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|---|---|---|---|---|---|
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**Request for review**

Dear Sirs,

Please find below the response to the review formulated for the CDM project with the registration number 1608. In case you have any further inquiries please let us know as we kindly assist you.

Yours sincerely,

Werner Betzenbichler
Carbon Management Service

Industrie Service

**Issue 1**

The PP/DOE should clarify the inclusion of the fuel costs in the investment analysis as the waste gas would have been flared in the absence of the project activity.

AND

**Issue 2**

The DOE shall confirm how it has validated that the input values of the IRR meet the requirements of EB 38 paragraph 54.

AND

**Issue 3**

The DOE shall confirm how it has validated that the examples mentioned in the Common Practice Analysis (page 18 and 19 PDD) meet the requirements of EB38 paragraph 60.

AND

**Issue 4**

As Anshan Iron and Steel Group Corporation is unique investor of the proposed project (page 12 of PDD) and heat - in this case delivered by the combined cycle - is an essential deliverable for the company, it should be explained why and how the proposed benchmark would be applicable here.

AND

**Issue 5**

The DOE should clarify how it has validated the obstacles for AISG to obtain loan from bank for new built-projects, especially for this proposed project (page 16 PDD).

AND

**Issue 6**

Since Mitshubishi Heavy Industries is an international operating company and the use of enriched or spiked Blast Furnace Gas (BFG) for production of power or combined heat and power is not new in the world, the DOE should clarify how it has validated that it is the first time for Mitisubishi Heavy Industries to use enriched or spiked BFG in a gas turbine (page 16 PDD).

AND

**Issue 7**

Further clarification is needed on the actual other use of BFG and COG in any production proces, power production or other heating purposes inside or outside the proposed project boundary.

**Referring to Issue 1:**

Response by Project Participant

The fuel costs in the investment analysis include both a blast furnace gas (BFG) cost and a coke oven gas (COG) cost. The costs used in the investment analysis are fully consistent with the FSR and have been validated by the DOE.

BFG and COG are waste gases with no economic value and as such would normally be flared with very limited associated cost. However, for utilization they must be collected, processed and distributed. There are a number of costs associated with gas treatment, storage, distribution, maintenance and management and require significant investment with continued costs for operation and maintenance. These are described in more detail below for both BFG and COG and have been confirmed by the Design Institute that undertook the FSR of Yingkou CCPP[1]):

These costs must therefore be charged to the project through an internal charging system. It is standard practice for iron and steel companies to have internal charges for the consumers of waste gases in order to cover such costs. The internal charge is a fair and appropriate mechanism to bill the project for costs incurred by other departments. Indeed, these costs are applied to all other departments in the iron and steel company[2].

The following descriptions demonstrate how these costs are derived in accordance with the national regulation on Cost Accounting of the Coking and Chemicals industry[3].

(A).Blast Furnace Gas

BFG contains particulate matter (including heavy metals), carbon monoxide, carbon dioxide, sulphur compounds, ammonia, cyanide compounds, hydrocarbons and polycyclic aromatic hydrocarbons. As such pre-treatment, cleaning and management is required for the safe utilization of this gas. The processes require initial investment as well as ongoing maintenance including the purchase of key utilities such as electricity and water.

The cost of BFG is only calculated in terms of the initial capital cost in collection and distribution (including the gas tank and gas piping) and the ongoing maintenance cost of the collection and distribution system. Therefore, The BFG cost applied in the IRR calculation of FSR is 0.0155RBM/Nm$^3$ [4]. This represents the costs of collection, and distribution must be paid by the user of the BFG and they are charged through a cost per m$^3$ consumed. This cost is consistent with the FSR and the calculation set out in the PDD.

(B) Coke Oven Gas

Coke oven gas contains hydrogen, methane, carbon monoxide, hydrocarbons, sulphur compounds and ammonia. There are many reasons why COG must be pretreated before use as a fuel. Firstly, tar and naphthalene in the raw gas may clog the piping and must therefore be removed.

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[1] Anshan Iron and Steel Group Corporation (Yingkou) 150MW Blast Furnace Gas Combined Cycle Power Plant Feasibility Study Report: Supplementary Clarifications
[2] Internal charging list of COG in AISG(April 2006)
[3] P17 and P18, The regulation for cost accounting regulation in Coking and Chemistry industry
[4] IRR calculation spreadsheet in FSR

Also, sulphur and ammonia compounds cause corrosion of the piping and equipment as well as causing secondary emissions of SO2 and must be removed. Desulphurization therefore occurs in two steps as primary and secondary desulphurization. The ammonia must also be removed. All of these processes require utilization and waste treatment of water.

These costs for collection, pre-treatment and secondary treatment must therefore be accounted for. This has been done through the inclusion of a gas cost as none of the investment or operational costs associated with the gas pre-treatment and distribution have been included in the investment analysis presented in the FSR[5] and PDD.

According to the national regulation on Cost Accounting of the Coking and Chemicals industry[6], the COG charge should be calculated as a composite of the coking production cost and the collection and pretreatment cost. Additionally, as required by the CCPP, secondary desulfurization and the COG storage tank for pressure stabilization are needed. These costs must also be included along with the associated maintenance costs.

The total cost for all of these components is 0.9298 RMB/ Nm3 and this may be broken down as follows[7]:

(a) The share of the coking production cost: 0.55RMB/ $Nm^3$
(b) Collection and pretreatment cost : 0.2812RMB/$Nm^3$
(c) Secondary desulfurization cost: 0.057RMB/$Nm^3$
(d) Maintenance cost of COG and stabilization system of COG pressure: 0.0416 RMB/$Nm^3$

These costs have not been double counted since the capital investment in collection, pre-treatment, the gas storage tank and pressure stabilization system of the COG are not included in the IRR of Yingkou CCPP presented in the FSR and PDD. Accordingly the maintenance and operation cost of those systems are also not included as separate items and this is clearly shown in the material expenditure list in FSR of Yingkou CCPP. Furthermore no material utilization in the pre-treatment of waste gas was presented in FSR and applied in the IRR calculation8 .

The Investment analysis taken from the FSR and presented in the PDD includes only the unit cost of COG at 0.93 RMB/m3.

In order to demonstrate the robustness of the investment analysis, the project participant has also amended the cost of the COG to include only the cost of collection, pretreatment, secondary desulphurization and maintenance in the accounting formula. When this is done the unit cost comes out as 0.380 RMB / $m^3$ including costs (b) to (d) above.

When this cost is subsequently applied to the investment analysis the equity IRR comes out at 9.52%, which is still significantly below the benchmark. See attached alternative investment analysis. According to the associated sensitivity analysis the IRR still remains below the benchmark. See the results of the analysis below.

[5] P13,p51 and the detailed the capital cost in FSR of Yingkou CCPP
[6] P17 and P18, The regulation for cost accounting regulation in Coking and Chemistry industry
[7] The further explanation for a few issues of Yingkou CCPP
[8] IRR calculation spreadsheet

**Table 1. Sensitivity Analysis**

| | -10% | -5% | 0 | 5% | 10% |
|---|---|---|---|---|---|
| Total investment | 10.94 | 10.20 | 9.52 | 8.89 | 8.31 |
| Annual generation | 7.75 | 8.65 | 9.52 | 10.37 | 11.19 |
| Annual O&M cost | 5.86 | 7.75 | 9.52 | 11.19 | 12.79 |

It should also be stated that the price formula set out in the cost accounting principals described above explicitly excludes a profit margin and is entirely cost based. This can also be seen if the cost for COG is compared to a market price. Table 1 below shows that the internal charge for COG is significantly below the market price and indeed there are further references are available to substantiate this[9].

**Table 2. Gas Price Evaluation**

| Gas | Price (RMB / $m^{3}$) | CV ($MJ/Nm^3$) | Price (RMB / MJ) |
|---|---|---|---|
| Coke oven gas (internal cost) | 0.930 | 17.91[10] | 0.0519 |
| Coke oven gas market price | 1.27[11] | 17.35 | 0.0732 |

<u>Response by TÜV SÜD</u>

The fuel expenditures have been taken from the FSR and contain a price for blast furnace gas (BFG) and coke oven gas (COG).
The price of the BFG is based on the costs that appear to the gas user for gas treatment, storage, distribution and ongoing maintenance costs.
The price applied by the project is based on these costs. It does not contain any charge for the calorific value of the gas. For this reason the price of 0.0155RBM/$Nm^3$ can be considered applicable for the usage of BFG.
The price of COG gas taken from the FSR is 0,93RMB/$Nm^3$. This price includes 0,55RMB/$Nm^3$ charging for the calorific value of the gas.
We agree that this is not according to international accouting rules. For that reason the coke price was broken down to the collection and pretreatment cost, the desulfurization cost and the cost of COG and stabilization system of COG pressure. The price can then be considered to be 0,38RMB/$Nm^3$, which is an applicable assumption.
The costs assumed to the treatment of the gas have not been included in the O&M of IRR before, therefore a double counting of costs does not occur.

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[9] National Development and Reform Commission, Sep.7, 2007, www.ndrc.gov.cn/jgjc/jgjc/t20070907_157926.htm (COG price reported as 1.31 RMB / $m^3$)
[10] Feasibility Study Report of Yingkou CCPP
[11] Average across 36 Chinese cities, 2006 http://203.208.37.104/search?q=cache:INwTYOtBlj4J:www.yjwj.gov.cn/news_show.asp%3Fid%3D928+2006+%22%E7%84%A6%E7%82%89%E7%85%A4%E6%B0%94%E4%BB%B7%E6%A0%BC%22&hl=zh-CN&newwindow=1&gl=cn&st_usg=ALhdy2_Rtf7PJ13YLV1rbd4hjKokZYZguQ&strip=1

The IRR was recalculated (9,52%) according to the changed fuel costs and is still significantly below the benchmark.

**Referring to Issue 2:**

Response by Project Participant

1. Capital Costs:

The capital cost of Yingkou CCPP in the FSR and PDD is 1.23 billion RMB. This includes an estimate of the imported equipment cost of 744.4 million RMB. The actual cost of this equipment is 10.023 billion Japanese Yen, which equates to 771.8 million RMB[12]. The estimate is therefore 27.4 million less than the actual situation and thus conservative.

The remaining 486 million RMB in the FSR is broken down as follows:

| | |
|---|---|
| Civil Works: | 120 million |
| Auxiliary Equipment: | 213 million |
| Equipment Installation: | 79 million |
| Other expenditure: | 74 million |
| Sub-Total Cost: | 486 million |

2. O & M Costs

All O&M costs applied in the IRR calculation are taken from the FSR. A full breakdown of these costs has been supplied to the DOE. The costs include utility costs (water, steam, nitrogen and compressed air), other materials (such as chemicals), labor, repair and maintenance, and other administration and overhead costs.

The total annual O&M cost is 109,673,000 RMB (excluding fuel costs). This represents less than 9% of the total investment each and is therefore considered to be reasonable.

3. Fuel Costs

Please see response to question 1 above.

4. Power Generation
According to the FSR of the Yinkou CCPP project, the 150MW CCPP should generate 869,000 MWh per year. This assumes the following:

- 7000 operational hours
- 90% load factor
- 8% auxiliary power utilization (primarily used for the compressor station)

In fact these are very optimistic assumptions. The CCPP is dependent on the waste gases that are produced by the blast furnaces and the coke ovens. As such the volume and quality of the gases at any one time shows very high variation. There are storage tanks to help to compensate for this, but this is not sufficient to see a stable supply of gas.

[12] The contract for BFG Firing M701S(DA) Gas Turbine Combined Cycle Power Plant of AISG

When the gas supply is at a peak then the project will be able to operate at full load, but when the gas supply is at a trough then the gas supply will operate at partial load. Unfortunately the gas that is surplus in time of peak supply does not all get stored, due to the capacity of the tanks that are optimized for an average supply of gas rather than a peak supply.

The effect of the uncertainty in gas supply is actually very dramatic. It can be seen from the only registered and verified CCPP in China “BOG and COG Utilisation for Combined Cycle Power CDM Project in Jinan Iron & Steel Works”, which is a very similar CCPP project also utilizing BFG and COG. Operational data from this project is available on the UNFCCC web site and indeed has been widely known in the industry for some time.

This Jigang CCPP project shows the following results for the first three monitoring periods:

| Monitoring Period | Days | Rated Capacity (MW) | Net Power Generation (MWh) | Equivalent annual operation hours at full rated capacity = (MWh*365/Days) / (MW*8760) *8760 |
|---|---|---|---|---|
| 17 Mar 2007 – 16 May 2007 | 61 | 544 | 226,956 | 2496 |
| 17 May 2007 – 07 Oct 2007 | 144 | 544 | 559,944 | 2609 |
| 08 Oct 2007 – 14 Feb 2008 | 130 | 544 | 493,415 | 2547 |

This shows that the equivalent annual operation hours for the Jigang project are around 2500 hours. It is understood that the main reasons for this are underestimated power consumption by the compressor and a very high degree of fluctuation of the waste gases.

For Yingkou CCPP a comparable equivalent operation hours at full rated capacity would be calculated as:

7000 * 90% (load factor) * 92% (auxiliary load factor) = 5796 hours

This is almost double the actual operational data of Jigang CCPP and therefore it is not anticipated that for Yingkou CCPP that 5796 full load equivalent hours will be achieved. Indeed this is a serious risk for the investment that would outweigh the impact of any small variations elsewhere in the investment analysis.

The figures taken for Yingkou CCPP are therefore extremely conservative for the power generation figures. Furthermore, and perhaps more importantly, the investment analysis itself is extremely conservative given this overoptimistic performance data.

4. Power Tariff

The power tariff used in the IRR calculation in the PDD is 0.443 RMB/kWh (excl. VAT). This is the actual power tariff that the project owner pays for power and evidence for this was presented to the DOE during validation on site. The original calculation in the FSR includes a price for sales rather than purchase and this has already been amended. On this basis, the value used in the PDD is conservative.

5. Operational Lifetime

The operational lifetime of the project is 20 years. This is in accordance with the EB39 Annex 35 guidance, when it is stated that “In general a minimum period of 10 years and a maximum of 20 years will be appropriate“.

6. Income tax rate

The income tax rate is also taken from the FSR for the project. This is the standard rate for income tax for companies in China both now and at the time of writing the FSR (http://www.chinatax.gov.cn/n480462/n480513/n480979/n554139/1003219.html).

Response by TÜV SÜD

Capital Costs:

The purchase agreement of the main equipment has been checked and verified by the DOE. For the remaining costs of 486 million RMB the FSR has been carefully checked. The input values can be confirmed by the DOE. We consider the costs to be within the range for this project type and size.

Fuel expenditure:

Please see explanation regarding Issue 1.

Water expenditure:

| | |
|---|---|
| Usage: | 410t/h x 7000h=2,870,000t |
| Unit cost: | 2.52 RMB/t |
| Water cost: | 2,870,000x2.52=7232400RMB |

The usage value has been compared with Integrated Pollution Prevention and Control (IPPC) values[13] and the water price applied regularly in China.
The above water charges are 10% lower than the assumed water costs. By including the lower value the IRR will still be below the benchmark (9,57 %).

Material expenditure:

These costs contain costs for steam for the start up of the project, costs for $N_2$, costs for compressed air. These values are taken from the FSR and have been carefully checked by the DOE. We consider this costs to be within the range for this project type and size.

Employee expenditure:

Total employees: 136
salary/year: 25000RMB/year
benefit: 20% of salary
total labour cost =25000x136x1.14=3,876,000RMB
These values have been taken from the FSR and can be considered to be applicable.

[13] Best Available Techniques Reference Document on the Production of Iron and Steel; December 2001

Maintenance expenditure:

These costs are around 6,76% of the total investment and are considered to be in a reasonable range.

Other O&M expenditure:

These costs are related to overhead costs that include management, administration and insurance among others.

Power generation:

The value of 7000 hours was taken from the FSR. A increase of the power generation by 10%, which is equal to 321 days of production, would still lead to a IRR below the benchmark (11,79%).
Due to the dependence of the electricity production on steel production process, the value of 7000 hours can be considered applicable and reasonable.

Power tariff:

The tariff of 0,443 RMB/kWh (excl. VAT) has been checked and verified by the DOE.

Operational Lifetime:

A lifetime of 20 years was chosen, which is a conservative approach and incompliance with the EB 39 regulations.

Income tax rate:

The income tax rate of 33% is the standard rate for income tax for companies in China.

**Referring to Issue 3:**

Response by Project Participant

EB 38, paragraph 60 states "*The Board clarified that in the context of conducting common practice analysis, project participants may exclude registered CDM project activities and project activities which have been published on the UNFCCC CDM website for global stakeholder consultation as part of the validation process.*"

This guidance was not available at the time of submission of this project, but the project participant is able to make the necessary correction to the PDD as required. According to the table below this would require removal of projects 1, 2, 3, 4, and 6 from the analysis.

**Table 3. Common Practice List**

| | **Name of project owner** | **Project Name** | **EB Reference / Project Status** | **Link** |
|---|---|---|---|---|
| 1 | Jinan Iron and | BOG and COG Utili- | 0812 | http://cdm.unfccc.int/Pr |

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| | | | | |
|---|---|---|---|---|
| | Steel Works Group Company Limited | sation for Combined Cycle Power CDM Project in Jinan Iron & Steel Works | | ojects/DB/TUEV-SUED1166194116.62/view |
| 2 | Chongqing Iron& Steel (Group) | Chongqing Iron & Steel Co. Ltd. Waste Gas to Electricity Project | 1689 | http://cdm.unfccc.int/Projects/DB/DNV-CUK1204708331.19/view |
| 3 | Lianyuan Iron and Steel Group Co Ltd. | Waste Gas based Captive Power Plant in Liangang Group | 1228 | http://cdm.unfccc.int/Projects/DB/DNV-CUK1183468625.95/view |
| 4 | Handan Iron & Steel Group Company Ltd. | Waste gases utilisation for Combined Cycle Power Plant in Handan Iron & Steel Group Co., Ltd | 1262 | http://cdm.unfccc.int/Projects/DB/TUEV-SUED1185365330.91/view |
| 5 | Jiangsu Shagang Group Company | Jiangsu Shagang Group Blast Furnace Combined Cycle Power Plant | DNA Approval | http://cdm.ccchina.gov.cn/WebSite/CDM/UpFile/File1200.pdf |
| 6 | Tonghua Iron & Steel Group Co.Ltd. | 73 MW Tonghua Iron & Steel Waste Gas and Heat Power Generation Project | Validation | https://cdm.unfccc.int/Projects/Validation/DB/UFTSSU-PAX3KNKFR5WNAV7P3LSJQOZL/view.html |
| 7 | Anshan Iron and Steel Group Corporation | Anshan Iron and Steel Group Corp.(Anshan) Blast Furnace Gas Combined Cycle Power Plant Project | 1609 | http://cdm.unfccc.int/Projects/request_reg.html |

The list above was derived according to the following principles:

1. Projects that fall within the geographical boundary of the North East Power Grid. This is due to the fact that the investment environment for each region is different. Specifically in terms of available resources, loan policies, labor costs and electricity tariffs.

2. Projects with a similar sized installations (100 to 300 MW). This is in order to reflect the different size of investment and associated risk.

3. Projects that started construction after 2002. Projects developed prior to 2002 are not considered because in that year the China State Power Corporation was split into five regional grids with substantial effects on the investment environment for power generation projects in China.

In this process only one project was eliminated. This is Jilin Tonghua Phase 1. This project started in 2001, uses domestic turbine technology and is only 49.4MW and therefore falls out of the thresholds identified.

Response by TÜV SÜD:

TÜV can confirm, that in the time of submission (06/02/2008), the EB38 requirements have not been published. For that reason other CDM projects have been included into the analysis. Because of the new requirements of the EB, the project participant agreed to exclude these projects from the analysis.
Project No. 5 " Jiangsu Shagang Group Company Project" is requesting the approval of the Chinese DNA, to be developed under CDM. The applicability of CDM needs be considered for this project as well. That is why it is falls out of the scope of the common practice analysis.
The Jilin Tonghua Phase 1 project is also located in that region. It falls out the scope of common practice, because of the capacity range.
Apart from these projects, the "Shanghai Bao Steel Group Corporation project" (please refer to PDD) is situated in that region. This project received government funding. The difference to the 1608 Anshan Iron and Steel Group Corporation Yingkou project is significant.

**Referring to Issue 4:**

Response by Project Participant

With regard to the selection of the benchmark and as described in the PDD on page 12, the sector benchmark both appropriate and conservative for this project since power generation is not the core business. The power production from this project is subject to the steel production facility and consequently subject to the market conditions of that facility. In other words if the facility is not at full capacity then neither will the power plant be. Given this inherent link, the power project should apply the same investment thresholds as the core equipment. Indeed was the project to obey a benchmark for power then the sales price for power ought to be applied rather than the purchase price (as has been applied here).

Furthermore, AISG (the unique investor) is a SOE and therefore their investment policy obeys guidelines set out by the National rules set out in the "Methods and Parameters for Economic Assessment of Construction Projects, V3" laid down by the NDRC and the Ministry of Construction in 2006. Their investment benchmark is determined from these guidelines and an equity benchmark for the Iron and Steel sector has therefore been applied. In the event that AISG generates power or indeed heat, then such projects are required to meet the thresholds for investment set out in these rules for the iron and steel industry.

Finally, as a unique investor and as set out in the "Tool for the demonstration and assessment of additionality, version 3", the project applies the equity IRR as the appropriate financial indicator.

Response by TÜV SÜD:

Official benchmarks for different industrial sectors are published in "Methods and Parameters for Economic Assessment of Construction Projects, V3".
The required benchmark for iron and steel concerning equity is 13%.
Because electricity production is not the core business of the project owner, the iron and steel benchmark seam tob e applicable.

**Referring to Issue 5:**

Response by Project Participant

This principal mechanism for demonstration of additionality for this project is through the use of an investment analysis. As such the barrier analysis need not be applied and the project participant agrees to the removal of this section.

Response by TÜV SÜD:

The project participant will rely on the investment analysis. The barrier analysis will be skipped in the revised PDD.
For that reason an answer to this question is not needed anymore.

**Referring to Issue 6:**

Response by Project Participant

This principal mechanism for demonstration of additionality for this project is through the use of an investment analysis. As such the barrier analysis need not be applied and the project participant agrees to the removal of this section.

Response by TÜV SÜD:

The project participant will rely on the investment analysis. The barrier analysis will be skipped in the revised PDD.
For that reason an answer to this question is not needed anymore.

**Referring to Issue 7:**

Response by Project Participant

The balance of BFG and COG utilization in Anshan Yinkou Iron and Steel Works are shown in the tables 3 and 4 below.

**Table 3. AISG (Yinkou) BFG Gas Balance**

| Gas Type | Gas Users | Before Construction | | After Construction | |
|---|---|---|---|---|---|
| | | Gas Total Amount (m$^3$/h) | Consumed Proportion (%) | Gas Total Amount (m$^3$/h) | Consumed Proportion (%) |
| | Sinter process | | 0 | | 0 |
| | Coke production | | 17.88 | | 17.88 |
| | Extractive Benzene Production | | 0 | | 0 |
| | Iron Production | | 43.74 | | 43.74 |
| | Steel Production | | 0.32 | | 0.32 |
| | Smelting Process | | 0 | | 0 |
| | Combine Casting | | 0 | | 0 |
| BFG | Thick Board Production | 1,188,600 | 1.91 | 1,188,600 | 1.91 |
| | Heating treatment | | 0.16 | | 0.16 |
| | Heat Cutting machine | | 0 | | 0 |
| | 1580 steel rolling | | 1.9 | | 1.9 |
| | Hydrogen Production | | 0 | | 0 |
| | fire-resistant materials | | 1 | | 1 |
| | CCPP *(Present Proposed CDM Project)* | | 0 | | 21.45 |
| | Keep Firing | | 0 | | 0 |

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| | | | | | |
|---|---|---|---|---|---|
| | Coal gas Oven (*additional project under planning to use the surplus gas)* | | 0 | | 10.76 |
| | Gas Flaring | | 32.21 | | 0 |

**Table 4. AISG (Yinkou) COG Gas Balance**

| Gas Type | Gas Users | Before Construction | | After Construction | |
|---|---|---|---|---|---|
| | | Gas Total Amount (m3/h) | Consumed Proportion (%) | Gas Total Amount (m3/h) | Consumed Proportion (%) |
| COG | Sinter process | 121,500 | 3.28 | 121,500 | 3.28 |
| | Coke production | | 13.81 | | 13.81 |
| | Extractive Benzene Production | | 1.94 | | 1.94 |
| | Iron Production | | 6.31 | | 6.31 |
| | Steel Production | | 1.69 | | 1.69 |
| | Smelting Process | | 0.67 | | 0.67 |
| | Combine Casting | | 1.49 | | 1.49 |
| | Thick Board Production | | 12.22 | | 12.22 |
| | Heating treatment | | 0.85 | | 0.85 |
| | Heat Cutting machine | | 0.57 | | 0.57 |
| | 1580 steel rolling | | 13 | | 13 |
| | Hydrogen Production | | 0.82 | | 0.82 |
| | fire-resistant materials | | 20.98 | | 20.98 |
| | CCPP *(Present Proposed CDM Project)* | | 0 | | 19.08 |
| | Keep Firing | | 1.65 | | 1.65 |
| | Coal gas Oven (*additional project under planning to use the surplus gas)* | | 0 | | 1.35 |
| | Gas Flaring | | 20.43 | | 0 |

These tables show clearly that volume of gas available for the CCPP project is sufficient and in line with the gas requirement set out in the feasibility study report. The feasibility study states that 1,801,800,000 $m^3$ / year of BFG and 144,900,000 $m^3$ / year of COG will be required.

According to the tables above the gas availability for the CCPP running at 7000 hours per year equates to 1,784,682,900 $m^3$ / year of BFG and 162,275,400 $m^3$ / year. There is therefore sufficient gas for the project activity and no gas will be displaced from other uses.

Response by TÜV SÜD:

For this project no historical flaring data exists.
The balance of BFG and COG utilization in Anshan Yinkou Iron and Steel Works is taken from the FSR and was designed by an independent third party.
For this reason the input values can be considered applicable.