
	18	Argon	10^3m^3(stp)																											
	19	Oxygen	10^3m^3(stp)																											
Energy carriers	20	Electricity	MWh																											
	21	Steam	t																											
Ferrous-containing material	22	Pellets	t																											
	23	Hot metal	t																											
	24	Cold iron	t																											
	25	Gas-based DRI	t																											
	26	Coal-based DRI	t																											
Alloys	27	Ferro-nickel	t																											
	28	Ferro-chromium	t																											
	29	Ferro-molybdenum	t																											
Product and by-product	30	CO_2 for external use	t																											
Others	N	Other emission sources	—																											

Calculation results

Group	No.	Energy Consumption Source	Unit	Total Energy Consumption Direct (GJ/month)	Total Energy Consumption Upstream (GJ/month)	Total Energy Consumption Credit (GJ/month)	Total CO_2 Emission Direct (t-CO_2/month)	Total CO_2 Emission Upstream (t-CO_2/month)	Total CO_2 Emission Credit (t-CO_2/month)	Total Energy Cost Input (t-CO_2/month)	Total Energy Cost Output (t-CO_2/month)
Gas fuel	1	Natural gas	10^3m^3(stp)	0	-	0	0	-	0	0	0
	2	Town gas	10^3m^3(stp)	0	-	0	0	-	0	0	0
Liquid fuel	3	Heavy oil	m^3	0	-	0	0	-	0	0	0
	4	Light oil	m^3	0	-	0	0	-	0	0	0
	5	Kerosene	m^3	0	-	0	0	-	0	0	0
	6	LPG	t	0	-	0	0	-	0	0	0
Solid fuel	7	EAF coal	dry t	0	-	0	0	-	0	0	0
	8	Steam coal	dry t	0	-	0	0	-	0	0	0
	9	Coke	dry t	0	-	0	0	-	0	0	0
	10	Charcoal	dry t	0	-	0	0	-	0	0	0
	11	SR/DR coal		-	-	-	0	-	0	0	0
Auxiliary material	12	Limestone	dry t	-	-	0	0	-	0	0	0
	13	Burnt lime	t	-	0	0	-	0	0	0	0
	14	Crude dolomite	dry t	-	-	0	0	-	0	0	0
	15	Burnt dolomite	t	-	0	0	-	0	0	0	0
	16	EAF graphite electrodes	t	-	-	0	0	0	0	0	0
	17	Nitrogen	10^3m^3(stp)	-	0	0	-	0	0	0	0
	18	Argon	10^3m^3(stp)	-	0	0	-	0	0	0	0
	19	Oxygen	10^3m^3(stp)	-	0	0	-	0	0	0	0
Energy carriers	20	Electricity	MWh	-	0	0	-	0	0	0	0
	21	Steam	t	-	0	0	-	0	0	0	0
Ferrous-containing material	22	Pellets	t	-	-	-	0	-	-	0	0
	23	Hot metal	t	-	-	-	0	-	0	0	0
	24	Cold iron	t	-	-	-	0	-	0	0	0
	25	Gas-based DRI	t	-	-	-	0	-	0	0	0
	26	Coal-based DRI	t	-	-	-	0	-	0	0	0
Alloys	27	Ferro-nickel	t	-	-	-	0	-	0	0	0
	28	Ferro-chromium	t	-	-	-	0	-	0	0	0
	29	Ferro-molybdenum	t	-	-	-	0	-	0	0	0
Product and by-product	30	CO_2 for external use	t	-	-	-	0	-	0	0	0
Others	N	Other emission sources	—	0	0	0	0	0	0	0	0
Subtotal				0	0	0	0	0	0	0	0
			Total			GJ/month			t-CO_2/month		GJ/month
			Intensity (Unit)			GJ/tcs*			t-CO_2/tcs*		THB/tcs*

Facility by Facility Energy Consumption (GJ/month)

No.	Energy Consumption Source	EAF Direct	EAF Upstream	EAF Credit	LF Direct	LF Upstream	LF Credit	CCM Direct	CCM Upstream	CCM Credit	Ladle heater and ladle transfer Direct	Ladle heater and ladle transfer Upstream	Ladle heater and ladle transfer Credit	EAF dedusting system Direct	EAF dedusting system Upstream	EAF dedusting system Credit	Oxygen plant Direct	Oxygen plant Upstream	Oxygen plant Credit
1	Natural gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
2	Town gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
3	Heavy oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
4	Light oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
5	Kerosene	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
6	LPG	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
7	EAF coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
8	Steam coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
9	Coke	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
10	Charcoal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
11	SR/DR coal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	Limestone	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
13	Burnt lime	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
14	Crude dolomite	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
15	Burnt dolomite	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
16	EAF graphite electrodes	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
17	Nitrogen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
18	Argon	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
19	Oxygen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
20	Electricity	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
21	Steam	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
22	Pellets	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	Hot metal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	Cold iron	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	Gas-based DRI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	Coal-based DRI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	Ferro-nickel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	Ferro-chromium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	Ferro-molybdenum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	CO_2 for external use	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N	Other emission sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total				GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month
Intensity (Unit)				GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*

No.	Energy Consumption Source	RHF Direct	RHF Upstream	RHF Credit	Rolling mill Direct	Rolling mill Upstream	Rolling mill Credit	Cooling water for EAF Direct	Cooling water for EAF Upstream	Cooling water for EAF Credit	Cooling water for CCM Direct	Cooling water for CCM Upstream	Cooling water for CCM Credit	Cooling water for RHF Direct	Cooling water for RHF Upstream	Cooling water for RHF Credit	Others Direct	Others Upstream	Others Credit
1	Natural gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
2	Town gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
3	Heavy oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
4	Light oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
5	Kerosene	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
6	LPG	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
7	EAF coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
8	Steam coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
9	Coke	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
10	Charcoal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
11	SR/DR coal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	Limestone	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
13	Burnt lime	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
14	Crude dolomite	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
15	Burnt dolomite	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
16	EAF graphite electrodes	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
17	Nitrogen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
18	Argon	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
19	Oxygen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
20	Electricity	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
21	Steam	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
22	Pellets	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	Hot metal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	Cold iron	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	Gas-based DRI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	Coal-based DRI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	Ferro-nickel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	Ferro-chromium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	Ferro-molybdenum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	CO_2 for external use	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N	Other emission sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total				GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month
Intensity (Unit)				GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*

Facility by Facility CO_2 Emission (t-CO_2/month)

No.	Energy Consumption Source	EAF Direct	EAF Upstream	EAF Credit	LF Direct	LF Upstream	LF Credit	CCM Direct	CCM Upstream	CCM Credit	Ladle heater and ladle transfer Direct	Ladle heater and ladle transfer Upstream	Ladle heater and ladle transfer Credit	EAF dedusting system Direct	EAF dedusting system Upstream	EAF dedusting system Credit	Oxygen plant Direct	Oxygen plant Upstream	Oxygen plant Credit
1	Natural gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
2	Town gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
3	Heavy oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
4	Light oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
5	Kerosene	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
6	LPG	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
7	EAF coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
8	Steam coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
9	Coke	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
10	Charcoal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
11	SR/DR coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
12	Limestone	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
13	Burnt lime	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
14	Crude dolomite	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
15	Burnt dolomite	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
16	EAF graphite electrodes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	Nitrogen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
18	Argon	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
19	Oxygen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
20	Electricity	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
21	Steam	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
22	Pellets	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-
23	Hot metal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
24	Cold iron	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
25	Gas-based DRI	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
26	Coal-based DRI	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
27	Ferro-nickel	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
28	Ferro-chromium	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
29	Ferro-molybdenum	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
30	CO_2 for external use	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
N	Other emission sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total				t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month
Intensity (Unit)				t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*

No.	Energy Consumption Source	RHF Direct	RHF Upstream	RHF Credit	Rolling mill Direct	Rolling mill Upstream	Rolling mill Credit	Cooling water for EAF Direct	Cooling water for EAF Upstream	Cooling water for EAF Credit	Cooling water for CCM Direct	Cooling water for CCM Upstream	Cooling water for CCM Credit	Cooling water for RHF Direct	Cooling water for RHF Upstream	Cooling water for RHF Credit	Others Direct	Others Upstream	Others Credit
1	Natural gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
2	Town gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
3	Heavy oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
4	Light oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
5	Kerosene	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
6	LPG	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
7	EAF coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
8	Steam coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
9	Coke	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
10	Charcoal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
11	SR/DR coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
12	Limestone	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
13	Burnt lime	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
14	Crude dolomite	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
15	Burnt dolomite	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
16	EAF graphite electrodes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	Nitrogen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
18	Argon	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
19	Oxygen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
20	Electricity	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
21	Steam	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
22	Pellets	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-
23	Hot metal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
24	Cold iron	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
25	Gas-based DRI	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
26	Coal-based DRI	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
27	Ferro-nickel	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
28	Ferro-chromium	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
29	Ferro-molybdenum	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
30	CO_2 for external use	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
N	Other emission sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total				t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month
Intensity (Unit)				t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*

Facility by Facility Energy Cost (THB/month)

No.	Energy Consumption Source	EAF Input	EAF Output	LF Input	LF Output	CCM Input	CCM Output	Ladle heater and ladle transfer Input	Ladle heater and ladle transfer Output	EAF dedusting system Input	EAF dedusting system Output	Oxygen plant Input	Oxygen plant Output	RHF Input	RHF Output	Rolling mill Input	Rolling mill Output	Cooling water for EAF Input	Cooling water for EAF Output	Cooling water for CCM Input	Cooling water for CCM Output	Cooling water for RHF Input	Cooling water for RHF Output	Others Input	Others Output
1	Natural gas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	Town gas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Heavy oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Light oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Kerosene	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	LPG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	EAF coal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Steam coal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Coke	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Charcoal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	SR/DR coal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Limestone	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	Burnt lime	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Crude dolomite	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	Burnt dolomite	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	EAF graphite electrodes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	Nitrogen	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	Argon	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	Oxygen	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Electricity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	Steam	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	Pellets	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	Hot metal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	Cold iron	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	Gas-based DRI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	Coal-based DRI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	Ferro-nickel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	Ferro-chromium	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	Ferro-molybdenum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	CO_2 for external use	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N	Other emission sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total			THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month
Intensity (Unit)			THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*

*tcs = ton crude steel

Monthly Data Entry Sheets (03 Mar.)

Additional Instructions for Data Entry
Sheet B contains formulas in the cells that automatically sum the data entries in the 12 monthly data entry sheets (Sheets 01-12)
There are two options for entering data in this document:
Option 1: Manually enter annual data in Sheet B
Option 2: Manually enter monthly data in Sheets 01-12, which is automatically summed into annual data in Sheet B
If you choose Option 1, please delete or overwrite the forumulas in the input cells of Sheet B

Note: This sheet is based on ISO14404 Calculation Sheet for Steel Plant for EAF and/or RHF/Rolling, etc.
1. "Input" means energy/materials purchased by the steelworks from suppliers.
2. "Output" means energy/material sold to the customers outside of steelworks.
3. "stp" means standard temperature and pressure.

Please fill in blue-colored cells only. Gray/pink-colored cells are automatically calculated.

General information

Name of person in charge of this data	*********	
phone	***-****-****	
E mail	***@*******	
Actual monthly EAF production	***	ton-crude steel/month
Monthly purchased semi-finished steel products	***	ton- steel*/month (*semi-finished steel such as bloom, billet, slab etc.)
Actual monthly production	***	ton-product steel/month

Monthly Data Entry

Energy Consumption Source	No.	Source	Unit	Energy cost THB/Unit	Total Input (purchased)	Total Output (sold)	EAF Input	EAF Output	LF Input	LF Output	CCM Input	CCM Output	Ladle heater and ladle transfer Input	Ladle heater and ladle transfer Output	EAF dedusting system Input	EAF dedusting system Output	Oxygen plant Input	Oxygen plant Output	RHF Input	RHF Output	Rolling mill Input	Rolling mill Output	Cooling water for EAF Input	Cooling water for EAF Output	Cooling water for CCM Input	Cooling water for CCM Output	Cooling water for RHF Input	Cooling water for RHF Output	Others Input	Others Output
Gas fuel	1	Natural gas	10^3m^3(stp)																											
	2	Town gas	10^3m^3(stp)																											
Liquid fuel	3	Heavy oil	m^3																											
	4	Light oil	m^3																											
	5	Kerosene	m^3																											
	6	LPG	t																											
Solid fuel	7	EAF coal	dry t																											
	8	Steam coal	dry t																											
	9	Coke	dry t																											
	10	Charcoal	dry t																											
	11	SR/DR coal																												
Auxiliary material	12	Limestone	dry t																											
	13	Burnt lime	t																											
	14	Crude dolomite	dry t																											
	15	Burnt dolomite	t																											
	16	EAF graphite electrodes	t																											
	17	Nitrogen	10^3m^3(stp)																											
	18	Argon	10^3m^3(stp)																											
	19	Oxygen	10^3m^3(stp)																											
Energy carriers	20	Electricity	MWh																											
	21	Steam	t																											
Ferrous-containing material	22	Pellets	t																											
	23	Hot metal	t																											
	24	Cold iron	t																											
	25	Gas-based DRI	t																											
	26	Coal-based DRI	t																											
Alloys	27	Ferro-nickel	t																											
	28	Ferro-chromium	t																											
	29	Ferro-molybdenum	t																											
Product and by-product	30	CO_2 for external use	t																											
Others	N	Other emission sources	—																											

Calculation results

Energy Consumption Source	No.	Source	Unit	Total Energy Consumption Direct	Total Energy Consumption Upstream	Total Energy Consumption Credit	Total CO_2 Emission Direct	Total CO_2 Emission Upstream	Total CO_2 Emission Credit	Total Energy Cost Input	Total Energy Cost Output
				GJ/month			t-CO_2/month			t-CO_2/month	
Gas fuel	1	Natural gas	10^3m^3(stp)	0	-	0	0	-	0	0	0
	2	Town gas	10^3m^3(stp)	0	-	0	0	-	0	0	0
Liquid fuel	3	Heavy oil	m^3	0	-	0	0	-	0	0	0
	4	Light oil	m^3	0	-	0	0	-	0	0	0
	5	Kerosene	m^3	0	-	0	0	-	0	0	0
	6	LPG	t	0	-	0	0	-	0	0	0
Solid fuel	7	EAF coal	dry t	0	-	0	0	-	0	0	0
	8	Steam coal	dry t	0	-	0	0	-	0	0	0
	9	Coke	dry t	0	-	0	0	-	0	0	0
	10	Charcoal	dry t	0	-	0	0	-	0	0	0
	11	SR/DR coal		-	-	-	0	-	0	0	0
Auxiliary material	12	Limestone	dry t	-	-	0	0	-	0	0	0
	13	Burnt lime	t	-	0	0	-	0	0	0	0
	14	Crude dolomite	dry t	-	-	0	0	-	0	0	0
	15	Burnt dolomite	t	-	0	0	-	0	0	0	0
	16	EAF graphite electrodes	t	-	-	0	0	-	0	0	0
	17	Nitrogen	10^3m^3(stp)	-	0	0	-	0	0	0	0
	18	Argon	10^3m^3(stp)	-	0	0	-	0	0	0	0
	19	Oxygen	10^3m^3(stp)	-	0	0	-	0	0	0	0
Energy carriers	20	Electricity	MWh	-	0	0	-	0	0	0	0
	21	Steam	t	-	0	0	-	0	0	0	0
Ferrous-containing material	22	Pellets	t	-	-	-	0	-	-	0	0
	23	Hot metal	t	-	-	-	0	-	0	0	0
	24	Cold iron	t	-	-	-	0	-	0	0	0
	25	Gas-based DRI	t	-	-	-	0	-	0	0	0
	26	Coal-based DRI	t	-	-	-	0	-	0	0	0
Alloys	27	Ferro-nickel	t	-	-	-	0	-	0	0	0
	28	Ferro-chromium	t	-	-	-	0	-	0	0	0
	29	Ferro-molybdenum	t	-	-	-	0	-	0	0	0
Product and by-product	30	CO_2 for external use	t	-	-	-	0	-	0	0	0
Others	N	Other emission sources	—	0	0	0	0	0	0	0	0
Subtotal				0	0	0	0	0	0	0	0
			Total			GJ/month			t-CO_2/month		GJ/month
			Intensity (Unit)			GJ/tcs*			t-CO_2/tcs*		THB/tcs*

Facility by Facility Energy Consumption (GJ/month)

No.	Source	EAF Direct	EAF Upstream	EAF Credit	LF Direct	LF Upstream	LF Credit	CCM Direct	CCM Upstream	CCM Credit	Ladle heater and ladle transfer Direct	Ladle heater and ladle transfer Upstream	Ladle heater and ladle transfer Credit	EAF dedusting system Direct	EAF dedusting system Upstream	EAF dedusting system Credit	Oxygen plant Direct	Oxygen plant Upstream	Oxygen plant Credit	RHF Direct	RHF Upstream	RHF Credit	Rolling mill Direct	Rolling mill Upstream	Rolling mill Credit	Cooling water for EAF Direct	Cooling water for EAF Upstream	Cooling water for EAF Credit	Cooling water for CCM Direct	Cooling water for CCM Upstream	Cooling water for CCM Credit	Cooling water for RHF Direct	Cooling water for RHF Upstream	Cooling water for RHF Credit	Others Direct	Others Upstream	Others Credit
1	Natural gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
2	Town gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
3	Heavy oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
4	Light oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
5	Kerosene	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
6	LPG	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
7	EAF coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
8	Steam coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
9	Coke	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
10	Charcoal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
11	SR/DR coal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	Limestone	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
13	Burnt lime	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
14	Crude dolomite	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
15	Burnt dolomite	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
16	EAF graphite electrodes	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
17	Nitrogen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
18	Argon	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
19	Oxygen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
20	Electricity	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
21	Steam	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
22	Pellets	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	Hot metal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	Cold iron	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	Gas-based DRI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	Coal-based DRI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	Ferro-nickel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	Ferro-chromium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	Ferro-molybdenum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	CO_2 for external use	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N	Other emission sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total				GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month
Intensity (Unit)				GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*

Facility by Facility CO_2 Emission (t-CO_2/month)

No.	Source	EAF Direct	EAF Upstream	EAF Credit	LF Direct	LF Upstream	LF Credit	CCM Direct	CCM Upstream	CCM Credit	Ladle heater and ladle transfer Direct	Ladle heater and ladle transfer Upstream	Ladle heater and ladle transfer Credit	EAF dedusting system Direct	EAF dedusting system Upstream	EAF dedusting system Credit	Oxygen plant Direct	Oxygen plant Upstream	Oxygen plant Credit	RHF Direct	RHF Upstream	RHF Credit	Rolling mill Direct	Rolling mill Upstream	Rolling mill Credit	Cooling water for EAF Direct	Cooling water for EAF Upstream	Cooling water for EAF Credit	Cooling water for CCM Direct	Cooling water for CCM Upstream	Cooling water for CCM Credit	Cooling water for RHF Direct	Cooling water for RHF Upstream	Cooling water for RHF Credit	Others Direct	Others Upstream	Others Credit
1	Natural gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
2	Town gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
3	Heavy oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
4	Light oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
5	Kerosene	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
6	LPG	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
7	EAF coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
8	Steam coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
9	Coke	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
10	Charcoal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
11	SR/DR coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
12	Limestone	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
13	Burnt lime	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
14	Crude dolomite	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
15	Burnt dolomite	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
16	EAF graphite electrodes	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
17	Nitrogen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
18	Argon	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
19	Oxygen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
20	Electricity	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
21	Steam	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
22	Pellets	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-
23	Hot metal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
24	Cold iron	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
25	Gas-based DRI	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
26	Coal-based DRI	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
27	Ferro-nickel	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
28	Ferro-chromium	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
29	Ferro-molybdenum	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
30	CO_2 for external use	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
N	Other emission sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total				t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month
Intensity (Unit)				t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*

Facility by Facility Energy Cost (THB/month)

No.	Source	EAF Input	EAF Output	LF Input	LF Output	CCM Input	CCM Output	Ladle heater and ladle transfer Input	Ladle heater and ladle transfer Output	EAF dedusting system Input	EAF dedusting system Output	Oxygen plant Input	Oxygen plant Output	RHF Input	RHF Output	Rolling mill Input	Rolling mill Output	Cooling water for EAF Input	Cooling water for EAF Output	Cooling water for CCM Input	Cooling water for CCM Output	Cooling water for RHF Input	Cooling water for RHF Output	Others Input	Others Output
1	Natural gas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	Town gas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Heavy oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Light oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Kerosene	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	LPG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	EAF coal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Steam coal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Coke	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Charcoal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	SR/DR coal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Limestone	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	Burnt lime	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Crude dolomite	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	Burnt dolomite	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	EAF graphite electrodes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	Nitrogen	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	Argon	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	Oxygen	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Electricity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	Steam	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	Pellets	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	Hot metal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	Cold iron	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	Gas-based DRI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	Coal-based DRI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	Ferro-nickel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	Ferro-chromium	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	Ferro-molybdenum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	CO_2 for external use	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N	Other emission sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total			THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month
Intensity (Unit)			THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*

*tcs = ton crude steel

Monthly Data Entry Sheets (04 Apr.)

Additional Instructions for Data Entry
Sheet B contains formulas in the cells that automatically sum the data entries in the 12 monthly data entry sheets (Sheets 01-12)
There are two options for entering data in this document:
- Option 1: Manually enter annual data in Sheet B
- Option 2: Manually enter monthly data in Sheets 01-12, which is automatically summed into annual data in Sheet B

If you choose Option 1, please delete or overwrite the forumulas in the input cells of Sheet B

Note: This sheet is based on ISO14404 Calculation Sheet for Steel Plant for EAF and/or RHF/Rolling, etc.
1. "Input" means energy/materials purchased by the steelworks from suppliers.
2. "Output" means energy/material sold to the customers outside of steelworks.
3. "stp" means standard temperature and pressure.

Please fill in blue-colored cells only. Gray/pink-colored cells are automatically calculated.

General information

Name of person in charge of this data	*********		
phone	***-****-****		
E mail	***@*******		
Actual monthly EAF production	***	ton-crude steel/month	
Monthly purchased semi-finished steel products	***	ton- steel*/month	(*semi-finished steel such as bloom, billet, slab etc.)
Actual monthly production	***	ton-product steel/month	

Monthly Data Entry

Facility by Facility

				Energy cost	Total		EAF		LF		CCM		Ladle heater and ladle transfer		EAF dedusting system		Oxygen plant		RHF		Rolling mill		Cooling water for EAF		Cooling water for CCM		Cooling water for RHF		Others	
Energy Consumption Source			Unit	THB/Unit	Input (purchased)	Output (sold)	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output
Gas fuel	1	Natural gas	10^3m^3(stp)																											
	2	Town gas	10^3m^3(stp)																											
Liquid fuel	3	Heavy oil	m^3																											
	4	Light oil	m^3																											
	5	Kerosene	m^3																											
	6	LPG	t																											
Solid fuel	7	EAF coal	dry t																											
	8	Steam coal	dry t																											
	9	Coke	dry t																											
	10	Charcoal	dry t																											
	11	SR/DR coal																												
Auxiliary material	12	Limestone	dry t																											
	13	Burnt lime	t																											
	14	Crude dolomite	dry t																											
	15	Burnt dolomite	t																											
	16	EAF graphite electrodes	t																											
	17	Nitrogen	10^3m^3(stp)																											
	18	Argon	10^3m^3(stp)																											
	19	Oxygen	10^3m^3(stp)																											
Energy carriers	20	Electricity	MWh																											
	21	Steam	t																											
Ferrous-containing material	22	Pellets	t																											
	23	Hot metal	t																											
	24	Cold iron	t																											
	25	Gas-based DRI	t																											
	26	Coal-based DRI	t																											
Alloys	27	Ferro-nickel	t																											
	28	Ferro-chromium	t																											
	29	Ferro-molybdenum	t																											
Product and by-product	30	CO_2 for external use	t																											
Others	N	Other emission sources	—																											

Calculation results

Energy Consumption Source			Unit	Total Energy Consumption			Total CO_2 Emission			Total Energy Cost	
				Direct	Upstream	Credit	Direct	Upstream	Credit	Input	Output
				GJ/month			t-CO_2/month			t-CO_2/month	
Gas fuel	1	Natural gas	10^3m^3(stp)	0	-	0	0	-	0	0	0
	2	Town gas	10^3m^3(stp)	0	-	0	0	-	0	0	0
Liquid fuel	3	Heavy oil	m^3	0	-	0	0	-	0	0	0
	4	Light oil	m^3	0	-	0	0	-	0	0	0
	5	Kerosene	m^3	0	-	0	0	-	0	0	0
	6	LPG	t	0	-	0	0	-	0	0	0
Solid fuel	7	EAF coal	dry t	0	-	0	0	-	0	0	0
	8	Steam coal	dry t	0	-	0	0	-	0	0	0
	9	Coke	dry t	0	-	0	0	-	0	0	0
	10	Charcoal	dry t	0	-	0	0	-	0	0	0
	11	SR/DR coal		-	-	-	0	-	0	0	0
Auxiliary material	12	Limestone	dry t	-	-	0	0	-	0	0	0
	13	Burnt lime	t	-	-	0	-	-	0	-	0
	14	Crude dolomite	dry t	-	-	0	0	-	0	0	0
	15	Burnt dolomite	t	-	0	0	-	0	0	0	0
	16	EAF graphite electrodes	t	-	-	0	-	-	0	-	0
	17	Nitrogen	10^3m^3(stp)	-	-	0	-	-	0	-	0
	18	Argon	10^3m^3(stp)	-	-	0	-	-	0	-	0
	19	Oxygen	10^3m^3(stp)	-	0	0	-	0	0	0	0
Energy carriers	20	Electricity	MWh	-	0	0	-	0	0	0	0
	21	Steam	t	-	0	0	-	0	0	0	0
Ferrous-containing material	22	Pellets	t	-	-	-	0	-	-	0	0
	23	Hot metal	t	-	-	-	0	-	0	0	0
	24	Cold iron	t	-	-	-	0	-	0	0	0
	25	Gas-based DRI	t	-	-	-	0	-	0	0	0
	26	Coal-based DRI	t	-	-	-	0	-	0	0	0
Alloys	27	Ferro-nickel	t	-	-	-	0	-	0	0	0
	28	Ferro-chromium	t	-	-	-	0	-	0	0	0
	29	Ferro-molybdenum	t	-	-	-	0	-	0	0	0
Product and by-product	30	CO_2 for external use	t	-	-	-	0	-	0	0	0
Others	N	Other emission sources	—	0	0	0	0	0	0	0	0
Subtotal				0	0	0	0	0	0	0	0
			Total			GJ/month			t-CO_2/month		GJ/month
			Intensity (Unit)			GJ/tcs*			t-CO_2/tcs*		THB/tcs*

Facility by Facility Energy Consumption

Energy Consumption Source		EAF			LF			CCM			Ladle heater and ladle transfer			EAF dedusting system			Oxygen plant			RHF			Rolling mill			Cooling water for EAF			Cooling water for CCM			Cooling water for RHF			Others		
		Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit
		GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month		
1	Natural gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
2	Town gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
3	Heavy oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
4	Light oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
5	Kerosene	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
6	LPG	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
7	EAF coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
8	Steam coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
9	Coke	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
10	Charcoal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
11	SR/DR coal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	Limestone	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
13	Burnt lime	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
14	Crude dolomite	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
15	Burnt dolomite	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
16	EAF graphite electrodes	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
17	Nitrogen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
18	Argon	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
19	Oxygen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
20	Electricity	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
21	Steam	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
22	Pellets	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	Hot metal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	Cold iron	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	Gas-based DRI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	Coal-based DRI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	Ferro-nickel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	Ferro-chromium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	Ferro-molybdenum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	CO_2 for external use	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N	Other emission sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month
	Intensity (Unit)			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*

Facility by Facility CO_2 Emission

Energy Consumption Source		EAF			LF			CCM			Ladle heater and ladle transfer			EAF dedusting system			Oxygen plant			RHF			Rolling mill			Cooling water for EAF			Cooling water for CCM			Cooling water for RHF			Others		
		Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit
		t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month		
1	Natural gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
2	Town gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
3	Heavy oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
4	Light oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
5	Kerosene	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
6	LPG	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
7	EAF coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
8	Steam coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
9	Coke	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
10	Charcoal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
11	SR/DR coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
12	Limestone	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
13	Burnt lime	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
14	Crude dolomite	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
15	Burnt dolomite	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
16	EAF graphite electrodes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	Nitrogen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
18	Argon	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
19	Oxygen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
20	Electricity	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
21	Steam	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
22	Pellets	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-
23	Hot metal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
24	Cold iron	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
25	Gas-based DRI	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
26	Coal-based DRI	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
27	Ferro-nickel	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
28	Ferro-chromium	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
29	Ferro-molybdenum	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
30	CO_2 for external use	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
N	Other emission sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month
	Intensity (Unit)			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*

Facility by Facility Energy Cost

Energy Consumption Source		EAF		LF		CCM		Ladle heater and ladle transfer		EAF dedusting system		Oxygen plant		RHF		Rolling mill		Cooling water for EAF		Cooling water for CCM		Cooling water for RHF		Others	
		Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output
		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month	
1	Natural gas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	Town gas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Heavy oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Light oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Kerosene	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	LPG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	EAF coal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Steam coal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Coke	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Charcoal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	SR/DR coal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Limestone	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	Burnt lime	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Crude dolomite	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	Burnt dolomite	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	EAF graphite electrodes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	Nitrogen	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	Argon	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	Oxygen	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Electricity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	Steam	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	Pellets	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	Hot metal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	Cold iron	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	Gas-based DRI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	Coal-based DRI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	Ferro-nickel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	Ferro-chromium	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	Ferro-molybdenum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	CO_2 for external use	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N	Other emission sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month
	Intensity (Unit)		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*

*tcs = ton crude steel

Monthly Data Entry Sheets (05 May.)

Additional Instructions for Data Entry
Sheet B contains formulas in the cells that automatically sum the data entries in the 12 monthly data entry sheets (Sheets 01-12)
There are two options for entering data in this document:
- Option 1: Manually enter annual data in Sheet B
- Option 2: Manually enter monthly data in Sheets 01-12, which is automatically summed into annual data in Sheet B

If you choose Option 1, please delete or overwrite the forumulas in the input cells of Sheet B

Note: This sheet is based on ISO14404 Calculation Sheet for Steel Plant for EAF and/or RHF/Rolling, etc.
1. "Input" means energy/materials purchased by the steelworks from suppliers.
2. "Output" means energy/material sold to the customers outside of steelworks.
3. "stp" means standard temperature and pressure.

Please fill in blue-colored cells only. Gray/pink-colored cells are automatically calculated.

General information

Name of person in charge of this data	*********	
phone	***-****-****	
E mail	***@*******	
Actual monthly EAF production	***	ton-crude steel/month
Monthly purchased semi-finished steel products	***	ton- steel*/month (*semi-finished steel such as bloom, billet, slab etc.)
Actual monthly production	***	ton-product steel/month

Monthly Data Entry

Energy Consumption Source	No.	Item	Unit	Energy cost (THB/Unit)	Total Input (purchased)	Total Output (sold)	EAF Input	EAF Output	LF Input	LF Output	CCM Input	CCM Output	Ladle heater and ladle transfer Input	Ladle heater and ladle transfer Output	EAF dedusting system Input	EAF dedusting system Output	Oxygen plant Input	Oxygen plant Output	RHF Input	RHF Output	Rolling mill Input	Rolling mill Output	Cooling water for EAF Input	Cooling water for EAF Output	Cooling water for CCM Input	Cooling water for CCM Output	Cooling water for RHF Input	Cooling water for RHF Output	Others Input	Others Output
Gas fuel	1	Natural gas	10^3m^3(stp)																											
	2	Town gas	10^3m^3(stp)																											
Liquid fuel	3	Heavy oil	m^3																											
	4	Light oil	m^3																											
	5	Kerosene	m^3																											
	6	LPG	t																											
Solid fuel	7	EAF coal	dry t																											
	8	Steam coal	dry t																											
	9	Coke	dry t																											
	10	Charcoal	dry t																											
	11	SR/DR coal																												
Auxiliary material	12	Limestone	dry t																											
	13	Burnt lime	t																											
	14	Crude dolomite	dry t																											
	15	Burnt dolomite	t																											
	16	EAF graphite electrodes	t																											
	17	Nitrogen	10^3m^3(stp)																											
	18	Argon	10^3m^3(stp)																											
	19	Oxygen	10^3m^3(stp)																											
Energy carriers	20	Electricity	MWh																											
	21	Steam	t																											
Ferrous-containing material	22	Pellets	t																											
	23	Hot metal	t																											
	24	Cold iron	t																											
	25	Gas-based DRI	t																											
	26	Coal-based DRI	t																											
Alloys	27	Ferro-nickel	t																											
	28	Ferro-chromium	t																											
	29	Ferro-molybdenum	t																											
Product and by-product	30	CO_2 for external use	t																											
Others	N	Other emission sources	—																											

Calculation results

Energy Consumption Source	No.	Item	Unit	Total Energy Consumption Direct	Total Energy Consumption Upstream	Total Energy Consumption Credit	Total CO_2 Emission Direct	Total CO_2 Emission Upstream	Total CO_2 Emission Credit	Total Energy Cost Input	Total Energy Cost Output
				GJ/month			t-CO_2/month			t-CO_2/month	
Gas fuel	1	Natural gas	10^3m^3(stp)	0	-	0	0	-	0	0	0
	2	Town gas	10^3m^3(stp)	0	-	0	0	-	0	0	0
Liquid fuel	3	Heavy oil	m^3	0	-	0	0	-	0	0	0
	4	Light oil	m^3	0	-	0	0	-	0	0	0
	5	Kerosene	m^3	0	-	0	0	-	0	0	0
	6	LPG	t	0	-	0	0	-	0	0	0
Solid fuel	7	EAF coal	dry t	0	-	0	0	-	0	0	0
	8	Steam coal	dry t	0	-	0	0	-	0	0	0
	9	Coke	dry t	0	-	0	0	-	0	0	0
	10	Charcoal	dry t	0	-	0	0	-	0	0	0
	11	SR/DR coal		-	-	-	0	-	0	0	0
Auxiliary material	12	Limestone	dry t	-	-	0	0	-	0	0	0
	13	Burnt lime	t	-	-	0	-	-	0	-	0
	14	Crude dolomite	dry t	-	-	0	0	-	0	0	0
	15	Burnt dolomite	t	-	0	0	-	0	0	0	0
	16	EAF graphite electrodes	t	-	-	0	-	-	0	-	0
	17	Nitrogen	10^3m^3(stp)	-	-	0	-	-	0	-	0
	18	Argon	10^3m^3(stp)	-	-	0	-	-	0	-	0
	19	Oxygen	10^3m^3(stp)	-	0	0	-	0	0	0	0
Energy carriers	20	Electricity	MWh	-	0	0	-	0	0	0	0
	21	Steam	t	-	0	0	-	0	0	0	0
Ferrous-containing material	22	Pellets	t	-	-	-	0	-	-	0	0
	23	Hot metal	t	-	-	-	0	-	0	0	0
	24	Cold iron	t	-	-	-	0	-	0	0	0
	25	Gas-based DRI	t	-	-	-	0	-	0	0	0
	26	Coal-based DRI	t	-	-	-	0	-	0	0	0
Alloys	27	Ferro-nickel	t	-	-	-	0	-	0	0	0
	28	Ferro-chromium	t	-	-	-	0	-	0	0	0
	29	Ferro-molybdenum	t	-	-	-	0	-	0	0	0
Product and by-product	30	CO_2 for external use	t	-	-	-	0	-	0	0	0
Others	N	Other emission sources	—	0	0	0	0	0	0	0	0
Subtotal				0	0	0	0	0	0	0	0
			Total			GJ/month			t-CO_2/month		GJ/month
			Intensity (Unit)			GJ/tcs*			t-CO_2/tcs*		THB/tcs*

Facility by Facility Energy Consumption (GJ/month)

No.	Item	EAF Direct	EAF Upstream	EAF Credit	LF Direct	LF Upstream	LF Credit	CCM Direct	CCM Upstream	CCM Credit	Ladle heater and ladle transfer Direct	Ladle heater and ladle transfer Upstream	Ladle heater and ladle transfer Credit	EAF dedusting system Direct	EAF dedusting system Upstream	EAF dedusting system Credit	Oxygen plant Direct	Oxygen plant Upstream	Oxygen plant Credit
1	Natural gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
2	Town gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
3	Heavy oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
4	Light oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
5	Kerosene	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
6	LPG	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
7	EAF coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
8	Steam coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
9	Coke	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
10	Charcoal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
11	SR/DR coal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	Limestone	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
13	Burnt lime	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
14	Crude dolomite	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
15	Burnt dolomite	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
16	EAF graphite electrodes	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
17	Nitrogen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
18	Argon	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
19	Oxygen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
20	Electricity	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
21	Steam	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
22	Pellets	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	Hot metal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	Cold iron	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	Gas-based DRI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	Coal-based DRI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	Ferro-nickel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	Ferro-chromium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	Ferro-molybdenum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	CO_2 for external use	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N	Other emission sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total				GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month
Intensity (Unit)				GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*

No.	Item	RHF Direct	RHF Upstream	RHF Credit	Rolling mill Direct	Rolling mill Upstream	Rolling mill Credit	Cooling water for EAF Direct	Cooling water for EAF Upstream	Cooling water for EAF Credit	Cooling water for CCM Direct	Cooling water for CCM Upstream	Cooling water for CCM Credit	Cooling water for RHF Direct	Cooling water for RHF Upstream	Cooling water for RHF Credit	Others Direct	Others Upstream	Others Credit
1	Natural gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
2	Town gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
3	Heavy oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
4	Light oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
5	Kerosene	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
6	LPG	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
7	EAF coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
8	Steam coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
9	Coke	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
10	Charcoal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
11	SR/DR coal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	Limestone	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
13	Burnt lime	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
14	Crude dolomite	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
15	Burnt dolomite	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
16	EAF graphite electrodes	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
17	Nitrogen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
18	Argon	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
19	Oxygen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
20	Electricity	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
21	Steam	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
22	Pellets	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	Hot metal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	Cold iron	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	Gas-based DRI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	Coal-based DRI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	Ferro-nickel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	Ferro-chromium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	Ferro-molybdenum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	CO_2 for external use	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N	Other emission sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total				GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month
Intensity (Unit)				GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*

Facility by Facility CO_2 Emission (t-CO_2/month)

No.	Item	EAF Direct	EAF Upstream	EAF Credit	LF Direct	LF Upstream	LF Credit	CCM Direct	CCM Upstream	CCM Credit	Ladle heater and ladle transfer Direct	Ladle heater and ladle transfer Upstream	Ladle heater and ladle transfer Credit	EAF dedusting system Direct	EAF dedusting system Upstream	EAF dedusting system Credit	Oxygen plant Direct	Oxygen plant Upstream	Oxygen plant Credit
1	Natural gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
2	Town gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
3	Heavy oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
4	Light oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
5	Kerosene	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
6	LPG	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
7	EAF coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
8	Steam coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
9	Coke	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
10	Charcoal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
11	SR/DR coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
12	Limestone	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
13	Burnt lime	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
14	Crude dolomite	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
15	Burnt dolomite	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
16	EAF graphite electrodes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	Nitrogen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
18	Argon	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
19	Oxygen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
20	Electricity	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
21	Steam	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
22	Pellets	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-
23	Hot metal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
24	Cold iron	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
25	Gas-based DRI	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
26	Coal-based DRI	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
27	Ferro-nickel	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
28	Ferro-chromium	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
29	Ferro-molybdenum	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
30	CO_2 for external use	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
N	Other emission sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total				t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month
Intensity (Unit)				t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*

No.	Item	RHF Direct	RHF Upstream	RHF Credit	Rolling mill Direct	Rolling mill Upstream	Rolling mill Credit	Cooling water for EAF Direct	Cooling water for EAF Upstream	Cooling water for EAF Credit	Cooling water for CCM Direct	Cooling water for CCM Upstream	Cooling water for CCM Credit	Cooling water for RHF Direct	Cooling water for RHF Upstream	Cooling water for RHF Credit	Others Direct	Others Upstream	Others Credit
1	Natural gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
2	Town gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
3	Heavy oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
4	Light oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
5	Kerosene	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
6	LPG	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
7	EAF coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
8	Steam coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
9	Coke	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
10	Charcoal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
11	SR/DR coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
12	Limestone	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
13	Burnt lime	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
14	Crude dolomite	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
15	Burnt dolomite	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
16	EAF graphite electrodes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	Nitrogen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
18	Argon	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
19	Oxygen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
20	Electricity	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
21	Steam	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
22	Pellets	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-
23	Hot metal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
24	Cold iron	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
25	Gas-based DRI	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
26	Coal-based DRI	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
27	Ferro-nickel	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
28	Ferro-chromium	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
29	Ferro-molybdenum	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
30	CO_2 for external use	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
N	Other emission sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total				t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month
Intensity (Unit)				t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*

Facility by Facility Energy Cost (THB/month)

No.	Item	EAF Input	EAF Output	LF Input	LF Output	CCM Input	CCM Output	Ladle heater and ladle transfer Input	Ladle heater and ladle transfer Output	EAF dedusting system Input	EAF dedusting system Output	Oxygen plant Input	Oxygen plant Output
1	Natural gas	0	0	0	0	0	0	0	0	0	0	0	0
2	Town gas	0	0	0	0	0	0	0	0	0	0	0	0
3	Heavy oil	0	0	0	0	0	0	0	0	0	0	0	0
4	Light oil	0	0	0	0	0	0	0	0	0	0	0	0
5	Kerosene	0	0	0	0	0	0	0	0	0	0	0	0
6	LPG	0	0	0	0	0	0	0	0	0	0	0	0
7	EAF coal	0	0	0	0	0	0	0	0	0	0	0	0
8	Steam coal	0	0	0	0	0	0	0	0	0	0	0	0
9	Coke	0	0	0	0	0	0	0	0	0	0	0	0
10	Charcoal	0	0	0	0	0	0	0	0	0	0	0	0
11	SR/DR coal	0	0	0	0	0	0	0	0	0	0	0	0
12	Limestone	0	0	0	0	0	0	0	0	0	0	0	0
13	Burnt lime	0	0	0	0	0	0	0	0	0	0	0	0
14	Crude dolomite	0	0	0	0	0	0	0	0	0	0	0	0
15	Burnt dolomite	0	0	0	0	0	0	0	0	0	0	0	0
16	EAF graphite electrodes	0	0	0	0	0	0	0	0	0	0	0	0
17	Nitrogen	0	0	0	0	0	0	0	0	0	0	0	0
18	Argon	0	0	0	0	0	0	0	0	0	0	0	0
19	Oxygen	0	0	0	0	0	0	0	0	0	0	0	0
20	Electricity	0	0	0	0	0	0	0	0	0	0	0	0
21	Steam	0	0	0	0	0	0	0	0	0	0	0	0
22	Pellets	0	0	0	0	0	0	0	0	0	0	0	0
23	Hot metal	0	0	0	0	0	0	0	0	0	0	0	0
24	Cold iron	0	0	0	0	0	0	0	0	0	0	0	0
25	Gas-based DRI	0	0	0	0	0	0	0	0	0	0	0	0
26	Coal-based DRI	0	0	0	0	0	0	0	0	0	0	0	0
27	Ferro-nickel	0	0	0	0	0	0	0	0	0	0	0	0
28	Ferro-chromium	0	0	0	0	0	0	0	0	0	0	0	0
29	Ferro-molybdenum	0	0	0	0	0	0	0	0	0	0	0	0
30	CO_2 for external use	0	0	0	0	0	0	0	0	0	0	0	0
N	Other emission sources	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0	0	0	0	0	0
Total			THB/month		THB/month		THB/month		THB/month		THB/month		THB/month
Intensity (Unit)			THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*

No.	Item	RHF Input	RHF Output	Rolling mill Input	Rolling mill Output	Cooling water for EAF Input	Cooling water for EAF Output	Cooling water for CCM Input	Cooling water for CCM Output	Cooling water for RHF Input	Cooling water for RHF Output	Others Input	Others Output
1	Natural gas	0	0	0	0	0	0	0	0	0	0	0	0
2	Town gas	0	0	0	0	0	0	0	0	0	0	0	0
3	Heavy oil	0	0	0	0	0	0	0	0	0	0	0	0
4	Light oil	0	0	0	0	0	0	0	0	0	0	0	0
5	Kerosene	0	0	0	0	0	0	0	0	0	0	0	0
6	LPG	0	0	0	0	0	0	0	0	0	0	0	0
7	EAF coal	0	0	0	0	0	0	0	0	0	0	0	0
8	Steam coal	0	0	0	0	0	0	0	0	0	0	0	0
9	Coke	0	0	0	0	0	0	0	0	0	0	0	0
10	Charcoal	0	0	0	0	0	0	0	0	0	0	0	0
11	SR/DR coal	0	0	0	0	0	0	0	0	0	0	0	0
12	Limestone	0	0	0	0	0	0	0	0	0	0	0	0
13	Burnt lime	0	0	0	0	0	0	0	0	0	0	0	0
14	Crude dolomite	0	0	0	0	0	0	0	0	0	0	0	0
15	Burnt dolomite	0	0	0	0	0	0	0	0	0	0	0	0
16	EAF graphite electrodes	0	0	0	0	0	0	0	0	0	0	0	0
17	Nitrogen	0	0	0	0	0	0	0	0	0	0	0	0
18	Argon	0	0	0	0	0	0	0	0	0	0	0	0
19	Oxygen	0	0	0	0	0	0	0	0	0	0	0	0
20	Electricity	0	0	0	0	0	0	0	0	0	0	0	0
21	Steam	0	0	0	0	0	0	0	0	0	0	0	0
22	Pellets	0	0	0	0	0	0	0	0	0	0	0	0
23	Hot metal	0	0	0	0	0	0	0	0	0	0	0	0
24	Cold iron	0	0	0	0	0	0	0	0	0	0	0	0
25	Gas-based DRI	0	0	0	0	0	0	0	0	0	0	0	0
26	Coal-based DRI	0	0	0	0	0	0	0	0	0	0	0	0
27	Ferro-nickel	0	0	0	0	0	0	0	0	0	0	0	0
28	Ferro-chromium	0	0	0	0	0	0	0	0	0	0	0	0
29	Ferro-molybdenum	0	0	0	0	0	0	0	0	0	0	0	0
30	CO_2 for external use	0	0	0	0	0	0	0	0	0	0	0	0
N	Other emission sources	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0	0	0	0	0	0
Total			THB/month		THB/month		THB/month		THB/month		THB/month		THB/month
Intensity (Unit)			THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*

*tcs = ton crude steel

Monthly Data Entry Sheets (06 Jun.)

Additional Instructions for Data Entry
Sheet B contains formulas in the cells that automatically sum the data entries in the 12 monthly data entry sheets (Sheets 01-12)
There are two options for entering data in this document:
Option 1: Manually enter annual data in Sheet B
Option 2: Manually enter monthly data in Sheets 01-12, which is automatically summed into annual data in Sheet B
If you choose Option 1, please delete or overwrite the forumulas in the input cells of Sheet B

Note: This sheet is based on ISO14404 Calculation Sheet for Steel Plant for EAF and/or RHF/Rolling, etc.
1. "Input" means energy/materials purchased by the steelworks from suppliers.
2. "Output" means energy/material sold to the customers outside of steelworks.
3. "stp" means standard temperature and pressure.

Please fill in blue-colored cells only. Gray/pink-colored cells are automatically calculated.

General information

Name of person in charge of this data	*********	
phone	***-****-****	
E mail	***@*******	
Actual monthly EAF production	***	ton-crude steel/month
Monthly purchased semi-finished steel products	***	ton- steel*/month (*semi-finished steel such as bloom, billet, slab etc.)
Actual monthly production	***	ton-product steel/month

Monthly Data Entry

Energy Consumption Source	No.	Item	Unit	Energy cost (THB/Unit)	Total Input (purchased)	Total Output (sold)	EAF Input	EAF Output	LF Input	LF Output	CCM Input	CCM Output	Ladle heater and ladle transfer Input	Ladle heater and ladle transfer Output	EAF dedusting system Input	EAF dedusting system Output	Oxygen plant Input	Oxygen plant Output	RHF Input	RHF Output	Rolling mill Input	Rolling mill Output	Cooling water for EAF Input	Cooling water for EAF Output	Cooling water for CCM Input	Cooling water for CCM Output	Cooling water for RHF Input	Cooling water for RHF Output	Others Input	Others Output
Gas fuel	1	Natural gas	10^3m^3(stp)																											
	2	Town gas	10^3m^3(stp)																											
Liquid fuel	3	Heavy oil	m^3																											
	4	Light oil	m^3																											
	5	Kerosene	m^3																											
	6	LPG	t																											
Solid fuel	7	EAF coal	dry t																											
	8	Steam coal	dry t																											
	9	Coke	dry t																											
	10	Charcoal	dry t																											
	11	SR/DR coal																												
Auxiliary material	12	Limestone	dry t																											
	13	Burnt lime	t																											
	14	Crude dolomite	dry t																											
	15	Burnt dolomite	t																											
	16	EAF graphite electrodes	t																											
	17	Nitrogen	10^3m^3(stp)																											
	18	Argon	10^3m^3(stp)																											
	19	Oxygen	10^3m^3(stp)																											
Energy carriers	20	Electricity	MWh																											
	21	Steam	t																											
Ferrous-containing material	22	Pellets	t																											
	23	Hot metal	t																											
	24	Cold iron	t																											
	25	Gas-based DRI	t																											
	26	Coal-based DRI	t																											
Alloys	27	Ferro-nickel	t																											
	28	Ferro-chromium	t																											
	29	Ferro-molybdenum	t																											
Product and by-product	30	CO_2 for external use	t																											
Others	N	Other emission sources	—																											

Calculation results

Energy Consumption Source	No.	Item	Unit	Total Energy Consumption Direct (GJ/month)	Total Energy Consumption Upstream (GJ/month)	Total Energy Consumption Credit (GJ/month)	Total CO_2 Emission Direct (t-CO_2/month)	Total CO_2 Emission Upstream (t-CO_2/month)	Total CO_2 Emission Credit (t-CO_2/month)	Total Energy Cost Input (t-CO_2/month)	Total Energy Cost Output (t-CO_2/month)
Gas fuel	1	Natural gas	10^3m^3(stp)	0	-	0	0	-	0	0	0
	2	Town gas	10^3m^3(stp)	0	-	0	0	-	0	0	0
Liquid fuel	3	Heavy oil	m^3	0	-	0	0	-	0	0	0
	4	Light oil	m^3	0	-	0	0	-	0	0	0
	5	Kerosene	m^3	0	-	0	0	-	0	0	0
	6	LPG	t	0	-	0	0	-	0	0	0
Solid fuel	7	EAF coal	dry t	0	-	0	0	-	0	0	0
	8	Steam coal	dry t	0	-	0	0	-	0	0	0
	9	Coke	dry t	0	-	0	0	-	0	0	0
	10	Charcoal	dry t	0	-	0	0	-	0	0	0
	11	SR/DR coal		-	-	-	0	-	0	0	0
Auxiliary material	12	Limestone	dry t	-	-	0	0	-	0	0	0
	13	Burnt lime	t	-	-	0	-	-	0	-	0
	14	Crude dolomite	dry t	-	-	0	0	-	0	0	0
	15	Burnt dolomite	t	-	0	0	-	0	0	0	0
	16	EAF graphite electrodes	t	-	-	0	-	-	0	-	0
	17	Nitrogen	10^3m^3(stp)	-	0	0	-	0	0	0	0
	18	Argon	10^3m^3(stp)	-	0	0	-	0	0	0	0
	19	Oxygen	10^3m^3(stp)	-	0	0	-	0	0	0	0
Energy carriers	20	Electricity	MWh	-	0	0	-	0	0	0	0
	21	Steam	t	-	0	0	-	0	0	0	0
Ferrous-containing material	22	Pellets	t	-	-	-	0	-	-	0	0
	23	Hot metal	t	-	-	-	0	-	0	0	0
	24	Cold iron	t	-	-	-	0	-	0	0	0
	25	Gas-based DRI	t	-	-	-	0	-	0	0	0
	26	Coal-based DRI	t	-	-	-	0	-	0	0	0
Alloys	27	Ferro-nickel	t	-	-	-	0	-	0	0	0
	28	Ferro-chromium	t	-	-	-	0	-	0	0	0
	29	Ferro-molybdenum	t	-	-	-	0	-	0	0	0
Product and by-product	30	CO_2 for external use	t	-	-	-	0	-	0	0	0
Others	N	Other emission sources	—	0	0	0	0	0	0	0	0
Subtotal				0	0	0	0	0	0	0	0
			Total			GJ/month			t-CO_2/month		GJ/month
			Intensity (Unit)			GJ/tcs*			t-CO_2/tcs*		THB/tcs*

Facility by Facility Energy Consumption (GJ/month)

No. / Item	EAF Direct	EAF Upstream	EAF Credit	LF Direct	LF Upstream	LF Credit	CCM Direct	CCM Upstream	CCM Credit	Ladle heater and ladle transfer Direct	Ladle heater and ladle transfer Upstream	Ladle heater and ladle transfer Credit	EAF dedusting system Direct	EAF dedusting system Upstream	EAF dedusting system Credit	Oxygen plant Direct	Oxygen plant Upstream	Oxygen plant Credit
1 Natural gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
2 Town gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
3 Heavy oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
4 Light oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
5 Kerosene	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
6 LPG	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
7 EAF coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
8 Steam coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
9 Coke	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
10 Charcoal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
11 SR/DR coal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12 Limestone	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
13 Burnt lime	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
14 Crude dolomite	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
15 Burnt dolomite	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
16 EAF graphite electrodes	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
17 Nitrogen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
18 Argon	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
19 Oxygen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
20 Electricity	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
21 Steam	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
22 Pellets	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23 Hot metal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24 Cold iron	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25 Gas-based DRI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26 Coal-based DRI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27 Ferro-nickel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28 Ferro-chromium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29 Ferro-molybdenum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30 CO_2 for external use	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N Other emission sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month
Intensity (Unit)			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*

No. / Item	RHF Direct	RHF Upstream	RHF Credit	Rolling mill Direct	Rolling mill Upstream	Rolling mill Credit	Cooling water for EAF Direct	Cooling water for EAF Upstream	Cooling water for EAF Credit	Cooling water for CCM Direct	Cooling water for CCM Upstream	Cooling water for CCM Credit	Cooling water for RHF Direct	Cooling water for RHF Upstream	Cooling water for RHF Credit	Others Direct	Others Upstream	Others Credit
1 Natural gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
2 Town gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
3 Heavy oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
4 Light oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
5 Kerosene	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
6 LPG	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
7 EAF coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
8 Steam coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
9 Coke	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
10 Charcoal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
11 SR/DR coal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12 Limestone	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
13 Burnt lime	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
14 Crude dolomite	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
15 Burnt dolomite	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
16 EAF graphite electrodes	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
17 Nitrogen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
18 Argon	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
19 Oxygen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
20 Electricity	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
21 Steam	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
22 Pellets	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23 Hot metal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24 Cold iron	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25 Gas-based DRI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26 Coal-based DRI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27 Ferro-nickel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28 Ferro-chromium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29 Ferro-molybdenum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30 CO_2 for external use	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N Other emission sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month
Intensity (Unit)			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*

Facility by Facility CO_2 Emission (t-CO_2/month)

No. / Item	EAF Direct	EAF Upstream	EAF Credit	LF Direct	LF Upstream	LF Credit	CCM Direct	CCM Upstream	CCM Credit	Ladle heater and ladle transfer Direct	Ladle heater and ladle transfer Upstream	Ladle heater and ladle transfer Credit	EAF dedusting system Direct	EAF dedusting system Upstream	EAF dedusting system Credit	Oxygen plant Direct	Oxygen plant Upstream	Oxygen plant Credit
1 Natural gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
2 Town gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
3 Heavy oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
4 Light oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
5 Kerosene	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
6 LPG	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
7 EAF coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
8 Steam coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
9 Coke	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
10 Charcoal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
11 SR/DR coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
12 Limestone	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
13 Burnt lime	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
14 Crude dolomite	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
15 Burnt dolomite	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
16 EAF graphite electrodes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Nitrogen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
18 Argon	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
19 Oxygen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
20 Electricity	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
21 Steam	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
22 Pellets	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-
23 Hot metal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
24 Cold iron	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
25 Gas-based DRI	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
26 Coal-based DRI	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
27 Ferro-nickel	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
28 Ferro-chromium	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
29 Ferro-molybdenum	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
30 CO_2 for external use	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
N Other emission sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month
Intensity (Unit)			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*

No. / Item	RHF Direct	RHF Upstream	RHF Credit	Rolling mill Direct	Rolling mill Upstream	Rolling mill Credit	Cooling water for EAF Direct	Cooling water for EAF Upstream	Cooling water for EAF Credit	Cooling water for CCM Direct	Cooling water for CCM Upstream	Cooling water for CCM Credit	Cooling water for RHF Direct	Cooling water for RHF Upstream	Cooling water for RHF Credit	Others Direct	Others Upstream	Others Credit
1 Natural gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
2 Town gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
3 Heavy oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
4 Light oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
5 Kerosene	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
6 LPG	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
7 EAF coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
8 Steam coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
9 Coke	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
10 Charcoal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
11 SR/DR coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
12 Limestone	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
13 Burnt lime	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
14 Crude dolomite	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
15 Burnt dolomite	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
16 EAF graphite electrodes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Nitrogen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
18 Argon	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
19 Oxygen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
20 Electricity	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
21 Steam	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
22 Pellets	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-
23 Hot metal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
24 Cold iron	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
25 Gas-based DRI	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
26 Coal-based DRI	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
27 Ferro-nickel	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
28 Ferro-chromium	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
29 Ferro-molybdenum	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
30 CO_2 for external use	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
N Other emission sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month
Intensity (Unit)			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*

Facility by Facility Energy Cost (THB/month)

No. / Item	EAF Input	EAF Output	LF Input	LF Output	CCM Input	CCM Output	Ladle heater and ladle transfer Input	Ladle heater and ladle transfer Output	EAF dedusting system Input	EAF dedusting system Output	Oxygen plant Input	Oxygen plant Output
1 Natural gas	0	0	0	0	0	0	0	0	0	0	0	0
2 Town gas	0	0	0	0	0	0	0	0	0	0	0	0
3 Heavy oil	0	0	0	0	0	0	0	0	0	0	0	0
4 Light oil	0	0	0	0	0	0	0	0	0	0	0	0
5 Kerosene	0	0	0	0	0	0	0	0	0	0	0	0
6 LPG	0	0	0	0	0	0	0	0	0	0	0	0
7 EAF coal	0	0	0	0	0	0	0	0	0	0	0	0
8 Steam coal	0	0	0	0	0	0	0	0	0	0	0	0
9 Coke	0	0	0	0	0	0	0	0	0	0	0	0
10 Charcoal	0	0	0	0	0	0	0	0	0	0	0	0
11 SR/DR coal	0	0	0	0	0	0	0	0	0	0	0	0
12 Limestone	0	0	0	0	0	0	0	0	0	0	0	0
13 Burnt lime	0	0	0	0	0	0	0	0	0	0	0	0
14 Crude dolomite	0	0	0	0	0	0	0	0	0	0	0	0
15 Burnt dolomite	0	0	0	0	0	0	0	0	0	0	0	0
16 EAF graphite electrodes	0	0	0	0	0	0	0	0	0	0	0	0
17 Nitrogen	0	0	0	0	0	0	0	0	0	0	0	0
18 Argon	0	0	0	0	0	0	0	0	0	0	0	0
19 Oxygen	0	0	0	0	0	0	0	0	0	0	0	0
20 Electricity	0	0	0	0	0	0	0	0	0	0	0	0
21 Steam	0	0	0	0	0	0	0	0	0	0	0	0
22 Pellets	0	0	0	0	0	0	0	0	0	0	0	0
23 Hot metal	0	0	0	0	0	0	0	0	0	0	0	0
24 Cold iron	0	0	0	0	0	0	0	0	0	0	0	0
25 Gas-based DRI	0	0	0	0	0	0	0	0	0	0	0	0
26 Coal-based DRI	0	0	0	0	0	0	0	0	0	0	0	0
27 Ferro-nickel	0	0	0	0	0	0	0	0	0	0	0	0
28 Ferro-chromium	0	0	0	0	0	0	0	0	0	0	0	0
29 Ferro-molybdenum	0	0	0	0	0	0	0	0	0	0	0	0
30 CO_2 for external use	0	0	0	0	0	0	0	0	0	0	0	0
N Other emission sources	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	0	0	0	0	0	0	0	0	0	0	0	0
Total		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month
Intensity (Unit)		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*

No. / Item	RHF Input	RHF Output	Rolling mill Input	Rolling mill Output	Cooling water for EAF Input	Cooling water for EAF Output	Cooling water for CCM Input	Cooling water for CCM Output	Cooling water for RHF Input	Cooling water for RHF Output	Others Input	Others Output
1 Natural gas	0	0	0	0	0	0	0	0	0	0	0	0
2 Town gas	0	0	0	0	0	0	0	0	0	0	0	0
3 Heavy oil	0	0	0	0	0	0	0	0	0	0	0	0
4 Light oil	0	0	0	0	0	0	0	0	0	0	0	0
5 Kerosene	0	0	0	0	0	0	0	0	0	0	0	0
6 LPG	0	0	0	0	0	0	0	0	0	0	0	0
7 EAF coal	0	0	0	0	0	0	0	0	0	0	0	0
8 Steam coal	0	0	0	0	0	0	0	0	0	0	0	0
9 Coke	0	0	0	0	0	0	0	0	0	0	0	0
10 Charcoal	0	0	0	0	0	0	0	0	0	0	0	0
11 SR/DR coal	0	0	0	0	0	0	0	0	0	0	0	0
12 Limestone	0	0	0	0	0	0	0	0	0	0	0	0
13 Burnt lime	0	0	0	0	0	0	0	0	0	0	0	0
14 Crude dolomite	0	0	0	0	0	0	0	0	0	0	0	0
15 Burnt dolomite	0	0	0	0	0	0	0	0	0	0	0	0
16 EAF graphite electrodes	0	0	0	0	0	0	0	0	0	0	0	0
17 Nitrogen	0	0	0	0	0	0	0	0	0	0	0	0
18 Argon	0	0	0	0	0	0	0	0	0	0	0	0
19 Oxygen	0	0	0	0	0	0	0	0	0	0	0	0
20 Electricity	0	0	0	0	0	0	0	0	0	0	0	0
21 Steam	0	0	0	0	0	0	0	0	0	0	0	0
22 Pellets	0	0	0	0	0	0	0	0	0	0	0	0
23 Hot metal	0	0	0	0	0	0	0	0	0	0	0	0
24 Cold iron	0	0	0	0	0	0	0	0	0	0	0	0
25 Gas-based DRI	0	0	0	0	0	0	0	0	0	0	0	0
26 Coal-based DRI	0	0	0	0	0	0	0	0	0	0	0	0
27 Ferro-nickel	0	0	0	0	0	0	0	0	0	0	0	0
28 Ferro-chromium	0	0	0	0	0	0	0	0	0	0	0	0
29 Ferro-molybdenum	0	0	0	0	0	0	0	0	0	0	0	0
30 CO_2 for external use	0	0	0	0	0	0	0	0	0	0	0	0
N Other emission sources	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	0	0	0	0	0	0	0	0	0	0	0	0
Total		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month
Intensity (Unit)		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*

*tcs = ton crude steel

Monthly Data Entry Sheets (07 Jul.)

Additional Instructions for Data Entry
Sheet B contains formulas in the cells that automatically sum the data entries in the 12 monthly data entry sheets (Sheets 01-12)
There are two options for entering data in this document:
Option 1: Manually enter annual data in Sheet B
Option 2: Manually enter monthly data in Sheets 01-12, which is automatically summed into annual data in Sheet B
If you choose Option 1, please delete or overwrite the forumulas in the input cells of Sheet B

Note: This sheet is based on ISO14404 Calculation Sheet for Steel Plant for EAF and/or RHF/Rolling, etc.
1. "Input" means energy/materials purchased by the steelworks from suppliers.
2. "Output" means energy/material sold to the customers outside of steelworks.
3. "stp" means standard temperature and pressure.

Please fill in blue-colored cells only. Gray/pink-colored cells are automatically calculated.

General information

Name of person in charge of this data	*********	
phone	***-****-****	
E mail	***@*******	
Actual monthly EAF production	***	ton-crude steel/month
Monthly purchased semi-finished steel products	***	ton- steel*/month (*semi-finished steel such as bloom, billet, slab etc.)
Actual monthly production	***	ton-product steel/month

Monthly Data Entry

Energy Consumption Source	No.	Source	Unit	Energy cost THB/Unit	Total Input (purchased)	Total Output (sold)	EAF Input	EAF Output	LF Input	LF Output	CCM Input	CCM Output	Ladle heater and ladle transfer Input	Ladle heater and ladle transfer Output	EAF dedusting system Input	EAF dedusting system Output	Oxygen plant Input	Oxygen plant Output	RHF Input	RHF Output	Rolling mill Input	Rolling mill Output	Cooling water for EAF Input	Cooling water for EAF Output	Cooling water for CCM Input	Cooling water for CCM Output	Cooling water for RHF Input	Cooling water for RHF Output	Others Input	Others Output
Gas fuel	1	Natural gas	10^3m^3(stp)																											
	2	Town gas	10^3m^3(stp)																											
Liquid fuel	3	Heavy oil	m^3																											
	4	Light oil	m^3																											
	5	Kerosene	m^3																											
	6	LPG	t																											
Solid fuel	7	EAF coal	dry t																											
	8	Steam coal	dry t																											
	9	Coke	dry t																											
	10	Charcoal	dry t																											
	11	SR/DR coal																												
Auxiliary material	12	Limestone	dry t																											
	13	Burnt lime	t																											
	14	Crude dolomite	dry t																											
	15	Burnt dolomite	t																											
	16	EAF graphite electrodes	t																											
	17	Nitrogen	10^3m^3(stp)																											
	18	Argon	10^3m^3(stp)																											
	19	Oxygen	10^3m^3(stp)																											
Energy carriers	20	Electricity	MWh																											
	21	Steam	t																											
Ferrous-containing material	22	Pellets	t																											
	23	Hot metal	t																											
	24	Cold iron	t																											
	25	Gas-based DRI	t																											
	26	Coal-based DRI	t																											
Alloys	27	Ferro-nickel	t																											
	28	Ferro-chromium	t																											
	29	Ferro-molybdenum	t																											
Product and by-product	30	CO_2 for external use	t																											
Others	N	Other emission sources	—																											

Calculation results

Energy Consumption Source	No.	Source	Unit	Total Energy Consumption Direct	Total Energy Consumption Upstream	Total Energy Consumption Credit	Total CO_2 Emission Direct	Total CO_2 Emission Upstream	Total CO_2 Emission Credit	Total Energy Cost Input	Total Energy Cost Output
				GJ/month			t-CO_2/month			t-CO_2/month	
Gas fuel	1	Natural gas	10^3m^3(stp)	0	-	0	0	-	0	0	0
	2	Town gas	10^3m^3(stp)	0	-	0	0	-	0	0	0
Liquid fuel	3	Heavy oil	m^3	0	-	0	0	-	0	0	0
	4	Light oil	m^3	0	-	0	0	-	0	0	0
	5	Kerosene	m^3	0	-	0	0	-	0	0	0
	6	LPG	t	0	-	0	0	-	0	0	0
Solid fuel	7	EAF coal	dry t	0	-	0	0	-	0	0	0
	8	Steam coal	dry t	0	-	0	0	-	0	0	0
	9	Coke	dry t	0	-	0	0	-	0	0	0
	10	Charcoal	dry t	0	-	0	0	-	0	0	0
	11	SR/DR coal		-	-	-	0	-	0	0	0
Auxiliary material	12	Limestone	dry t	-	-	0	0	-	0	0	0
	13	Burnt lime	t	-	-	0	-	-	0	-	0
	14	Crude dolomite	dry t	-	-	0	0	-	0	0	0
	15	Burnt dolomite	t	-	0	0	-	0	0	0	0
	16	EAF graphite electrodes	t	-	-	0	0	0	0	0	0
	17	Nitrogen	10^3m^3(stp)	-	0	0	-	0	0	0	0
	18	Argon	10^3m^3(stp)	-	0	0	-	0	0	0	0
	19	Oxygen	10^3m^3(stp)	-	0	0	-	0	0	0	0
Energy carriers	20	Electricity	MWh	-	0	0	-	0	0	0	0
	21	Steam	t	-	0	0	-	0	0	0	0
Ferrous-containing material	22	Pellets	t	-	-	-	0	-	-	0	0
	23	Hot metal	t	-	-	-	0	-	0	0	0
	24	Cold iron	t	-	-	-	0	-	0	0	0
	25	Gas-based DRI	t	-	-	-	0	-	0	0	0
	26	Coal-based DRI	t	-	-	-	0	-	0	0	0
Alloys	27	Ferro-nickel	t	-	-	-	0	-	0	0	0
	28	Ferro-chromium	t	-	-	-	0	-	0	0	0
	29	Ferro-molybdenum	t	-	-	-	0	-	0	0	0
Product and by-product	30	CO_2 for external use	t	-	-	-	0	-	0	0	0
Others	N	Other emission sources	—	0	0	0	0	0	0	0	0
Subtotal				0	0	0	0	0	0	0	0
			Total			GJ/month			t-CO_2/month		GJ/month
			Intensity (Unit)			GJ/tcs*			t-CO_2/tcs*		THB/tcs*

Facility by Facility Energy Consumption

No.	Source	EAF Direct	EAF Upstream	EAF Credit	LF Direct	LF Upstream	LF Credit	CCM Direct	CCM Upstream	CCM Credit	Ladle heater and ladle transfer Direct	Ladle heater and ladle transfer Upstream	Ladle heater and ladle transfer Credit	EAF dedusting system Direct	EAF dedusting system Upstream	EAF dedusting system Credit	Oxygen plant Direct	Oxygen plant Upstream	Oxygen plant Credit
		GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month		
1	Natural gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
2	Town gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
3	Heavy oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
4	Light oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
5	Kerosene	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
6	LPG	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
7	EAF coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
8	Steam coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
9	Coke	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
10	Charcoal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
11	SR/DR coal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	Limestone	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
13	Burnt lime	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
14	Crude dolomite	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
15	Burnt dolomite	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
16	EAF graphite electrodes	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
17	Nitrogen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
18	Argon	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
19	Oxygen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
20	Electricity	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
21	Steam	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
22	Pellets	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	Hot metal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	Cold iron	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	Gas-based DRI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	Coal-based DRI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	Ferro-nickel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	Ferro-chromium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	Ferro-molybdenum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	CO_2 for external use	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N	Other emission sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total				GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month
Intensity (Unit)				GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*

No.	Source	RHF Direct	RHF Upstream	RHF Credit	Rolling mill Direct	Rolling mill Upstream	Rolling mill Credit	Cooling water for EAF Direct	Cooling water for EAF Upstream	Cooling water for EAF Credit	Cooling water for CCM Direct	Cooling water for CCM Upstream	Cooling water for CCM Credit	Cooling water for RHF Direct	Cooling water for RHF Upstream	Cooling water for RHF Credit	Others Direct	Others Upstream	Others Credit
		GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month		
1	Natural gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
2	Town gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
3	Heavy oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
4	Light oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
5	Kerosene	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
6	LPG	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
7	EAF coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
8	Steam coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
9	Coke	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
10	Charcoal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
11	SR/DR coal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	Limestone	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
13	Burnt lime	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
14	Crude dolomite	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
15	Burnt dolomite	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
16	EAF graphite electrodes	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
17	Nitrogen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
18	Argon	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
19	Oxygen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
20	Electricity	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
21	Steam	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
22	Pellets	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	Hot metal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	Cold iron	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	Gas-based DRI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	Coal-based DRI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	Ferro-nickel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	Ferro-chromium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	Ferro-molybdenum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	CO_2 for external use	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N	Other emission sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total				GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month
Intensity (Unit)				GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*

Facility by Facility CO_2 Emission

No.	Source	EAF Direct	EAF Upstream	EAF Credit	LF Direct	LF Upstream	LF Credit	CCM Direct	CCM Upstream	CCM Credit	Ladle heater and ladle transfer Direct	Ladle heater and ladle transfer Upstream	Ladle heater and ladle transfer Credit	EAF dedusting system Direct	EAF dedusting system Upstream	EAF dedusting system Credit	Oxygen plant Direct	Oxygen plant Upstream	Oxygen plant Credit
		t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month		
1	Natural gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
2	Town gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
3	Heavy oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
4	Light oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
5	Kerosene	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
6	LPG	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
7	EAF coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
8	Steam coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
9	Coke	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
10	Charcoal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
11	SR/DR coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
12	Limestone	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
13	Burnt lime	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
14	Crude dolomite	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
15	Burnt dolomite	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
16	EAF graphite electrodes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	Nitrogen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
18	Argon	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
19	Oxygen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
20	Electricity	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
21	Steam	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
22	Pellets	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-
23	Hot metal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
24	Cold iron	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
25	Gas-based DRI	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
26	Coal-based DRI	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
27	Ferro-nickel	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
28	Ferro-chromium	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
29	Ferro-molybdenum	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
30	CO_2 for external use	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
N	Other emission sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total				t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month
Intensity (Unit)				t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*

No.	Source	RHF Direct	RHF Upstream	RHF Credit	Rolling mill Direct	Rolling mill Upstream	Rolling mill Credit	Cooling water for EAF Direct	Cooling water for EAF Upstream	Cooling water for EAF Credit	Cooling water for CCM Direct	Cooling water for CCM Upstream	Cooling water for CCM Credit	Cooling water for RHF Direct	Cooling water for RHF Upstream	Cooling water for RHF Credit	Others Direct	Others Upstream	Others Credit
		t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month		
1	Natural gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
2	Town gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
3	Heavy oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
4	Light oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
5	Kerosene	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
6	LPG	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
7	EAF coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
8	Steam coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
9	Coke	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
10	Charcoal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
11	SR/DR coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
12	Limestone	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
13	Burnt lime	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
14	Crude dolomite	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
15	Burnt dolomite	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
16	EAF graphite electrodes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	Nitrogen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
18	Argon	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
19	Oxygen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
20	Electricity	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
21	Steam	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
22	Pellets	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-
23	Hot metal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
24	Cold iron	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
25	Gas-based DRI	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
26	Coal-based DRI	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
27	Ferro-nickel	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
28	Ferro-chromium	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
29	Ferro-molybdenum	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
30	CO_2 for external use	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
N	Other emission sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total				t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month
Intensity (Unit)				t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*

Facility by Facility Energy Cost

No.	Source	EAF Input	EAF Output	LF Input	LF Output	CCM Input	CCM Output	Ladle heater and ladle transfer Input	Ladle heater and ladle transfer Output	EAF dedusting system Input	EAF dedusting system Output	Oxygen plant Input	Oxygen plant Output	RHF Input	RHF Output	Rolling mill Input	Rolling mill Output	Cooling water for EAF Input	Cooling water for EAF Output	Cooling water for CCM Input	Cooling water for CCM Output	Cooling water for RHF Input	Cooling water for RHF Output	Others Input	Others Output
		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month	
1	Natural gas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	Town gas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Heavy oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Light oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Kerosene	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	LPG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	EAF coal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Steam coal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Coke	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Charcoal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	SR/DR coal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Limestone	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	Burnt lime	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Crude dolomite	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	Burnt dolomite	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	EAF graphite electrodes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	Nitrogen	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	Argon	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	Oxygen	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Electricity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	Steam	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	Pellets	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	Hot metal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	Cold iron	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	Gas-based DRI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	Coal-based DRI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	Ferro-nickel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	Ferro-chromium	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	Ferro-molybdenum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	CO_2 for external use	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N	Other emission sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total			THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month
Intensity (Unit)			THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*

*tcs = ton crude steel

Monthly Data Entry Sheets (08 Aug.)

Additional Instructions for Data Entry
Sheet B contains formulas in the cells that automatically sum the data entries in the 12 monthly data entry sheets (Sheets 01-12)
There are two options for entering data in this document:
Option 1: Manually enter annual data in Sheet B
Option 2: Manually enter monthly data in Sheets 01-12, which is automatically summed into annual data in Sheet B
If you choose Option 1, please delete or overwrite the forumulas in the input cells of Sheet B

Note: This sheet is based on ISO14404 Calculation Sheet for Steel Plant for EAF and/or RHF/Rolling, etc.
1. "Input" means energy/materials purchased by the steelworks from suppliers.
2. "Output" means energy/material sold to the customers outside of steelworks.
3. "stp" means standard temperature and pressure.

Please fill in blue-colored cells only. Gray/pink-colored cells are automatically calculated.

General information

Name of person in charge of this data	*********	
phone	***-****-****	
E mail	***@*******	
Actual monthly EAF production	***	ton-crude steel/month
Monthly purchased semi-finished steel products	***	ton- steel*/month (*semi-finished steel such as bloom, billet, slab etc.)
Actual monthly production	***	ton-product steel/month

Monthly Data Entry

Energy Consumption Source			Unit	Energy cost	Total		Facility by Facility: EAF		LF		CCM		Ladle heater and ladle transfer		EAF dedusting system		Oxygen plant		RHF		Rolling mill		Cooling water for EAF		Cooling water for CCM		Cooling water for RHF		Others	
				THB/Unit	Input (purchased)	Output (sold)	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output
Gas fuel	1	Natural gas	10^3m^3(stp)																											
	2	Town gas	10^3m^3(stp)																											
Liquid fuel	3	Heavy oil	m^3																											
	4	Light oil	m^3																											
	5	Kerosene	m^3																											
	6	LPG	t																											
Solid fuel	7	EAF coal	dry t																											
	8	Steam coal	dry t																											
	9	Coke	dry t																											
	10	Charcoal	dry t																											
	11	SR/DR coal																												
Auxiliary material	12	Limestone	dry t																											
	13	Burnt lime	t																											
	14	Crude dolomite	dry t																											
	15	Burnt dolomite	t																											
	16	EAF graphite electrodes	t																											
	17	Nitrogen	10^3m^3(stp)																											
	18	Argon	10^3m^3(stp)																											
	19	Oxygen	10^3m^3(stp)																											
Energy carriers	20	Electricity	MWh																											
	21	Steam	t																											
Ferrous-containing material	22	Pellets	t																											
	23	Hot metal	t																											
	24	Cold iron	t																											
	25	Gas-based DRI	t																											
	26	Coal-based DRI	t																											
Alloys	27	Ferro-nickel	t																											
	28	Ferro-chromium	t																											
	29	Ferro-molybdenum	t																											
Product and by-product	30	CO_2 for external use	t																											
Others	N	Other emission sources	—																											

Calculation results

Energy Consumption Source			Unit	Total Energy Consumption (GJ/month)			Total CO_2 Emission ($t\text{-}CO_2$/month)			Total Energy Cost ($t\text{-}CO_2$/month)	
				Direct	Upstream	Credit	Direct	Upstream	Credit	Input	Output
Gas fuel	1	Natural gas	10^3m^3(stp)	0	-	0	0	-	0	0	0
	2	Town gas	10^3m^3(stp)	0	-	0	0	-	0	0	0
Liquid fuel	3	Heavy oil	m^3	0	-	0	0	-	0	0	0
	4	Light oil	m^3	0	-	0	0	-	0	0	0
	5	Kerosene	m^3	0	-	0	0	-	0	0	0
	6	LPG	t	0	-	0	0	-	0	0	0
Solid fuel	7	EAF coal	dry t	0	-	0	0	-	0	0	0
	8	Steam coal	dry t	0	-	0	0	-	0	0	0
	9	Coke	dry t	0	-	0	0	-	0	0	0
	10	Charcoal	dry t	0	-	0	0	-	0	0	0
	11	SR/DR coal		-	-	-	0	-	0	0	0
Auxiliary material	12	Limestone	dry t	-	-	0	0	-	0	0	0
	13	Burnt lime	t	-	-	0	-	-	0	-	0
	14	Crude dolomite	dry t	-	-	0	0	-	0	0	0
	15	Burnt dolomite	t	-	0	0	-	0	0	0	0
	16	EAF graphite electrodes	t	-	-	0	-	-	0	-	0
	17	Nitrogen	10^3m^3(stp)	-	0	0	-	0	0	0	0
	18	Argon	10^3m^3(stp)	-	0	0	-	0	0	0	0
	19	Oxygen	10^3m^3(stp)	-	0	0	-	0	0	0	0
Energy carriers	20	Electricity	MWh	-	0	0	-	0	0	0	0
	21	Steam	t	-	0	0	-	0	0	0	0
Ferrous-containing material	22	Pellets	t	-	-	-	0	-	-	0	0
	23	Hot metal	t	-	-	-	0	-	0	0	0
	24	Cold iron	t	-	-	-	0	-	0	0	0
	25	Gas-based DRI	t	-	-	-	0	-	0	0	0
	26	Coal-based DRI	t	-	-	-	0	-	0	0	0
Alloys	27	Ferro-nickel	t	-	-	-	0	-	0	0	0
	28	Ferro-chromium	t	-	-	-	0	-	0	0	0
	29	Ferro-molybdenum	t	-	-	-	0	-	0	0	0
Product and by-product	30	CO_2 for external use	t	-	-	-	0	-	0	0	0
Others	N	Other emission sources	—	0	0	0	0	0	0	0	0
Subtotal				0	0	0	0	0	0	0	0
			Total			GJ/month			$t\text{-}CO_2$/month		GJ/month
			Intensity (Unit)			GJ/tcs*			$t\text{-}CO_2$/tcs*		THB/tcs*

Facility by Facility Energy Consumption (GJ/month)

No.	Source	EAF Direct	EAF Upstream	EAF Credit	LF Direct	LF Upstream	LF Credit	CCM Direct	CCM Upstream	CCM Credit	Ladle heater and ladle transfer Direct	Upstream	Credit	EAF dedusting system Direct	Upstream	Credit	Oxygen plant Direct	Upstream	Credit	RHF Direct	Upstream	Credit	Rolling mill Direct	Upstream	Credit	Cooling water for EAF Direct	Upstream	Credit	Cooling water for CCM Direct	Upstream	Credit	Cooling water for RHF Direct	Upstream	Credit	Others Direct	Upstream	Credit
1	Natural gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
2	Town gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
3	Heavy oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
4	Light oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
5	Kerosene	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
6	LPG	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
7	EAF coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
8	Steam coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
9	Coke	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
10	Charcoal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
11	SR/DR coal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	Limestone	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
13	Burnt lime	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
14	Crude dolomite	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
15	Burnt dolomite	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
16	EAF graphite electrodes	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
17	Nitrogen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
18	Argon	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
19	Oxygen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
20	Electricity	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
21	Steam	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
22	Pellets	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	Hot metal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	Cold iron	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	Gas-based DRI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	Coal-based DRI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	Ferro-nickel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	Ferro-chromium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	Ferro-molybdenum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	CO_2 for external use	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N	Other emission sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total				GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month
Intensity (Unit)				GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*

Facility by Facility CO_2 Emission ($t\text{-}CO_2$/month)

No.	Source	EAF Direct	EAF Upstream	EAF Credit	LF Direct	LF Upstream	LF Credit	CCM Direct	CCM Upstream	CCM Credit	Ladle heater and ladle transfer Direct	Upstream	Credit	EAF dedusting system Direct	Upstream	Credit	Oxygen plant Direct	Upstream	Credit	RHF Direct	Upstream	Credit	Rolling mill Direct	Upstream	Credit	Cooling water for EAF Direct	Upstream	Credit	Cooling water for CCM Direct	Upstream	Credit	Cooling water for RHF Direct	Upstream	Credit	Others Direct	Upstream	Credit
1	Natural gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
2	Town gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
3	Heavy oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
4	Light oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
5	Kerosene	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
6	LPG	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
7	EAF coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
8	Steam coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
9	Coke	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
10	Charcoal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
11	SR/DR coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
12	Limestone	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
13	Burnt lime	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
14	Crude dolomite	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
15	Burnt dolomite	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
16	EAF graphite electrodes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	Nitrogen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
18	Argon	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
19	Oxygen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
20	Electricity	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
21	Steam	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
22	Pellets	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-
23	Hot metal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
24	Cold iron	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
25	Gas-based DRI	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
26	Coal-based DRI	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
27	Ferro-nickel	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
28	Ferro-chromium	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
29	Ferro-molybdenum	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
30	CO_2 for external use	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
N	Other emission sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total				$t\text{-}CO_2$/month			$t\text{-}CO_2$/month			$t\text{-}CO_2$/month			$t\text{-}CO_2$/month			$t\text{-}CO_2$/month			$t\text{-}CO_2$/month			$t\text{-}CO_2$/month			$t\text{-}CO_2$/month			$t\text{-}CO_2$/month			$t\text{-}CO_2$/month			$t\text{-}CO_2$/month			$t\text{-}CO_2$/month
Intensity (Unit)				$t\text{-}CO_2$/tcs*			$t\text{-}CO_2$/tcs*			$t\text{-}CO_2$/tcs*			$t\text{-}CO_2$/tcs*			$t\text{-}CO_2$/tcs*			$t\text{-}CO_2$/tcs*			$t\text{-}CO_2$/tcs*			$t\text{-}CO_2$/tcs*			$t\text{-}CO_2$/tcs*			$t\text{-}CO_2$/tcs*			$t\text{-}CO_2$/tcs*			$t\text{-}CO_2$/tcs*

Facility by Facility Energy Cost (THB/month)

No.	Source	EAF Input	EAF Output	LF Input	LF Output	CCM Input	CCM Output	Ladle heater and ladle transfer Input	Output	EAF dedusting system Input	Output	Oxygen plant Input	Output	RHF Input	Output	Rolling mill Input	Output	Cooling water for EAF Input	Output	Cooling water for CCM Input	Output	Cooling water for RHF Input	Output	Others Input	Output
1	Natural gas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	Town gas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Heavy oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Light oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Kerosene	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	LPG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	EAF coal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Steam coal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Coke	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Charcoal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	SR/DR coal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Limestone	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	Burnt lime	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Crude dolomite	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	Burnt dolomite	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	EAF graphite electrodes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	Nitrogen	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	Argon	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	Oxygen	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Electricity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	Steam	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	Pellets	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	Hot metal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	Cold iron	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	Gas-based DRI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	Coal-based DRI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	Ferro-nickel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	Ferro-chromium	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	Ferro-molybdenum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	CO_2 for external use	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N	Other emission sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total			THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month
Intensity (Unit)			THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*

*tcs = ton crude steel

Monthly Data Entry Sheets (09 Sep.)

Additional Instructions for Data Entry
Sheet B contains formulas in the cells that automatically sum the data entries in the 12 monthly data entry sheets (Sheets 01-12)
There are two options for entering data in this document:
Option 1: Manually enter annual data in Sheet B
Option 2: Manually enter monthly data in Sheets 01-12, which is automatically summed into annual data in Sheet B
If you choose Option 1, please delete or overwrite the forumulas in the input cells of Sheet B

Note: This sheet is based on ISO14404 Calculation Sheet for Steel Plant for EAF and/or RHF/Rolling, etc.
1. "Input" means energy/materials purchased by the steelworks from suppliers.
2. "Output" means energy/material sold to the customers outside of steelworks.
3. "stp" means standard temperature and pressure.

Please fill in blue-colored cells only. Gray/pink-colored cells are automatically calculated.

General information

Name of person in charge of this data	*********	
phone	***-****-****	
E mail	***@*******	
Actual monthly EAF production	***	ton-crude steel/month
Monthly purchased semi-finished steel products	***	ton- steel*/month (*semi-finished steel such as bloom, billet, slab etc.)
Actual monthly production	***	ton-product steel/month

Monthly Data Entry

Energy Consumption Source	No.	Item	Unit	Energy cost THB/Unit	Total Input (purchased)	Total Output (sold)	EAF Input	EAF Output	LF Input	LF Output	CCM Input	CCM Output	Ladle heater and ladle transfer Input	Ladle heater and ladle transfer Output	EAF dedusting system Input	EAF dedusting system Output	Oxygen plant Input	Oxygen plant Output	RHF Input	RHF Output	Rolling mill Input	Rolling mill Output	Cooling water for EAF Input	Cooling water for EAF Output	Cooling water for CCM Input	Cooling water for CCM Output	Cooling water for RHF Input	Cooling water for RHF Output	Others Input	Others Output
Gas fuel	1	Natural gas	10^3m^3(stp)																											
	2	Town gas	10^3m^3(stp)																											
Liquid fuel	3	Heavy oil	m^3																											
	4	Light oil	m^3																											
	5	Kerosene	m^3																											
	6	LPG	t																											
Solid fuel	7	EAF coal	dry t																											
	8	Steam coal	dry t																											
	9	Coke	dry t																											
	10	Charcoal	dry t																											
	11	SR/DR coal																												
Auxiliary material	12	Limestone	dry t																											
	13	Burnt lime	t																											
	14	Crude dolomite	dry t																											
	15	Burnt dolomite	t																											
	16	EAF graphite electrodes	t																											
	17	Nitrogen	10^3m^3(stp)																											
	18	Argon	10^3m^3(stp)																											
	19	Oxygen	10^3m^3(stp)																											
Energy carriers	20	Electricity	MWh																											
	21	Steam	t																											
Ferrous-containing material	22	Pellets	t																											
	23	Hot metal	t																											
	24	Cold iron	t																											
	25	Gas-based DRI	t																											
	26	Coal-based DRI	t																											
Alloys	27	Ferro-nickel	t																											
	28	Ferro-chromium	t																											
	29	Ferro-molybdenum	t																											
Product and by-product	30	CO_2 for external use	t																											
Others	N	Other emission sources	—																											

Calculation results

Energy Consumption Source	No.	Item	Unit	Total Energy Consumption Direct (GJ/month)	Total Energy Consumption Upstream (GJ/month)	Total Energy Consumption Credit (GJ/month)	Total CO_2 Emission Direct (t-CO_2/month)	Total CO_2 Emission Upstream (t-CO_2/month)	Total CO_2 Emission Credit (t-CO_2/month)	Total Energy Cost Input (t-CO_2/month)	Total Energy Cost Output (t-CO_2/month)	EAF Direct (GJ/month)	EAF Upstream (GJ/month)	EAF Credit (GJ/month)
Gas fuel	1	Natural gas	10^3m^3(stp)	0	-	0	0	-	0	0	0	0	-	0
	2	Town gas	10^3m^3(stp)	0	-	0	0	-	0	0	0	0	-	0
Liquid fuel	3	Heavy oil	m^3	0	-	0	0	-	0	0	0	0	-	0
	4	Light oil	m^3	0	-	0	0	-	0	0	0	0	-	0
	5	Kerosene	m^3	0	-	0	0	-	0	0	0	0	-	0
	6	LPG	t	0	-	0	0	-	0	0	0	0	-	0
Solid fuel	7	EAF coal	dry t	0	-	0	0	-	0	0	0	0	-	0
	8	Steam coal	dry t	0	-	0	0	-	0	0	0	0	-	0
	9	Coke	dry t	0	-	0	0	-	0	0	0	0	-	0
	10	Charcoal	dry t	0	-	0	0	-	0	0	0	0	-	0
	11	SR/DR coal		-	-	-	0	-	0	0	0	-	-	-
Auxiliary material	12	Limestone	dry t	-	-	0	0	-	0	0	0	-	-	0
	13	Burnt lime	t	-	0	0	-	0	0	0	0	-	0	0
	14	Crude dolomite	dry t	-	-	0	0	-	0	0	0	-	-	0
	15	Burnt dolomite	t	-	0	0	-	0	0	0	0	-	0	0
	16	EAF graphite electrodes	t	-	-	0	0	0	0	0	0	-	-	0
	17	Nitrogen	10^3m^3(stp)	-	0	0	-	0	0	0	0	-	0	0
	18	Argon	10^3m^3(stp)	-	0	0	-	0	0	0	0	-	0	0
	19	Oxygen	10^3m^3(stp)	-	0	0	-	0	0	0	0	-	0	0
Energy carriers	20	Electricity	MWh	-	0	0	-	0	0	0	0	-	0	0
	21	Steam	t	-	0	0	-	0	0	0	0	-	0	0
Ferrous-containing material	22	Pellets	t	-	-	-	0	-	-	0	0	-	-	-
	23	Hot metal	t	-	-	-	0	-	0	0	0	-	-	-
	24	Cold iron	t	-	-	-	0	-	0	0	0	-	-	-
	25	Gas-based DRI	t	-	-	-	0	-	0	0	0	-	-	-
	26	Coal-based DRI	t	-	-	-	0	-	0	0	0	-	-	-
Alloys	27	Ferro-nickel	t	-	-	-	0	-	0	0	0	-	-	-
	28	Ferro-chromium	t	-	-	-	0	-	0	0	0	-	-	-
	29	Ferro-molybdenum	t	-	-	-	0	-	0	0	0	-	-	-
Product and by-product	30	CO_2 for external use	t	-	-	-	0	-	0	0	0	-	-	-
Others	N	Other emission sources	—	0	0	0	0	0	0	0	0	0	0	0
Subtotal				0	0	0	0	0	0	0	0	0	0	0
			Total			GJ/month			t-CO_2/month		GJ/month			GJ/month
			Intensity (Unit)			GJ/tcs*			t-CO_2/tcs*		THB/tcs*			GJ/tcs*

Facility by Facility Energy Cost (THB/month)

No.	EAF Input	EAF Output	LF Input	LF Output	CCM Input	CCM Output	Ladle heater and ladle transfer Input	Ladle heater and ladle transfer Output	EAF dedusting system Input	EAF dedusting system Output	Oxygen plant Input	Oxygen plant Output	RHF Input	RHF Output	Rolling mill Input	Rolling mill Output	Cooling water for EAF Input	Cooling water for EAF Output	Cooling water for CCM Input	Cooling water for CCM Output	Cooling water for RHF Input	Cooling water for RHF Output	Others Input	Others Output
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month
Intensity (Unit)		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*

*tcs = ton crude steel

Monthly Data Entry Sheets (10 Oct.)

Additional Instructions for Data Entry
Sheet B contains formulas in the cells that automatically sum the data entries in the 12 monthly data entry sheets (Sheets 01-12)
There are two options for entering data in this document:
Option 1: Manually enter annual data in Sheet B
Option 2: Manually enter monthly data in Sheets 01-12, which is automatically summed into annual data in Sheet B
If you choose Option 1, please delete or overwrite the forumulas in the input cells of Sheet B

Note: This sheet is based on ISO14404 Calculation Sheet for Steel Plant for EAF and/or RHF/Rolling, etc.
1. "Input" means energy/materials purchased by the steelworks from suppliers.
2. "Output" means energy/material sold to the customers outside of steelworks.
3. "stp" means standard temperature and pressure.

Please fill in blue-colored cells only. Gray/pink-colored cells are automatically calculated.

General information

Name of person in charge of this data	*********	
phone	***-****-****	
E mail	***@*******	
Actual monthly EAF production	***	ton-crude steel/month
Monthly purchased semi-finished steel products	***	ton- steel*/month (*semi-finished steel such as bloom, billet, slab etc.)
Actual monthly production	***	ton-product steel/month

Monthly Data Entry

Energy Consumption Source			Unit	Energy cost	Total		EAF		LF		CCM		Ladle heater and ladle transfer		EAF dedusting system		Oxygen plant		RHF		Rolling mill		Cooling water for EAF		Cooling water for CCM		Cooling water for RHF		Others	
				THB/Unit	Input (purchased)	Output (sold)	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output
Gas fuel	1	Natural gas	10^3m^3(stp)																											
	2	Town gas	10^3m^3(stp)																											
Liquid fuel	3	Heavy oil	m^3																											
	4	Light oil	m^3																											
	5	Kerosene	m^3																											
	6	LPG	t																											
Solid fuel	7	EAF coal	dry t																											
	8	Steam coal	dry t																											
	9	Coke	dry t																											
	10	Charcoal	dry t																											
	11	SR/DR coal																												
Auxiliary material	12	Limestone	dry t																											
	13	Burnt lime	t																											
	14	Crude dolomite	dry t																											
	15	Burnt dolomite	t																											
	16	EAF graphite electrodes	t																											
	17	Nitrogen	10^3m^3(stp)																											
	18	Argon	10^3m^3(stp)																											
	19	Oxygen	10^3m^3(stp)																											
Energy carriers	20	Electricity	MWh																											
	21	Steam	t																											
Ferrous-containing material	22	Pellets	t																											
	23	Hot metal	t																											
	24	Cold iron	t																											
	25	Gas-based DRI	t																											
	26	Coal-based DRI	t																											
Alloys	27	Ferro-nickel	t																											
	28	Ferro-chromium	t																											
	29	Ferro-molybdenum	t																											
Product and by-product	30	CO_2 for external use	t																											
Others	N	Other emission sources	—																											

(Facility by Facility: EAF through Others)

Calculation results

Energy Consumption Source			Unit	Total Energy Consumption			Total CO_2 Emission			Total Energy Cost	
				Direct	Upstream	Credit	Direct	Upstream	Credit	Input	Output
				GJ/month			t-CO_2/month			t-CO_2/month	
Gas fuel	1	Natural gas	10^3m^3(stp)	0	-	0	0	-	0	0	0
	2	Town gas	10^3m^3(stp)	0	-	0	0	-	0	0	0
Liquid fuel	3	Heavy oil	m^3	0	-	0	0	-	0	0	0
	4	Light oil	m^3	0	-	0	0	-	0	0	0
	5	Kerosene	m^3	0	-	0	0	-	0	0	0
	6	LPG	t	0	-	0	0	-	0	0	0
Solid fuel	7	EAF coal	dry t	0	-	0	0	-	0	0	0
	8	Steam coal	dry t	0	-	0	0	-	0	0	0
	9	Coke	dry t	0	-	0	0	-	0	0	0
	10	Charcoal	dry t	0	-	0	0	-	0	0	0
	11	SR/DR coal		-	-	-	0	-	0	0	0
Auxiliary material	12	Limestone	dry t	-	-	0	0	-	0	0	0
	13	Burnt lime	t	-	-	0	-	-	0	-	0
	14	Crude dolomite	dry t	-	-	0	0	-	0	0	0
	15	Burnt dolomite	t	-	0	0	-	0	0	0	0
	16	EAF graphite electrodes	t	-	-	0	-	-	0	-	0
	17	Nitrogen	10^3m^3(stp)	-	0	0	-	0	0	0	0
	18	Argon	10^3m^3(stp)	-	0	0	-	0	0	0	0
	19	Oxygen	10^3m^3(stp)	-	0	0	-	0	0	0	0
Energy carriers	20	Electricity	MWh	-	0	0	-	0	0	0	0
	21	Steam	t	-	0	0	-	0	0	0	0
Ferrous-containing material	22	Pellets	t	-	-	-	0	-	-	0	0
	23	Hot metal	t	-	-	-	0	-	0	0	0
	24	Cold iron	t	-	-	-	0	-	0	0	0
	25	Gas-based DRI	t	-	-	-	0	-	0	0	0
	26	Coal-based DRI	t	-	-	-	0	-	0	0	0
Alloys	27	Ferro-nickel	t	-	-	-	0	-	0	0	0
	28	Ferro-chromium	t	-	-	-	0	-	0	0	0
	29	Ferro-molybdenum	t	-	-	-	0	-	0	0	0
Product and by-product	30	CO_2 for external use	t	-	-	-	0	-	0	0	0
Others	N	Other emission sources	—	0	0	0	0	0	0	0	0
Subtotal				0	0	0	0	0	0	0	0
			Total			GJ/month			t-CO_2/month		GJ/month
			Intensity (Unit)			GJ/tcs*			t-CO_2/tcs*		THB/tcs*

Facility by Facility Energy Consumption (GJ/month)

No.	Source	EAF			LF			CCM			Ladle heater and ladle transfer			EAF dedusting system			Oxygen plant			RHF			Rolling mill			Cooling water for EAF			Cooling water for CCM			Cooling water for RHF			Others		
		Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit
1	Natural gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
2	Town gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
3	Heavy oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
4	Light oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
5	Kerosene	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
6	LPG	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
7	EAF coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
8	Steam coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
9	Coke	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
10	Charcoal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
11	SR/DR coal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	Limestone	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
13	Burnt lime	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
14	Crude dolomite	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
15	Burnt dolomite	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
16	EAF graphite electrodes	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
17	Nitrogen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
18	Argon	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
19	Oxygen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
20	Electricity	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
21	Steam	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
22	Pellets	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	Hot metal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	Cold iron	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	Gas-based DRI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	Coal-based DRI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	Ferro-nickel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	Ferro-chromium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	Ferro-molybdenum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	CO_2 for external use	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N	Other emission sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total				GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month
Intensity (Unit)				GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*

Facility by Facility CO_2 Emission (t-CO_2/month)

No.	Source	EAF			LF			CCM			Ladle heater and ladle transfer			EAF dedusting system			Oxygen plant			RHF			Rolling mill			Cooling water for EAF			Cooling water for CCM			Cooling water for RHF			Others		
		Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit
1	Natural gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
2	Town gas	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
3	Heavy oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
4	Light oil	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
5	Kerosene	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
6	LPG	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
7	EAF coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
8	Steam coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
9	Coke	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
10	Charcoal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
11	SR/DR coal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
12	Limestone	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
13	Burnt lime	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
14	Crude dolomite	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
15	Burnt dolomite	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
16	EAF graphite electrodes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	Nitrogen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
18	Argon	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
19	Oxygen	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
20	Electricity	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
21	Steam	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
22	Pellets	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-
23	Hot metal	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
24	Cold iron	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
25	Gas-based DRI	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
26	Coal-based DRI	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
27	Ferro-nickel	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
28	Ferro-chromium	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
29	Ferro-molybdenum	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
30	CO_2 for external use	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
N	Other emission sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total				t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month
Intensity (Unit)				t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*

Facility by Facility Energy Cost (THB/month)

No.	Source	EAF		LF		CCM		Ladle heater and ladle transfer		EAF dedusting system		Oxygen plant		RHF		Rolling mill		Cooling water for EAF		Cooling water for CCM		Cooling water for RHF		Others	
		Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output
1	Natural gas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	Town gas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Heavy oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Light oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Kerosene	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	LPG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	EAF coal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Steam coal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Coke	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Charcoal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	SR/DR coal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Limestone	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	Burnt lime	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Crude dolomite	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	Burnt dolomite	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	EAF graphite electrodes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	Nitrogen	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	Argon	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	Oxygen	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Electricity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	Steam	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	Pellets	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	Hot metal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	Cold iron	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	Gas-based DRI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	Coal-based DRI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	Ferro-nickel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	Ferro-chromium	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	Ferro-molybdenum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	CO_2 for external use	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N	Other emission sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total			THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month
Intensity (Unit)			THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*

*tcs = ton crude steel

Monthly Data Entry Sheets (11 Nov.)

Additional Instructions for Data Entry
Sheet B contains formulas in the cells that automatically sum the data entries in the 12 monthly data entry sheets (Sheets 01-12)
There are two options for entering data in this document:
Option 1: Manually enter annual data in Sheet B
Option 2: Manually enter monthly data in Sheets 01-12, which is automatically summed into annual data in Sheet B
If you choose Option 1, please delete or overwrite the forumulas in the input cells of Sheet B

Note: This sheet is based on ISO14404 Calculation Sheet for Steel Plant for EAF and/or RHF/Rolling, etc.
1. "Input" means energy/materials purchased by the steelworks from suppliers.
2. "Output" means energy/material sold to the customers outside of steelworks.
3. "stp" means standard temperature and pressure.

Please fill in blue-colored cells only. Gray/pink-colored cells are automatically calculated.

General information

Name of person in charge of this data	*********	
phone	***-****-****	
E mail	***@*******	
Actual monthly EAF production	***	ton-crude steel/month
Monthly purchased semi-finished steel products	***	ton- steel*/month (*semi-finished steel such as bloom, billet, slab etc.)
Actual monthly production	***	ton-product steel/month

Monthly Data Entry

				Energy cost	Total		Facility by Facility																							
							EAF		LF		CCM		Ladle heater and ladle transfer		EAF dedusting system		Oxygen plant		RHF		Rolling mill		Cooling water						Others	
																							for EAF		for CCM		for RHF			
Energy Consumption Source			Unit	THB/Unit	Input (purchased)	Output (sold)	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output
Gas fuel	1	Natural gas	10^3m^3(stp)																											
	2	Town gas	10^3m^3(stp)																											
Liquid fuel	3	Heavy oil	m^3																											
	4	Light oil	m^3																											
	5	Kerosene	m^3																											
	6	LPG	t																											
Solid fuel	7	EAF coal	dry t																											
	8	Steam coal	dry t																											
	9	Coke	dry t																											
	10	Charcoal	dry t																											
	11	SR/DR coal																												
Auxiliary material	12	Limestone	dry t																											
	13	Burnt lime	t																											
	14	Crude dolomite	dry t																											
	15	Burnt dolomite	t																											
	16	EAF graphite electrodes	t																											
	17	Nitrogen	10^3m^3(stp)																											
	18	Argon	10^3m^3(stp)																											
	19	Oxygen	10^3m^3(stp)																											
Energy carriers	20	Electricity	MWh																											
	21	Steam	t																											
Ferrous-containing material	22	Pellets	t																											
	23	Hot metal	t																											
	24	Cold iron	t																											
	25	Gas-based DRI	t																											
	26	Coal-based DRI	t																											
Alloys	27	Ferro-nickel	t																											
	28	Ferro-chromium	t																											
	29	Ferro-molybdenum	t																											
Product and by-product	30	CO_2 for external use	t																											
Others	N	Other emission sources	—																											

Calculation results

				Total Energy Consumption			Total CO_2 Emission			Total Energy Cost	
Energy Consumption Source			Unit	Direct	Upstream	Credit	Direct	Upstream	Credit	Input	Output
				GJ/month			t-CO_2/month			t-CO_2/month	
Gas fuel	1	Natural gas	10^3m^3(stp)	0	-	0	0	-	0	0	0
	2	Town gas	10^3m^3(stp)	0	-	0	0	-	0	0	0
Liquid fuel	3	Heavy oil	m^3	0	-	0	0	-	0	0	0
	4	Light oil	m^3	0	-	0	0	-	0	0	0
	5	Kerosene	m^3	0	-	0	0	-	0	0	0
	6	LPG	t	0	-	0	0	-	0	0	0
Solid fuel	7	EAF coal	dry t	0	-	0	0	-	0	0	0
	8	Steam coal	dry t	0	-	0	0	-	0	0	0
	9	Coke	dry t	0	-	0	0	-	0	0	0
	10	Charcoal	dry t	0	-	0	0	-	0	0	0
	11	SR/DR coal		-	-	-	0	-	0	0	0
Auxiliary material	12	Limestone	dry t	-	-	0	0	-	0	0	0
	13	Burnt lime	t	-	0	0	-	0	0	0	0
	14	Crude dolomite	dry t	-	-	0	0	-	0	0	0
	15	Burnt dolomite	t	-	0	0	-	0	0	0	0
	16	EAF graphite electrodes	t	-	-	0	0	0	0	0	0
	17	Nitrogen	10^3m^3(stp)	-	0	0	-	0	0	0	0
	18	Argon	10^3m^3(stp)	-	0	0	-	0	0	0	0
	19	Oxygen	10^3m^3(stp)	-	0	0	-	0	0	0	0
Energy carriers	20	Electricity	MWh	-	0	0	-	0	0	0	0
	21	Steam	t	-	0	0	-	0	0	0	0
Ferrous-containing material	22	Pellets	t	-	-	-	0	-	-	0	0
	23	Hot metal	t	-	-	-	0	-	0	0	0
	24	Cold iron	t	-	-	-	0	-	0	0	0
	25	Gas-based DRI	t	-	-	-	0	-	0	0	0
	26	Coal-based DRI	t	-	-	-	0	-	0	0	0
Alloys	27	Ferro-nickel	t	-	-	-	0	-	0	0	0
	28	Ferro-chromium	t	-	-	-	0	-	0	0	0
	29	Ferro-molybdenum	t	-	-	-	0	-	0	0	0
Product and by-product	30	CO_2 for external use	t	-	-	-	0	-	0	0	0
Others	N	Other emission sources	—	0	0	0	0	0	0	0	0
Subtotal				0	0	0	0	0	0	0	0
			Total			GJ/month			t-CO_2/month		GJ/month
			Intensity (Unit)			GJ/tcs*			t-CO_2/tcs*		THB/tcs*

Facility by Facility Energy Consumption

				EAF			LF			CCM			Ladle heater and ladle transfer			EAF dedusting system			Oxygen plant			RHF			Rolling mill			Cooling water for EAF			Cooling water for CCM			Cooling water for RHF			Others		
Energy Consumption Source			Unit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit
				GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month		
Gas fuel	1	Natural gas	10^3m^3(stp)	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	2	Town gas	10^3m^3(stp)	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
Liquid fuel	3	Heavy oil	m^3	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	4	Light oil	m^3	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	5	Kerosene	m^3	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	6	LPG	t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
Solid fuel	7	EAF coal	dry t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	8	Steam coal	dry t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	9	Coke	dry t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	10	Charcoal	dry t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	11	SR/DR coal		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Auxiliary material	12	Limestone	dry t	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
	13	Burnt lime	t	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
	14	Crude dolomite	dry t	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
	15	Burnt dolomite	t	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
	16	EAF graphite electrodes	t	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
	17	Nitrogen	10^3m^3(stp)	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
	18	Argon	10^3m^3(stp)	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
	19	Oxygen	10^3m^3(stp)	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
Energy carriers	20	Electricity	MWh	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
	21	Steam	t	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
Ferrous-containing material	22	Pellets	t	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	23	Hot metal	t	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	24	Cold iron	t	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	25	Gas-based DRI	t	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26	Coal-based DRI	t	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Alloys	27	Ferro-nickel	t	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	28	Ferro-chromium	t	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	29	Ferro-molybdenum	t	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Product and by-product	30	CO_2 for external use	t	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Others	N	Other emission sources	—	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Total			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month
			Intensity (Unit)			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*

Facility by Facility CO_2 Emission

				EAF			LF			CCM			Ladle heater and ladle transfer			EAF dedusting system			Oxygen plant			RHF			Rolling mill			Cooling water for EAF			Cooling water for CCM			Cooling water for RHF			Others		
Energy Consumption Source			Unit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit
				t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month		
Gas fuel	1	Natural gas	10^3m^3(stp)	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	2	Town gas	10^3m^3(stp)	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
Liquid fuel	3	Heavy oil	m^3	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	4	Light oil	m^3	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	5	Kerosene	m^3	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	6	LPG	t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
Solid fuel	7	EAF coal	dry t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	8	Steam coal	dry t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	9	Coke	dry t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	10	Charcoal	dry t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	11	SR/DR coal		0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
Auxiliary material	12	Limestone	dry t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	13	Burnt lime	t	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
	14	Crude dolomite	dry t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	15	Burnt dolomite	t	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
	16	EAF graphite electrodes	t	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	17	Nitrogen	10^3m^3(stp)	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
	18	Argon	10^3m^3(stp)	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
	19	Oxygen	10^3m^3(stp)	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
Energy carriers	20	Electricity	MWh	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
	21	Steam	t	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
Ferrous-containing material	22	Pellets	t	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-
	23	Hot metal	t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	24	Cold iron	t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	25	Gas-based DRI	t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	26	Coal-based DRI	t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
Alloys	27	Ferro-nickel	t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	28	Ferro-chromium	t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	29	Ferro-molybdenum	t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
Product and by-product	30	CO_2 for external use	t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
Others	N	Other emission sources	—	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Total			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month
			Intensity (Unit)			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*

Facility by Facility Energy Cost

				EAF		LF		CCM		Ladle heater and ladle transfer		EAF dedusting system		Oxygen plant		RHF		Rolling mill		Cooling water for EAF		Cooling water for CCM		Cooling water for RHF		Others	
Energy Consumption Source			Unit	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output
				THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month	
Gas fuel	1	Natural gas	10^3m^3(stp)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2	Town gas	10^3m^3(stp)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Liquid fuel	3	Heavy oil	m^3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4	Light oil	m^3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5	Kerosene	m^3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6	LPG	t	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Solid fuel	7	EAF coal	dry t	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8	Steam coal	dry t	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9	Coke	dry t	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10	Charcoal	dry t	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11	SR/DR coal		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Auxiliary material	12	Limestone	dry t	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	13	Burnt lime	t	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	14	Crude dolomite	dry t	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	15	Burnt dolomite	t	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	16	EAF graphite electrodes	t	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	17	Nitrogen	10^3m^3(stp)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	18	Argon	10^3m^3(stp)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	19	Oxygen	10^3m^3(stp)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Energy carriers	20	Electricity	MWh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	21	Steam	t	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ferrous-containing material	22	Pellets	t	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	23	Hot metal	t	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	24	Cold iron	t	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	25	Gas-based DRI	t	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	26	Coal-based DRI	t	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alloys	27	Ferro-nickel	t	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	28	Ferro-chromium	t	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	29	Ferro-molybdenum	t	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Product and by-product	30	CO_2 for external use	t	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Others	N	Other emission sources	—	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Total		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month
			Intensity (Unit)		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*

*tcs = ton crude steel

Monthly Data Entry Sheets (12 Dec..)

Additional Instructions for Data Entry
Sheet B contains formulas in the cells that automatically sum the data entries in the 12 monthly data entry sheets (Sheets 01-12)
There are two options for entering data in this document:
Option 1: Manually enter annual data in Sheet B
Option 2: Manually enter monthly data in Sheets 01-12, which is automatically summed into annual data in Sheet B
If you choose Option 1, please delete or overwrite the forumulas in the input cells of Sheet B

Note: This sheet is based on ISO14404 Calculation Sheet for Steel Plant for EAF and/or RHF/Rolling, etc.
1. "Input" means energy/materials purchased by the steelworks from suppliers.
2. "Output" means energy/material sold to the customers outside of steelworks.
3. "stp" means standard temperature and pressure.

Please fill in blue-colored cells only. Gray/pink-colored cells are automatically calculated.

General information

Name of person in charge of this data	*********	
phone	***-****-****	
E mail	***@*******	
Actual monthly EAF production	***	ton-crude steel/month
Monthly purchased semi-finished steel products	***	ton- steel*/month (*semi-finished steel such as bloom, billet, slab etc.)
Actual monthly production	***	ton-product steel/month

Monthly Data Entry

				Energy cost	Total		Facility by Facility																							
							EAF		LF		CCM		Ladle heater and ladle transfer		EAF dedusting system		Oxygen plant		RHF		Rolling mill		Cooling water						Others	
																							for EAF		for CCM		for RHF			
Energy Consumption Source			Unit	THB/Unit	Input (purchased)	Output (sold)	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output
Gas fuel	1	Natural gas	10^3m^3(stp)																											
	2	Town gas	10^3m^3(stp)																											
Liquid fuel	3	Heavy oil	m^3																											
	4	Light oil	m^3																											
	5	Kerosene	m^3																											
	6	LPG	t																											
Solid fuel	7	EAF coal	dry t																											
	8	Steam coal	dry t																											
	9	Coke	dry t																											
	10	Charcoal	dry t																											
	11	SR/DR coal																												
Auxiliary material	12	Limestone	dry t																											
	13	Burnt lime	t																											
	14	Crude dolomite	dry t																											
	15	Burnt dolomite	t																											
	16	EAF graphite electrodes	t																											
	17	Nitrogen	10^3m^3(stp)																											
	18	Argon	10^3m^3(stp)																											
	19	Oxygen	10^3m^3(stp)																											
Energy carriers	20	Electricity	MWh																											
	21	Steam	t																											
Ferrous-containing material	22	Pellets	t																											
	23	Hot metal	t																											
	24	Cold iron	t																											
	25	Gas-based DRI	t																											
	26	Coal-based DRI	t																											
Alloys	27	Ferro-nickel	t																											
	28	Ferro-chromium	t																											
	29	Ferro-molybdenum	t																											
Product and by-product	30	CO_2 for external use	t																											
Others	N	Other emission sources	—																											

Calculation results

Energy Consumption Source			Unit	Total Energy Consumption			Total CO_2 Emission			Total Energy Cost	
				Direct	Upstream	Credit	Direct	Upstream	Credit	Input	Output
				GJ/month			t-CO_2/month			t-CO_2/month	
Gas fuel	1	Natural gas	10^3m^3(stp)	0	-	0	0	-	0	0	0
	2	Town gas	10^3m^3(stp)	0	-	0	0	-	0	0	0
Liquid fuel	3	Heavy oil	m^3	0	-	0	0	-	0	0	0
	4	Light oil	m^3	0	-	0	0	-	0	0	0
	5	Kerosene	m^3	0	-	0	0	-	0	0	0
	6	LPG	t	0	-	0	0	-	0	0	0
Solid fuel	7	EAF coal	dry t	0	-	0	0	-	0	0	0
	8	Steam coal	dry t	0	-	0	0	-	0	0	0
	9	Coke	dry t	0	-	0	0	-	0	0	0
	10	Charcoal	dry t	0	-	0	0	-	0	0	0
	11	SR/DR coal		-	-	-	0	-	0	0	0
Auxiliary material	12	Limestone	dry t	-	-	0	0	-	0	0	0
	13	Burnt lime	t	-	0	0	-	0	0	0	0
	14	Crude dolomite	dry t	-	-	0	0	-	0	0	0
	15	Burnt dolomite	t	-	0	0	-	0	0	0	0
	16	EAF graphite electrodes	t	-	-	0	0	0	0	0	0
	17	Nitrogen	10^3m^3(stp)	-	0	0	-	0	0	0	0
	18	Argon	10^3m^3(stp)	-	0	0	-	0	0	0	0
	19	Oxygen	10^3m^3(stp)	-	0	0	-	0	0	0	0
Energy carriers	20	Electricity	MWh	-	0	0	-	0	0	0	0
	21	Steam	t	-	0	0	-	0	0	0	0
Ferrous-containing material	22	Pellets	t	-	-	-	0	-	-	0	0
	23	Hot metal	t	-	-	-	0	-	0	0	0
	24	Cold iron	t	-	-	-	0	-	0	0	0
	25	Gas-based DRI	t	-	-	-	0	-	0	0	0
	26	Coal-based DRI	t	-	-	-	0	-	0	0	0
Alloys	27	Ferro-nickel	t	-	-	-	0	-	0	0	0
	28	Ferro-chromium	t	-	-	-	0	-	0	0	0
	29	Ferro-molybdenum	t	-	-	-	0	-	0	0	0
Product and by-product	30	CO_2 for external use	t	-	-	-	0	-	0	0	0
Others	N	Other emission sources	—	0	0	0	0	0	0	0	0
Subtotal				0	0	0	0	0	0	0	0
			Total			GJ/month			t-CO_2/month		GJ/month
			Intensity (Unit)			GJ/tcs*			t-CO_2/tcs*		THB/tcs*

Energy Consumption Source			Unit	Facility by Facility Energy Consumption: EAF			LF			CCM			Ladle heater and ladle transfer			EAF dedusting system			Oxygen plant		
				Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit
				GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month		
Gas fuel	1	Natural gas	10^3m^3(stp)	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	2	Town gas	10^3m^3(stp)	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
Liquid fuel	3	Heavy oil	m^3	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	4	Light oil	m^3	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	5	Kerosene	m^3	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	6	LPG	t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
Solid fuel	7	EAF coal	dry t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	8	Steam coal	dry t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	9	Coke	dry t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	10	Charcoal	dry t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	11	SR/DR coal		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Auxiliary material	12	Limestone	dry t	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
	13	Burnt lime	t	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
	14	Crude dolomite	dry t	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
	15	Burnt dolomite	t	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
	16	EAF graphite electrodes	t	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
	17	Nitrogen	10^3m^3(stp)	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
	18	Argon	10^3m^3(stp)	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
	19	Oxygen	10^3m^3(stp)	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
Energy carriers	20	Electricity	MWh	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
	21	Steam	t	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
Ferrous-containing material	22	Pellets	t	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	23	Hot metal	t	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	24	Cold iron	t	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	25	Gas-based DRI	t	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26	Coal-based DRI	t	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Alloys	27	Ferro-nickel	t	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	28	Ferro-chromium	t	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	29	Ferro-molybdenum	t	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Product and by-product	30	CO_2 for external use	t	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Others	N	Other emission sources	—	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Total			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month
			Intensity (Unit)			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*

Energy Consumption Source			Unit	Facility by Facility Energy Consumption: RHF			Rolling mill			Cooling water for EAF			Cooling water for CCM			Cooling water for RHF			Others		
				Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit
				GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month		
Gas fuel	1	Natural gas	10^3m^3(stp)	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	2	Town gas	10^3m^3(stp)	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
Liquid fuel	3	Heavy oil	m^3	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	4	Light oil	m^3	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	5	Kerosene	m^3	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	6	LPG	t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
Solid fuel	7	EAF coal	dry t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	8	Steam coal	dry t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	9	Coke	dry t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	10	Charcoal	dry t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	11	SR/DR coal		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Auxiliary material	12	Limestone	dry t	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
	13	Burnt lime	t	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
	14	Crude dolomite	dry t	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
	15	Burnt dolomite	t	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
	16	EAF graphite electrodes	t	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0
	17	Nitrogen	10^3m^3(stp)	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
	18	Argon	10^3m^3(stp)	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
	19	Oxygen	10^3m^3(stp)	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
Energy carriers	20	Electricity	MWh	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
	21	Steam	t	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
Ferrous-containing material	22	Pellets	t	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	23	Hot metal	t	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	24	Cold iron	t	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	25	Gas-based DRI	t	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26	Coal-based DRI	t	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Alloys	27	Ferro-nickel	t	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	28	Ferro-chromium	t	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	29	Ferro-molybdenum	t	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Product and by-product	30	CO_2 for external use	t	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Others	N	Other emission sources	—	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Total			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month			GJ/month
			Intensity (Unit)			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*			GJ/tcs*

Energy Consumption Source			Unit	Facility by Facility CO_2 Emission: EAF			LF			CCM			Ladle heater and ladle transfer			EAF dedusting system			Oxygen plant		
				Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit
				t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month		
Gas fuel	1	Natural gas	10^3m^3(stp)	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	2	Town gas	10^3m^3(stp)	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
Liquid fuel	3	Heavy oil	m^3	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	4	Light oil	m^3	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	5	Kerosene	m^3	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	6	LPG	t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
Solid fuel	7	EAF coal	dry t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	8	Steam coal	dry t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	9	Coke	dry t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	10	Charcoal	dry t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	11	SR/DR coal		0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
Auxiliary material	12	Limestone	dry t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	13	Burnt lime	t	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
	14	Crude dolomite	dry t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	15	Burnt dolomite	t	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
	16	EAF graphite electrodes	t	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	17	Nitrogen	10^3m^3(stp)	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
	18	Argon	10^3m^3(stp)	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
	19	Oxygen	10^3m^3(stp)	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
Energy carriers	20	Electricity	MWh	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
	21	Steam	t	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
Ferrous-containing material	22	Pellets	t	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-
	23	Hot metal	t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	24	Cold iron	t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	25	Gas-based DRI	t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	26	Coal-based DRI	t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
Alloys	27	Ferro-nickel	t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	28	Ferro-chromium	t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	29	Ferro-molybdenum	t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
Product and by-product	30	CO_2 for external use	t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
Others	N	Other emission sources	—	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Total			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month
			Intensity (Unit)			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*

Energy Consumption Source			Unit	Facility by Facility CO_2 Emission: RHF			Rolling mill			Cooling water for EAF			Cooling water for CCM			Cooling water for RHF			Others		
				Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit	Direct	Upstream	Credit
				t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month		
Gas fuel	1	Natural gas	10^3m^3(stp)	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	2	Town gas	10^3m^3(stp)	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
Liquid fuel	3	Heavy oil	m^3	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	4	Light oil	m^3	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	5	Kerosene	m^3	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	6	LPG	t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
Solid fuel	7	EAF coal	dry t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	8	Steam coal	dry t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	9	Coke	dry t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	10	Charcoal	dry t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	11	SR/DR coal		0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
Auxiliary material	12	Limestone	dry t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	13	Burnt lime	t	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
	14	Crude dolomite	dry t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	15	Burnt dolomite	t	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
	16	EAF graphite electrodes	t	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	17	Nitrogen	10^3m^3(stp)	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
	18	Argon	10^3m^3(stp)	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
	19	Oxygen	10^3m^3(stp)	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
Energy carriers	20	Electricity	MWh	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
	21	Steam	t	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0
Ferrous-containing material	22	Pellets	t	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-	0	-	-
	23	Hot metal	t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	24	Cold iron	t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	25	Gas-based DRI	t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	26	Coal-based DRI	t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
Alloys	27	Ferro-nickel	t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	28	Ferro-chromium	t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
	29	Ferro-molybdenum	t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
Product and by-product	30	CO_2 for external use	t	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0
Others	N	Other emission sources	—	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Total			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month			t-CO_2/month
			Intensity (Unit)			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*			t-CO_2/tcs*

Energy Consumption Source			Unit	Facility by Facility Energy Cost: EAF		LF		CCM		Ladle heater and ladle transfer		EAF dedusting system		Oxygen plant		RHF		Rolling mill		Cooling water for EAF		Cooling water for CCM		Cooling water for RHF		Others	
				Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output	Input	Output
				THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month	
Gas fuel	1	Natural gas	10^3m^3(stp)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2	Town gas	10^3m^3(stp)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Liquid fuel	3	Heavy oil	m^3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4	Light oil	m^3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5	Kerosene	m^3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6	LPG	t	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Solid fuel	7	EAF coal	dry t	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8	Steam coal	dry t	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9	Coke	dry t	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10	Charcoal	dry t	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11	SR/DR coal		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Auxiliary material	12	Limestone	dry t	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	13	Burnt lime	t	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	14	Crude dolomite	dry t	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	15	Burnt dolomite	t	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	16	EAF graphite electrodes	t	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	17	Nitrogen	10^3m^3(stp)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	18	Argon	10^3m^3(stp)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	19	Oxygen	10^3m^3(stp)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Energy carriers	20	Electricity	MWh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	21	Steam	t	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ferrous-containing material	22	Pellets	t	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	23	Hot metal	t	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	24	Cold iron	t	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	25	Gas-based DRI	t	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	26	Coal-based DRI	t	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alloys	27	Ferro-nickel	t	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	28	Ferro-chromium	t	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	29	Ferro-molybdenum	t	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Product and by-product	30	CO_2 for external use	t	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Others	N	Other emission sources	—	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Total		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month		THB/month
			Intensity (Unit)		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*		THB/tcs*

*tcs = ton crude steel

Factor

Source			Definition	Unit	Energy Consumption Factor			CO_2 Emission Factor		
					Direct energy consumption factor (Kt,d,E)	Upstream energy consumption factor (Kt,u,E)	Credit energy consumption factor (Kt,c,E)	Direct CO_2 emission factor (Kt,d,CO_2)	Upstream CO_2 emission factor (Kt,u,CO_2)	Credit CO_2 emission factor (Kt,c,CO_2)
					GJ/unit	GJ/unit	GJ/unit	t-CO_2/unit	t-CO_2/unit	t-CO_2/unit
Gas fuel	1	Natural gas	mixture of gaseous hydrocarbons, primarily methane, occurring naturally in the earth and used principally as	10^3m^3(stp)	35.900	N/A	35.900	2.014	N/A	2.014
	2	Town gas	fuel gas manufactured for domestic and industrial use	10^3m^3(stp)	35.900	N/A	35.900	2.014	N/A	2.014
Liquid fuel	3	Heavy oil	No. 4- No.6 fuel oil defined by ASTM	m^3	37.700	N/A	37.700	2.907	N/A	2.907
	4	Light oil	No. 2- No.3 fuel oil defined by ASTM	m^3	35.100	N/A	35.100	2.601	N/A	2.601
	5	Kerosene	paraffin (oil)	m^3	34.700	N/A	34.700	2.481	N/A	2.481
	6	LPG	liquefied petroleum gas	t	47.300	N/A	47.300	2.985	N/A	2.985
Solid fuel	7	EAF coal	coal for EAF, including anthracite	dry t	30.100	N/A	30.100	3.257	N/A	3.257
	8	Steam coal	boiler coal for producing electricity and steam, including anthracite	dry t	25.900	N/A	25.900	2.461	N/A	2.461
	9	Coke	solid carbonaceous material	dry t	30.100	N/A	30.100	3.257	N/A	3.257
	10	Charcoal	devolatilized or coked carbon neutral materials. Ex. Trees, plants	dry t	18.800	N/A	18.800	0.000	N/A	0.000
	11	SR/DR coal	coal for SR/DRI including anthracite	dry t	N/A	N/A	N/A	2.955	N/A	2.955
Auxiliary material	12	Limestone	calcium carbonate, $CaCO_3$	dry t	N/A	N/A	0.000	0.440	N/A	0.440
	13	Burnt lime	CaO	t	N/A	4.500	4.500	N/A	0.950	0.950
	14	Crude dolomite	calcium magnesium carbonate, $CaMg(CO_3)_2$	dry t	N/A	N/A	0.000	0.471	N/A	0.471
	15	Burnt dolomite	$CaMgO_2$	t	N/A	4.500	4.500	N/A	1.100	1.100
	16	EAF graphite electrodes	net use of EAF graphite electrodes or attrition loss	t	N/A	N/A	0.000	3.663	0.650	3.663
	17	Nitrogen	N_2.inert gas separated from air at oxygen plant, imported from outside the boundary or exported to outside the boundary	10^3m^3(stp)	N/A	2.000	2.000	N/A	0.103	0.103
	18	Argon	Ar. inert gas separated from air at oxygen plant, imported from outside the boundary or exported to outside the boundary	10^3m^3(stp)	N/A	2.000	2.000	N/A	0.103	0.103
	19	Oxygen	O_2. gas separated from air at oxygen plant, imported from outside the boundary or exported to outside the	10^3m^3(stp)	N/A	6.900	6.900	N/A	0.355	0.355
Energy carriers	20	Electricity	electricity imported from outside the boundary or exported to outside the boundary	MWh	N/A	9.800	9.800	N/A	0.504	0.504
	21	Steam	pressurized water vapour imported from/exported to outside the boundary	t	N/A	3.800	3.800	N/A	0.195	0.195
Ferrous-containing material	22	Pellets	agglomerated spherical iron ore calcinated by rotary	t	N/A	N/A	N/A	0.000	N/A	N/A
	23	Hot metal	intermediate liquid Iron products containing 3 % to 5 % by mass carbon produced by smelting iron ore with equipments such as blast furnace	t	N/A	N/A	N/A	0.172	N/A	0.172
	24	Cold iron	solidified hot metal as an intermediate solid iron	t	N/A	N/A	N/A	0.172	N/A	0.172
	25	Gas-based DRI	direct reduced iron (DRI) reduced by a reducing gas such as reformed natural gas	t	N/A	N/A	N/A	0.073	N/A	0.073
	26	Coal-based DRI	direct reduced iron (DRI) reduced by coal	t	N/A	N/A	N/A	0.073	N/A	0.073
Alloys	27	Ferro-nickel	alloy of iron and nickel	t	N/A	N/A	N/A	0.037	N/A	0.037
	28	Ferro-chromium	alloy of iron and chromium	t	N/A	N/A	N/A	0.275	N/A	0.275
	29	Ferro-molybdenum	alloy of iron and molybdenum	t	N/A	N/A	N/A	0.018	N/A	0.018
Product and by-product	30	CO_2 for external use	CO_2 exported to outside the boundary	t	N/A	N/A	N/A	1.000	N/A	1.000
Others	N	Other emission sources	other related emission sources such as plastics, scraps, desulfurization additives, alloys, fluxes for secondary metallurgy, dust, sludges, etc	—						