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Monitoring report

June 2017, version 1

Gold Standard

Title of the project	Hebei Yingxin Glass Group Co. Ltd. Glass Furnace Flue Gas Waste Heat To Energy Project
Gold Standard project id	750
Version number of the monitoring report	02
Completion date of the monitoring report	22/09/2020
Date of project design certification	30/09/2011
Start date of crediting period	01/01/2010 (fixed crediting period)
Duration of this monitoring period	01/06/2018 – 31/12/2019
Duration of previous monitoring period	01/01/2017 – 31/05/2018
Project representative(s)	Swiss Carbon Assets Ltd.
Host Country	China
Certification pathway (activity certification/impact certification)	Impact certification
SDG Contributions targeted (as per approved PDD)	1 – SDG 7 (Net electricity output by the project activity) 2 – SDG 8 (Quality of employment, human and institutional capacity, quantitative employment and income generation, air quality during operation, noise, water) 3 – SDG 13 (Emission reduction of the project activity every year)
Gold Standard statement/product certification sought (GSVER/ADALYs/RECs etc.)	GSVER
Selected methodology(ies)	ACM0012 Version 3.2: "Consolidated baseline methodology for GHG emission reductions from waste energy recovery projects".
Estimated amount of annual average certified SDG impact (as per approved PDD)	SDG7 – 76,000 MWh/yr SDG8 – 100% of the employees have access to training, health care, insurances and better income SDG13 – 67,906 tCO_2/yr
Total amount of certified SDG impact (as per approved methodology) achieved in this monitoring period	SDG7 – 109885.090MWh SDG8 – 24 persons SDG13 – 98,181 tCO_2

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SECTION A. Description of project

A.1. Purpose and general description of project

Hebei Yingxin Glass Group Co. Ltd. Glass Furnace Flue Gas Waste Heat To Energy Project (hereafter referred to as the "Project") developed by Hebei Yingxin Glass Group Co. Ltd. (hereafter referred to as the project developer) is located in Shahe County of Xintai City, Hebei Province, in the People's Republic of China.

The project generates electricity through recovering and utilizing the waste heat. The electricity from the project is consumed by Hebei Yingxin Glass Group Co. Ltd. and meets part of the electricity demand of the company thereby displacing the electricity that is currently generated by the fossil-fuel dominated North China Power Grid (NCPG), consequently reducing CO_2 emissions.

The project installs four recovery boilers with two sets of condensing turbine generator units. The installed capacity is 12 MW, consisting of two 6 MW units. The expected annual power supply to glass production facilities is 76,000 MWh and the estimated emission reductions are 67,906tCO_2 per year.

The project started commissioning on 12/08/2009. This is the 5th monitoring covering from 01/06/2018 to 31/12/2019 (First and last date included). During this monitoring period, the project activity has supplied 109885.090MWh of net electricity, and thus contributing to the GHG reductions of 98,181 tCO_2.

A.2. Location of project

The project is located in Donghuan Road, Shahe City (county-level city), Xingtai City, Hebei Province, P.R. China. The plant is near to national road G107. The exact location of the plant is 36°51'18"N, 114°30'11"E.

Picture 1: Location of the project

A.3. Reference of applied methodology

UNFCCC Approved consolidated baseline and monitoring methodology ACM0012 Version 3.2: "Consolidated baseline methodology for GHG emission reductions from waste energy recovery projects".

The ACM0012 methodology refers to the Version 02 of the "Tool to calculate the emission factor for an electricity system" and Version 05.2 of the "Tool for the Demonstration and Assessment of Additionality".

For detailed information on the methodology and related tools please refer to:
http://cdm.unfccc.int/methodologies/PAmethodologies/approved

A.4. Crediting period of project

Fixed 10 Years crediting period

Type of crediting period	Fixed
Crediting period	01/01/2010 – 31/12/2019
This monitoring period	01/06/2018 – 31/12/2019
Length of the Monitoring Period	579 Days

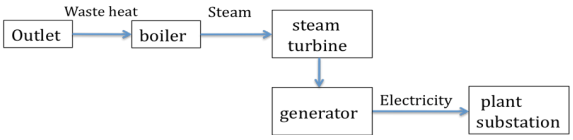
SECTION B. Implementation of project

B.1. Description of implemented project

The project activity completed its construction on 12 August 2009, and the equipment commissioning started on 12 August 2009.

The project activity consists of one site only and the implementation is not phased.

The waste heat is generated by four existing glass production lines. The waste heat is fed through waste heat pipes to four waste heat recovery boilers, which allow the feed water to recover the heat energy of low-temperature waste heat and convert it into superheated steam. Then steam is fed into the steam turbine through the steam pipe. The heat energy is converted into kinetic energy in the steam turbine to enable the turbine rotor to rotate at high speed, and then is converted into mechanical energy to drive the generator to rotate, and then electricity is generated. The main process of the Project Activity is as below:



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The technical data of the equipment is given in the table below.

Table 1. Technical information of equipment

Equipment	Technical Information
Generator 1	Type: QF-J6-2 Rated Power: 6 MW Rated speed: 3000 r/min Manufacturer: Hangzhou Electrical Equipment Works Serial number: 2008-111-2
Generator 2	Type: QF-J6-2 Rated Power: 6 MW Rated speed: 3000 r/min Manufacturer: Hangzhou Electrical Equipment Works Serial number: 2008-111-1
Turbine 1	Type: N6-2.35 Capacity: 6 MW Rated speed: 3000 r/min Manufacturer: Hangzhou Chinen Steam Turbine Power Co., Ltd Serial number: HS4513
Turbine 2	Type: N6-2.35 Capacity: 6 MW Rated speed: 3000 r/min Manufacturer: Hangzhou Chinen Steam Turbine Power Co., Ltd Serial number: HS4503
Waste Gas Recovery Boiler 1	Type: QCF 110/500-15-2.5/420 Capacity: 16 t/h Manufacturer: Hangzhou Boiler Company Serial number: 6988001
Waste Gas Recovery Boiler 2	Type: QCF 110/500-18-2.5/420 Capacity: 17 t/h Manufacturer: Hangzhou Boiler Company Serial number: 66987001
Waste Gas Recovery Boiler 3	Type: QCF 110/500-18-2.5/420 Capacity: 16 t/h Manufacturer: Hangzhou Boiler Company Serial number: 66987002
Waste Gas Recovery Boiler 4	Type: QCF 110/500-15-2.5/420 Capacity: 11 t/h Manufacturer: Hangzhou Boiler Company Serial number: 66986002

This is the 5th monitoring period, with monitoring period from 01/06/2018 to 31/12/2019. The project activity is operating normally and the implementation status is stable. No equipment was exchanged or overhauled.

No events or situation that occurred during the monitoring period, which may impact the GHG emission reductions or removals and monitoring.

B.2. Post-registration changes

B.2.1. Temporary deviations from Certified Key Project Information, Project Design Document, Monitoring & Reporting Plan, applied methodology or applied standardized baseline

No temporary deviations from Certified Project Design Document, Monitoring & Reporting Plan and applied methodology.

B.2.2. Corrections

No corrections.

B.2.3. Changes to start date of crediting period

No changes to the start date of the crediting period.

B.2.4. Permanent changes from registered monitoring plan, applied methodology or applied standardized baseline

No permanent changes from registered monitoring plan and applied methodology.

B.2.5. Changes to project design of approved project

No changes to project design of approved project.

SECTION C. Description of monitoring system applied by the project

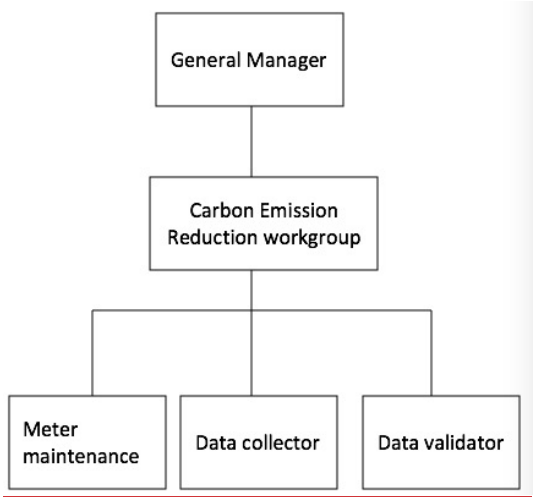
Data collection

1. Data generation: Electricity data are measured by calibrated power meters, which are operated and maintained by the project owner.
2. Data recording and transfer: First, the data measured are manually recorded by onsite staffs in the daily operation report. Second, the onsite manager approves daily operation report and transfers the data to monthly report. Third, at the end of each month, GS VER supervisor checks the monthly report and sends it to Swiss Carbon Assets Ltd.
3. Data aggregation: The calculated net power output is aggregated monthly.
4. Calculation: Total electricity generation ($Q_{OE,y}$), Electricity exported to the glass plant by the Project ($EG_{export,y}$) and Electricity imported to the proposed project from the Grid ($EG_{imported,y}$) per month are the difference between the cumulative values on the power meters. Net electricity

output by the project activity (EGy) is Electricity exported ($EG_{export,y}$) minus Electricity Imported ($EG_{imported,y}$). See section E for calculations of emission reductions.
5. Reporting: The calculated values are included in an Excel sheet and reported in the MR.

Organizational structure, roles and responsibilities

A GS VER supervisor has been appointed and trained who is responsible for the GS VER monitoring system. Monthly recording of power meters falls under the responsibility of the site. Three level training are provided, which are company safety training, workshop safety training and team safety training. The target group of company safety training is all the employees of Yingxin Glass Group, especially the new employees. They receive intensive training on safety before practical operation. When new employees get familiar with general company safety rules, they are allocated to different workshops. The detailed technical training is provided during workshop training. From which employees understand production management and equipment operation. Then employees are allocated to different teams under workshops. Responsibilities to each individual according to his/her position are clarified.
The monitoring organizational structure is shown in following picture 2.



Picture 2. Monitoring organizational structure

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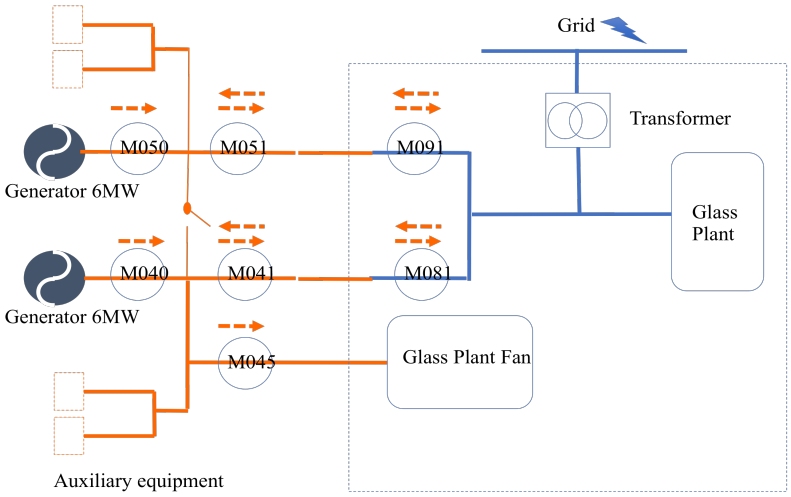
Monitoring flowchart



Picture 3. Monitoring flowchart

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M050 and M040 are used for monitoring total electricity generation ($Q_{OE,y}$).
M045, bidirectional meters M091 and M081 are used for net electricity output by the project activity (EG_y).
M051 and M041, which are installed at generation side, are used to crosscheck M091 and M081.
All meters are calibrated[1] by Shahe Power Supply Company as per Verification Regulation of Electrical Energy Meters with Electronics (JJG596-1999) [2] , Please find Calibration and Accuracy of Meters Sheet below:

Table 2. Calibration of Electricity Meters

[1] All these meters have been calibrated respectively and the five-year calibration frequency is in accordance with the requirement of JJG596-1999.

But according to the MP of the GS-PDD, meter calibration frequency should be once per year. Therefore, a conservative approach is adopted in the calculation of emission reductions for the project activity. Emission reductions can be discounted by applying the maximum permissible error of the electricity meters measuring electricity values. Here the full accuracy level (0.5% for meters M091, M081 and M045) of the electricity meter is applied to the deduction from the electricity supplied to the grid (-0.5% for exports) as well as the increase to the electricity imported from the grid (+0.5% for imports); for calculation of f_{cap}, the full accuracy level of 0.2% for meters M050 and M040 is applied to the increase of total electricity generated by the two generators ($Q_{OE,y}$). So that the net electricity values claiming for emission reductions, which are calculated by deducting electricity imported from electricity exported, will be conservative; and the f_{cap} determined by $Q_{OE,BL}/Q_{OE,y}$ will also be conservative.

[2] In the registered PDD, the standard of Technical Administrative Code of Electric Energy Metering (DL/T448-2000) was referred to. However, as the local calibration company follows the Verification Regulation of Electrical Energy Meters with Electronics (JJG596-1999), which is also a national standard and widely used in the industry. Therefore, it is acceptable.

Meter Measuring	Tag No.	Meter Serial No.	Meter type and model	Specific location	Accuracy (%)	Calibration date (dd/mm/yy)	Valid until (dd/mm/yy)	Certificate No.
$Q_{OE,y}$	050	500006	DSSD331	Generator	0.2S	15/10/2016	14/10/2021	20161016012
$Q_{OE,y}$	040	500004	DSSD331	Generator	0.2S	15/10/2016	14/10/2021	20161016004
$EG_{export,y}$ $EG_{import,y}$	051	500001	DSSD331	Control room	0.2S	15/10/2016	14/10/2021	20161016014
$EG_{export,y}$ $EG_{import,y}$	041	500005	DSSD331	Control room	0.2S	15/10/2016	14/10/2021	20161016063
$EG_{export,y}$	045	550476	DSSD331	Control room	0.5	12/09/2016	11/09/2021	20161016021
$EG_{export,y}$ $EG_{import,y}$	081	006513	DSSD904	Glass furnace room	0.5S	15/10/2016	14/10/2021	20161016102
$EG_{export,y}$ $EG_{import,y}$	091	006519	DSSD904	Glass furnace room	0.5S	15/10/2016	14/10/2021	20161016011

5. Training, Record Keeping

Members of staff who are involved in the project are given training on the GS VER and reporting requirements. New members of staff joining the GS VER project team are also given training in relation to their responsibilities.
The electronic documents and paper records are archived and stored in company office. All the data must be kept for at least two years after the end of the crediting period.

6. Emergency procedures for the monitoring system

In case of malfunction of the meter monitoring electricity exported by the project ($EG_{export,y}$), the recorded amount of electricity exported between the last successful calibration and the next successful repair and calibration or installation of a calibrated new meter shall be neglected and will not be claimed for VERs. At the same time, the technician will be notified to repair or replace the meter. The repaired meter or new meter will be calibrated and the maintenance records will be kept for verification.
In case of malfunction of the meter monitoring electricity imported by the project ($EG_{imported,y}$) or both of the meters ($EG_{export,y}$ and $EG_{imported,y}$) or generation meters ($Q_{OE,y}$), the recorded amount of net electricity output between the last successful calibration and the next successful repair and calibration or installation of a calibrated new meter shall be neglected and will not be claimed for VERs. At the same time, the technician will be notified to repair or replace the meter. The repaired meter or new meter will be calibrated and the maintenance records will be kept for verification.
The abnormal operation of the glass plants will be recorded and electricity generation during that period will not be accounted for credits calculation.

During this monitoring period, no emergency that would impact the monitoring activities occurred and all the meters have been working properly.

SECTION D. Data and parameters

D.1. Data and parameters fixed ex ante or at renewal of crediting period

Relevant SDG Indicator	13.B.1: Number of least developed countries and small island developing States that are receiving specialized support, and amount of support, including finance, technology and capacity-building, for mechanisms for raising capacities for effective climate change-related planning and management, including focusing on women, youth and local and marginalized communities.
Data/parameter:	$Q_{OE,BL}$
Unit	MWh
Description	Output energy (i.e. electricity) that can be theoretically produced (in MWh), to be determined on the basis of maximum recoverable energy from the WECM, which would have been released in the absence of project activity.
Source of data	Feasibility Study Report
Value(s) applied)	86,400 (the total electricity generation)
Choice of data or measurement methods and procedures	Based on equipment specifications and FSR
Purpose of data	Calculation of baseline emissions
Additional comments	/

Relevant SDG Indicator	13.B.1: Number of least developed countries and small island developing States that are receiving specialized support, and amount of support, including finance, technology and capacity-building, for mechanisms for raising capacities for effective climate change-related planning and management, including focusing on women, youth and local and marginalized communities.
Data/parameter:	f_{WCM}
Unit	%
Description	Fraction of total energy generated by the project activity using waste energy. This fraction is 1 if the energy generation is purely from use of waste energy in the project generation unit.
Source of data	FSR and Ex-ante estimation of intermediate energy produced
Value(s) applied)	100
Choice of data or measurement methods and procedures	/

Purpose of data	Calculation of baseline emissions
Additional comments	/

Relevant SDG Indicator	13.B.1: Number of least developed countries and small island developing States that are receiving specialized support, and amount of support, including finance, technology and capacity-building, for mechanisms for raising capacities for effective climate change-related planning and management, including focusing on women, youth and local and marginalized communities.
Data/parameter:	$EF_{grid,CM,y}$
Unit	tCO_2/MWh
Description	CO2 emission factor for the electricity source i (i=gr (grid) or i=is (identified source)), displaced due to the project activity, during the year y in tons CO2/MWh
Source of data	China national public data
Value(s) applied)	0.8935
Choice of data or measurement methods and procedures	Official released statistics; publicly accessible and reliable data source
Purpose of data	Calculation of baseline emissions
Additional comments	/

D.2. Data and parameters monitored

Relevant SDG Indicator	SDG Indicator 7.2.1: Renewable energy share in the total final energy consumption
Data/parameter:	$EG_{export,y}$
Unit	MWh/year
Description	Electricity exported by the project activity to the plant during year y in MWh which is used to calculate emission reduction
Measured/calculated/default	Measured
Source of data	Monitored by power meters (M091, M081 and M045)
Value(s) of monitored parameter	109958.070 MWh in this monitoring period 38298.320 MWh in 2018 71659.750 MWh in 2019
Monitoring equipment	Monitored by standard power meters and recorded by project owner.
Measuring/reading/recording frequency:	Measured continuously, read and recorded daily and aggregated monthly
Calculation method (if applicable):	N/A
QA/QC procedures:	The meters are calibrated according to national Verification Regulation of Electrical Energy Meters with Electronics (JJG 596- 1999). The accuracy of

	meters is no less than 0.5. The detail of the power meter could be seen in section C of this monitoring report. All the data must be kept for at least two years after the end of the crediting period.
Purpose of data:	Calculation of baseline emissions
Additional comments:	/

Relevant SDG Indicator	SDG Indicator 7.2.1: Renewable energy share in the total final energy consumption
Data/parameter:	$EG_{imported, y}$
Unit	MWh/year
Description	Electricity imported by the project activity from the grid during year y in MWh which is used to calculate emission reduction
Measured/calculated/default	Measured
Source of data	Monitored by power meters (M091 and M081)
Value(s) of monitored parameter	72.980 MWh in this monitoring period 27.030 MWh in 2018 and 45.950 MWh in 2019
Monitoring equipment	Monitored by standard power meters and recorded by project owner. The detail of the power meter could be seen in section C of this monitoring report.
Measuring/reading/recording frequency:	Measured continuously, read and recorded daily and aggregated monthly
Calculation method (if applicable):	N/A
QA/QC procedures:	The meters would be calibrated every year according to National Verification Regulation of Electrical Energy Meters with Electronics (JJG 596-1999). The accuracy of meters is no worse than 0.5. The detail of the power meter could be seen in section C of this monitoring report. All the data must be kept for at least two years after the end of the crediting period.
Purpose of data:	Calculation of baseline emissions
Additional comments:	/

Relevant SDG Indicator	SDG Indicator 7.2.1: Renewable energy share in the total final energy consumption & SDG Indicator 13.B.1: Number of least developed countries and small island developing States that are receiving specialized support, and amount of support, including finance, technology and capacity-building, for mechanisms for raising capacities for effective climate change-related planning and management, including focusing on women, youth and local and marginalized communities.
Data/parameter:	EG_y
Unit	MWh/year
Description	Net electricity output by the project activity

Measured/calculated/default	Calculated. $EG_y = EG_{export,\ y} - EG_{imported,\ y}$
Source of data	Power meters
Value(s) of monitored parameter	109885.090 MWh in this monitoring period 38271.290 MWh in 2018 and 71613.800 MWh in 2019.
Monitoring equipment	Monitored by standard power meters and recorded by project owner. The detail of the power meter could be seen in section C of this monitoring report.
Measuring/reading/recording frequency:	Measured continuously, read and recorded daily and aggregated monthly.
Calculation method (if applicable):	$EG_y = EG_{export,\ y} - EG_{imported,\ y}$
QA/QC procedures:	The calculation result is crosschecked with data measured at generation plant.
Purpose of data:	Calculation of baseline emissions
Additional comments:	/

Relevant SDG Indicator	SDG Indicator 7.2.1: Renewable energy share in the total final energy consumption & SDG Indicator 13.B.1: Number of least developed countries and small island developing States that are receiving specialized support, and amount of support, including finance, technology and capacity-building, for mechanisms for raising capacities for effective climate change-related planning and management, including focusing on women, youth and local and marginalized communities.
Data/parameter:	$Q_{OE,y}$
Unit	MWh/year
Description	Quantity of total electricity generation
Measured/calculated/default	Measured
Source of data	Measurement records
Value(s) of monitored parameter	119713.087MWh in this monitoring period 41376.548 MWh in 2018; 78336.539 MWh in 2019.
Monitoring equipment	Two electricity meters (M050 and M040) are used for measuring total electricity generation. It is recorded by project owner. The detail of the power meter could be seen in section C of this monitoring report.
Measuring/reading/recording frequency:	Measured continuously, read and recorded daily and aggregated monthly.
Calculation method (if applicable):	/
QA/QC procedures:	/
Purpose of data:	Calculation of baseline emissions
Additional comments:	/

Relevant SDG Indicator	SDG Indicator 8.5.1 Average hourly earnings of female and male employees, by occupation, age and persons with disabilities.
Data/parameter:	Quality of employment (permanent job positions)
Unit	Persons
Description	Number of employment generated by the project
Measured/calculated/default	N/A
Source of data	HR records
Value(s) of monitored parameter	24
Monitoring equipment	N/A
Measuring/reading/recording frequency:	Annually
Calculation method (if applicable):	N/A
QA/QC procedures:	/
Purpose of data:	/
Additional comments:	/

Relevant SDG Indicator	SDG Indicator 8.5.1 Average hourly earnings of female and male employees, by occupation, age and persons with disabilities.
Data/parameter:	Human and institutional capacity (female employment, number, education)
Unit	Persons
Description	This project provides employment for qualified female and give trainings for them.
Measured/calculated/default	N/A
Source of data	HR records and training records
Value(s) of monitored parameter	2 female
Monitoring equipment	N/A
Measuring/reading/recording frequency:	Annually
Calculation method (if applicable):	N/A
QA/QC procedures:	/
Purpose of data:	/
Additional comments:	/

Relevant SDG Indicator	SDG Indicator 8.5.1 Average hourly earnings of female and male employees, by occupation, age and persons with disabilities.
Data/parameter:	Quantitative employment and income generation (employee income)
Unit	N/A
Description	The project provides employment for qualified people. The project gives equal pay based on the same value of employees provided.
Measured/calculated/default	N/A
Source of data	HR records
Value(s) of monitored parameter	24
Monitoring equipment	N/A
Measuring/reading/recording frequency:	Annually
Calculation method (if applicable):	N/A
QA/QC procedures:	/
Purpose of data:	/
Additional comments:	/

Relevant SDG Indicator	SDG Indicator 8.5.1 Average hourly earnings of female and male employees, by occupation, age and persons with disabilities.
Data/parameter:	Air quality during operating period
Unit	N/A
Description	The project pays attention to the air quality and it is monitored by qualified third party.
Measured/calculated/default	N/A
Source of data	Environment monitoring reports by Shahe Environmental Protection Monitoring Center
Value(s) of monitored parameter	The air quality meets requirement of 'Emission Standard of Air Pollutants for Flat Glass Industry (GB26453-2011)'
Monitoring equipment	N/A
Measuring/reading/recording frequency:	Annually
Calculation method (if applicable):	N/A
QA/QC procedures:	The air condition is monitored according to national standard.
Purpose of data:	/
Additional comments:	/

Relevant SDG Indicator	SDG Indicator 8.5.1 Average hourly earnings of female and male employees, by occupation, age and persons with disabilities.
Data/parameter:	Noise

Unit	N/A
Description	The project has installed noise reduction equipment and provide protection gears for employees.
Measured/calculated/default	Measured
Source of data	Environment monitoring report of noise of the plant boundary by Shahe Environmental Protection Monitoring Center.
Value(s) of monitored parameter	The noise meets requirement of the requirements of 'Emission Standard for Industrial Enterprises Noise at Boundary (GB12348-2008)'
Monitoring equipment	N/A
Measuring/reading/recording frequency:	Annually
Calculation method (if applicable):	N/A
QA/QC procedures:	/ The noise condition is monitored according to national standard.
Purpose of data:	/
Additional comments:	/

Relevant SDG Indicator	SDG Indicator 8.5.1 Average hourly earnings of female and male employees, by occupation, age and persons with disabilities.
Data/parameter:	Water quality
Unit	N/A
Description	The waste water generated by this project are treated by the project owner before they are discharged into municipal sewage system. The discharged water is complied with national discharge standard.
Measured/calculated/default	Measured
Source of data	Environment monitoring report by Shahe Environmental Protection Monitoring Center
Value(s) of monitored parameter	The waste water meets requirement of national standard "Integrated Wastewater Discharge Standard GB 8978-1996"
Monitoring equipment	N/A
Measuring/reading/recording frequency:	Annually
Calculation method (if applicable):	N/A
QA/QC procedures:	/ The waste water condition is monitored according to national standard.
Purpose of data:	/
Additional comments:	/

Relevant SDG Indicator	SDG Indicator 8.5.1 Average hourly earnings of female and male employees, by occupation, age and persons with disabilities.
Data/parameter:	Furnace waste refractory brick disposal
Unit	N/A
Description	Furnace waste refractory brick disposal with proper hazardous waste

	management measures
Measured/calculated/default	/
Source of data	/
Value(s) of monitored parameter	/
Monitoring equipment	N/A
Measuring/reading/recording frequency:	Annually
Calculation method (if applicable):	N/A
QA/QC procedures:	/
Purpose of data:	/
Additional comments:	According to the daily operation records, the furnace was operated normally in this monitoring period. Therefore, no repair occurred and no maintenance records were available and no waste brick was generated. in this monitoring period

D.3. Implementation of sampling plan

Not Applicable.

SECTION E. Calculation of SDG outcomes

E.1. Calculation of baseline value or estimation of baseline situation of each SDG outcome

>> (*Provide details of equations and approaches used to calculate/estimate baseline values.)*

Item	Baseline value
SDG 7	0 MWh
SDG 8	No employment and no trainings
SDG 13	As per the registered PDD and the approved transition documentation, the baseline emissions are calculated: $BE_y = f_{cap} \cdot EG_y \cdot EF_{grid, CM, y}$ where: fcap Energy that would have been produced in project year y using waste energy generated in base year expressed as a fraction of total energy produced using waste source in year y EGy Net electricity output by the project activity $EF_{grid, CM, y}$ Combined Margin Emission Factor in year y The result of the Baseline Emission Factor ($EF_{grid, CM, y}$) calculation was 0.8935tCO_2e/MWh. Detailed calculation of Combined Margin Emission Factor was demonstrated in the registered PDD and EF calculation sheet that were provided to the DOE during the validation.

As the emission factor is fixed for the whole crediting period, the aim of the monitoring is therefore only to monitor the net electricity generated using energy meter. The project proponent used electricity from the grid for start up purpose so both electricity imports and exports are monitored:

$EGy = EG_{export,\ y} - EG_{imported,\ y}$

$EG_{export,\ y}$: Electricity exported by the project activity to the plant

$EG_{imported,\ y}$: Electricity imported by the project activity from the grid

Thus, in this monitoring period:
BE_y = 109885.090MWh * 0.8935 tCO_2e/MWh = 98,181tCO_2e

The BE vintage in 2018 and 2019 are shown in following table.

Parameter	Description	Value in 2018 (214days)	value in 2019 (365days)
$EG_{export,\ y}$	Electricity exported by the project activity to the plant	38298.320	71659.750
$EG_{imported,\ y}$	Electricity imported by the project activity from the grid	27.030	45.950
EGy	Net electricity production by the project activity	38271.290	71613.800
$EF_{grid,CM,y}$	Emission factor	0.8935	0.8935
$Q_{OE,y}$	Total electricity generated by project activity	41376.548	78336.539
fcap	Energy that would have been produced in project year y using waste energy generated in base year expressed as a fraction of total energy produced using waste source in year y	1.00	1.00
BEy	Total baseline emissions	34,195	63,986

Electricity output measured by meter M091 and M081 at recipient side is crosschecked with the output measured by meter M051 and M041 at generation side. The crosschecked results are summarized in the following table and it shows the monitoring system is accurate and reliable, with minor difference due to line loss.

Year	Theoretical Line Loss	Actual Line Loss	Theoretical Line Loss	Actual Line Loss
	M051 - M091	M051 - M091	M041 - M081	M041 - M081
01/06/2018-31/12/2018	0.61%	-0.69%	0.59%	-0.59%
01/01/2019-31/12/2019	0.65%	-0.55%	0.64%	-0.61%
Total	0.64%	-0.60%	0.62%	-0.61%

As shown in the table above, the actual line losses calculated based on actual meter readings during this monitoring period are all slightly different with the theoretical line losses calculated

	based on equipment parameters of electricity transmission line. So, the line loss between generation side and recipient side is reasonable.

E.2. Calculation of project value or estimation of project situation of each SDG outcome

>> (Provide details of equations and approaches used to calculate/estimate project values.)

Item	Project value
SD G 7	Net electricity production by the project activity EGy =$EG_{export, y}$-$EG_{imported, y}$ During this monitoring period (01/06/2018 to 31/12/2019): EGy — Net electricity output by the project activity — 109885.090 — MWh $EG_{export, y}$ — Electricity exported by the project activity to the plant — 109958.070 — MWh $EG_{imported, y}$ — Electricity imported by the project activity from the grid — 72.980 — MWh
SD G 8	1. Quality of employment (permanent job positions) The provides 24 job opportunities for local people during the operation period. The job opportunities include duties in charge of boiler operation, turbine and generator operation, maintenance and repair, and managing the whole plant. The employee list is provided to DOE for verification and could be seen in the appendix 1 Employee list and payment in 2018 and 2 Employee list and payment in 2019. 2. Human and institutional capacity (female employment, number, education) The project provides employment opportunities for those female people that is competent, and offer equal salary based on the similar job duties. In this monitoring period, 2 female are working in the company, which can be seen from the HR record. The project owner has supplied 6 times of trainings for employees on safety requirements and production skills. A questionnaire about the employee's comments on environment and salary was also conducted. Based on the survey, all the employees are satisfied with the working environment and salary. The HR record, training records and questionnaire are supplied to DOE for verification. One sample of the trainings is shown in following appendix 3 Training record in 2018. One sample of the satisfaction survey for working environment and salary is shown in following appendix 4 Training record in 2019. One sample of the survey on employee's satisfaction in 2018 is shown in appendix 5 Survey of employee's satisfaction on environment and salary in 2018. One sample of the survey on employee's satisfaction in 2019 is shown in appendix 6 Survey of employee's satisfaction on environment and salary in 2019. 3. Quantitative employment and income generation (employee income) This project provides considerable salary for employees and this would improve local people's livelihood. The minimum salary in Shahe city of Hebei province is 1590RMB/month since July of 2016 (Jirenshezi [2016]No.108)[3], and 1790RMB/month since November of 2019 (Jirenshefa [2019] No. 34)[4]. The salary of the employee in this project is higher than the lowest salary standard of local city. The salary payment is shown in above figure 1.

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Picture 1. Employee list and payment in 2018 ¶
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[3] https://rst.hebei.gov.cn/a/tongzhi/2016/0701/3524.html

[4] http://www.shaheshi.gov.cn/article/82/49129.html

	4. Air quality during operating period The project owner pays attention to the air quality of the plant. The project owner would annually invite qualified third party to monitor if the air indoor contains benzene, sulfur acid, and hydrogen fluoride. During this monitoring period, no benzene, sulfur acid, and hydrogen fluoride exists in the air. And the monitoring report is shown as following appendix 7. Indoor air quality in 2018 and appendix 8. Indoor air quality in 2019. Besides, the gas quality through exhaust pipe is also monitored. The concentration of SO_2 and particulates are monitored and all of them are in line with national standard. The monitoring report is shown as following appendix 9. Air quality of exhaust pipe in 2018 and appendix 10. Air quality of exhaust pipe in 2019. 5. Noise The project has installed noise reduction equipment and provide protection gears for employees. Through these protection measures, the noise of the company could comply with national standard. The noise monitoring report is shown bellowing appendix 11. Noise of the plant boundary in 2018 and appendix 12. Noise of the plant boundary in 2019. 6. Water quality The waste water generated by this project are treated by the project owner before they are discharged into municipal sewage system. The discharged water is complied with national discharge standard. The monitoring report of water quality is shown bellowing appendix 13. Waste water and waste gas in the plant boundary in 2018 and appendix 14. Waste water and waste gas in the plant boundary in 2019.
SDG 13	As per ACM0012, Project emissions include emissions from supplemental fossil fuel consumption and electricity consumption in the project activity. There is no fossil fuel consumption in the project activity and calculation of baseline emission will take into account of supplemental electricity consumption, therefore, project emission is zero. $PE_y = 0$

E.3. Calculation of net benefits as difference of baseline and project values or direct calculation for each SDG outcome

Item	Net benefit
SDG 7	Project value – Baseline value = 109885.090- 0 =109885.090MWh
SDG 8	Project value – Baseline value = 24 – 0 = 24persons
SDG 13	For the leakage, according to ACM0012, no leakage emissions are considered. Emission reductions of the project are calculated as follows: $ER_y = BE_y - PE_y = 98,181-0=98,181\ tCO_2e$ During this monitoring period (01/06/2018 to 31/12/2019):

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Deleted: picture 11. Noise of the plant boundary in 2018 and ... [6]

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沙河市环
监测结
样品名称 废水、废气 采样地点 总排污
监测日期 见表 采样人 淮雪坡
检测分析结果：
总排污
监测日期	监测项目	
2018 年 9 月 10 日	pH(无量纲)	
	COD_{Cr} (mg/L)	
	悬浮物(mg/L)	
	氨氮(mg/L)	

无组织排
监测日期	监测项目	东厂界
2018 年 9 月 10 日	SO_2 (mg/m³)	0.130
	颗粒物(mg/m³)	0.291

本次监测期间，该企业经化粪池和沉
水综合排放标准》（GB8978-1996）二级
SO_2 排放，均符合《大气污染物综合排放
浓度限值的要求，为达标排放。
检验者

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	Baseline GHG emissions or baseline net GHG removals (t CO_2e)	Project GHG emissions or actual net GHG removals (t CO_2e)	Leakage GHG emissions (t CO_2e)	GHG emission reductions or net anthropogenic GHG removals (t CO_2e)		
				Vintage 2018	Vintage 2019	Total amount
Total	98,181	0	0	34,195	63,986	98,181

E.4. Summary of ex-post values of each SDG outcome for the current monitoring period

Item	Baseline estimate	Project estimate	Net benefit
SDG 7	0	109885.090MWh	109885.090MWh
SDG 8	0	24 persons	24 persons
SDG 13	98,181t CO_2e	0	98,181t CO_2e

E.5. Comparison of actual value of outcomes with estimates in approved PDD

Item	Values estimated in ex ante calculation of approved PDD	Actual values achieved during this monitoring period
SDG 7	120,558.904 MWh	109885.090MWh
SDG 8	24 persons	24 persons
SDG 13	107,719 tCO_2e	98,181t CO_2e

E.6. Remarks on difference from estimated value in approved PDD

Item	Remarks on difference
SDG 7	The actual net electricity generation during the current monitoring period is 8.85% lower than expected amount as per the registered PDD.
SDG 8	No difference
SDG 13	The actual ER during the current monitoring period is 8.85 lower than expected ERs as per the registered PDD.

SECTION F. Stakeholder inputs and legal disputes

F.1. List all inputs/grievances which have been received for the project during the monitoring period together with their respective answers/actions

The PO has implemented continuous input / grievance mechanism expression process, as discussed with local stakeholders. No inputs/grievances received for the project during this monitoring period.

	Method Chosen (include all known details e.g. location of book, phone, number, identity of mediator)	Justification
Continuous Input / Grievance Expression Process Book	Grievance expression book was put in the company office and local villages	kept by the office manager and leader of the villages
Telephone access	+86 319 898 7373 (for project owner) +86 158 1052 7065 (for GS expert)	Local stakeholders can call the working staff of the project owner or GS expert to express their comments, suggestion or even complaint.
Internet/email access	yxbljt@yxbljt.com (for project owner) info@goldstandard.org annyta.luo@goldstandard.org (for GS expert)	Local stakeholders can send email to the project owner or GS expert to express their comments, suggestion or even complaint.

F.2. List all inputs/grievances from previous monitoring period where follow up action is to be verified in this monitoring period

No inputs/grievances from previous monitoring period where follow up action is to be verified in this monitoring period.

F.3. Provide details of any legal contest or dispute that has arisen with the project during the monitoring period

No legal contest or dispute that has arisen with the project during this monitoring period.

Appendix 1. Employee list and payment in 2018

河北迎新玻璃集团有限公司
余热电厂员工工资表 2018 年

序号	姓名	职位	月薪	性别
1	赵秀军	一值值班长	2800	男
2	李志刚	电气值班员	2650	男
3	陈志杰	电气值班员	2600	男
4	李鹏	汽机值班员	2650	男
5	王宇	汽机值班员	2600	男
6	韩日奇	锅炉值班员	2650	男
7	王庆波	锅炉值班员	2600	男
1	张俊平	二值值班长	2800	女
2	王佳恒	电气值班员	2650	男
3	张杰	电气值班员	2600	男
4	申雄伟	汽机值班员	2650	男
5	赵子豪	汽机值班员	2600	男
6	刘鹏路	锅炉值班员	2650	男
7	姚建帅	锅炉值班员	2600	男
1	石志廷	三值值班长	2800	男
2	付言凯	电气值班员	2650	男
3	赵亚伦	电气值班员	2600	男
4	贺晓光	汽机值班员	2650	男
5	刘博涛	汽机值班员	2600	男
6	王刚	锅炉值班员	2650	男
7	张丽	锅炉值班员	2600	女
1	李占青	机电维修工	2800	男
2	刘超	机电维修工	2800	男
3	贾霄星	机电维修工	2800	男

Appendix 2. Employee list and payment in 2019

河北迎新玻璃集团有限公司
余热电厂员工工资表 2019 年

序号	姓名	职位	月薪	性别
1	赵秀军	一值值班长	2850	男
2	李志刚	电气值班员	2700	男
3	陈志杰	电气值班员	2650	男
4	李鹏	汽机值班员	2700	男
5	王宇	汽机值班员	2650	男
6	韩日奇	锅炉值班员	2700	男
7	王庆波	锅炉值班员	2650	男
1	张俊平	二值值班长	2850	女
2	王佳恒	电气值班员	2700	男
3	张杰	电气值班员	2650	男
4	申雄伟	汽机值班员	2700	男
5	赵子豪	汽机值班员	2650	男
6	刘鹏路	锅炉值班员	2700	男
7	姚建帅	锅炉值班员	2650	男
1	石志廷	三值值班长	2850	男
2	付言凯	电气值班员	2700	男
3	赵亚伦	电气值班员	2650	男
4	贺晓光	汽机值班员	2700	男
5	刘博涛	汽机值班员	2650	男
6	王刚	锅炉值班员	2700	男
7	张丽	锅炉值班员	2650	女
1	李占青	机电维修工	2850	男
2	刘超	机电维修工	2850	男
3	贾霄星	机电维修工	2850	男

Appendix 3. Training record in 2018

河北迎新玻璃集团有限公司　　　　记录表格

培 训 记 录

编号：JL-6.2-01　　　　单位：余热电厂

时间：9.13	培训题目：检修发电机时应做好的安全措施	培训教师：张振生
地点：中控室		培训方式：讲授

参加培训人员名单（共 6 人）：

付鲁旭、赵亚伦、陈志杰、王俊恒、张杰、李志刚

培训内容摘要：

① 断开发电机的断路器和隔离开关。

② 断开发电机励磁电源、盘车装置电源的断路器、隔离开关或熔断器。

③ 断开断路器、隔离开关、励磁装置的操作电源及二次回路保险。

④ 在所有已断开的断路器、隔离开关、抽屉开关等操作处悬挂"禁止合闸，有人工作"标示牌。

⑤ 在发电机出口母线处验明无电后装设接地线。

⑥ 断开发电机中性点刀闸。

考核方式及成绩：

考核合格率：

编制：　　审核：　　批准：　　日期：2018.9.13

Appendix 4. Training record in 2019

培 训 记 录

编号:JL-6.2-01　　　　单位：余热电厂

时间：4 16	培训题目： 安全生产	培训教师：张庆杰
地点：中控室		培训方式：讲解

参加培训人员名单（共 6 人）：

张杰、刘超、侯德帆、赵亚伦、张维佳 陈志杰

培训内容摘要：

本次培训重点讲解了安全生产所注意事项，并强调了安全的重要性。培训师带领大家一起学习了安全生产案例并背诵一遍。争取每个人都将安全和警惕意识牢记于心。

高处工作危险因素
锅炉跑水、脱硫等设备
汽轮机运行超速警戒人员应当防护
电气设备
高温热物
化学危害等.

考核方式及成绩：

考核合格率：

编制：　　审核：　　批准：　　日期：2019. 4. 16.

Appendix 5. Survey of employee's satisfaction on environment and salary in 2018

河北迎新玻璃余热发电项目员工满意度调查问卷

Questionnaires of comments by employees

姓名	麻川哥	性别	男
工作部门	余热	职位	职工
日期	2018.7.5	联系方式	

问题

	满意	较满意	一般	不满意
对自己的薪水水平是否满意	√			
对工作环境是否满意	√			
对室内空气质量是否满意	√			
对室内噪音水平是否满意	√			

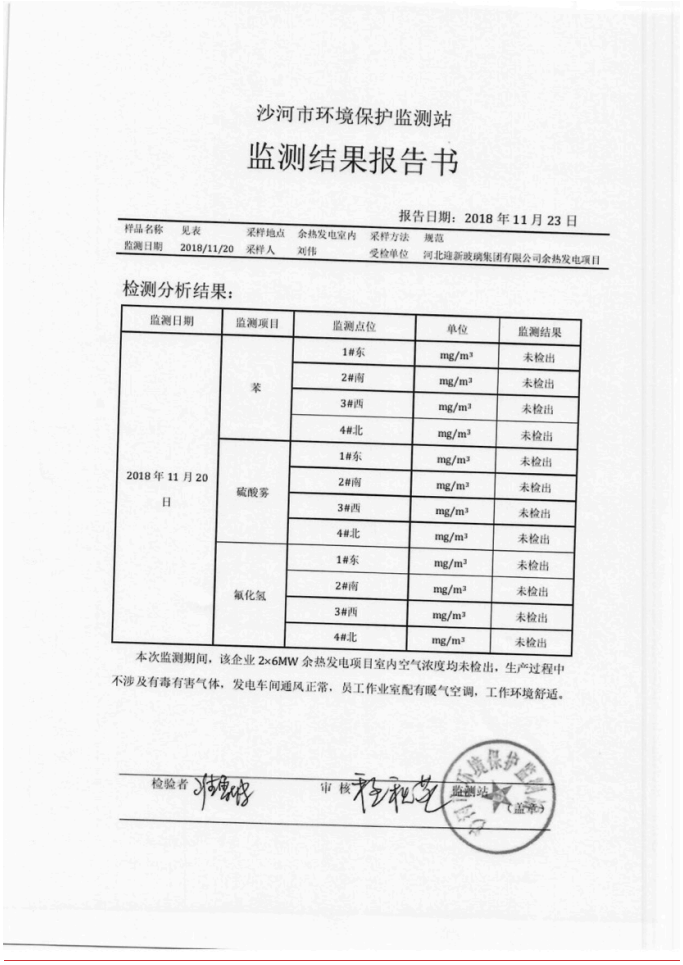
河北迎新玻璃集团有限公司余热发电项目
员工满意度调查问卷

姓名	李鹏	性别	男
职位	汽机值班员	日期	2019.7.8

问题

	满意	较满意	一般	不满意
对自己的工资水平是否满意	✓			
对室内空气质量及工作环境是否满意	✓			
对室内噪音水平是否满意	✓			
对室外空气及环境是否满意	✓			

Appendix 7. Indoor air quality in 2018



沙河市环境保护监测站

监测结果报告书

报告日期：2018 年 11 月 23 日

样品名称	见表	采样地点	余热发电室内	采样方法	规范
监测日期	2018/11/20	采样人	刘伟	受检单位	河北迎新玻璃集团有限公司余热发电项目

检测分析结果：

监测日期	监测项目	监测点位	单位	监测结果
2018 年 11 月 20 日	苯	1#东	mg/m³	未检出
		2#南	mg/m³	未检出
		3#西	mg/m³	未检出
		4#北	mg/m³	未检出
	硫酸雾	1#东	mg/m³	未检出
		2#南	mg/m³	未检出
		3#西	mg/m³	未检出
		4#北	mg/m³	未检出
	氟化氢	1#东	mg/m³	未检出
		2#南	mg/m³	未检出
		3#西	mg/m³	未检出
		4#北	mg/m³	未检出

本次监测期间，该企业 2×6MW 余热发电项目室内空气浓度均未检出，生产过程中不涉及有毒有害气体，发电车间通风正常，员工作业室配有暖气空调，工作环境舒适。

检验者 [illegible] 审核 [illegible] 监测站（盖章）

Appendix 8. Indoor air quality in 2019.

沙河市环境保护监测站

监测结果报告书

报告日期：2019 年 11 月 28 日

样品名称	见表	采样地点	余热发电室内	采样方法	规范
监测日期	2019/11/15	采样人	刘伟	受检单位	河北迎新玻璃集团有限公司余热发电项目

检测分析结果：

监测日期	监测项目	监测点位	单位	监测结果
2019 年 11 月 15 日	苯	1#东	mg/m³	未检出
		2#南	mg/m³	未检出
		3#西	mg/m³	未检出
		4#北	mg/m³	未检出
	硫酸雾	1#东	mg/m³	未检出
		2#南	mg/m³	未检出
		3#西	mg/m³	未检出
		4#北	mg/m³	未检出
	氟化氢	1#东	mg/m³	未检出
		2#南	mg/m³	未检出
		3#西	mg/m³	未检出
		4#北	mg/m³	未检出

本次监测期间，该企业 2×6MW 余热发电项目室内空气中均未检出有毒气体，生产过程中不涉及有毒有害气体，发电车间通风正常，员工作业室配有暖气空调，工作环境舒适。

检验者 审 核 监测站（盖章）

Appendix 9. Air quality of exhaust pipe in 2018

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沙河市环境保护监测站

监测结果报告书

报告日期：2018 年 12 月 26 日

样品名称	废气	采样地点	排气筒	采样方法	规范
监测日期	见表	采样人	李峰	受检单位	河北迪新玻璃集团有限公司余热发电项目

检测分析结果：

监测日期	监测项目	监测结果	标准值
2018 年 03 月 05 日（第一季度）	排气量（Nm^3/h）	49,643	---
	SO_2（mg/m^3）	528	600
	颗粒物（mg/m^3）	77.9	100
2018 年 6 月 4 日（第二季度）	排气量（Nm^3/h）	47,655	---
	SO_2（mg/m^3）	520	600
	颗粒物（mg/m^3）	79.4	100
2018 年 9 月 10 日（第三季度）	排气量（Nm^3/h）	49,913	---
	SO_2（mg/m^3）	536	600
	颗粒物（mg/m^3）	75.2	100
2018 年 12 月 21 日（第四季度）	排气量（Nm^3/h）	51,139	---
	SO_2（mg/m^3）	514	600
	颗粒物（mg/m^3）	64.3	100

本次监测期间，该企业废气排放中各污染因子均符合《平板玻璃工业大气污染物排放标准》（GB26453-2011）表 1 中玻璃熔窑标准限值要求，为达标排放。

检验者 审核 监测站

Appendix 10. Air quality of exhaust pipe in 2019.

沙河市环境保护监测站

监测结果报告书

报告日期：2019 年 12 月 23 日

样品名称	废气	采样地点	排气筒	采样方法	规范
监测日期	见表	采样人	李峰	受检单位	河北迎新玻璃集团有限公司余热发电项目

检测分析结果：

监测日期	监测项目	监测结果	标准值
2019 年 03 月 04 日（第一季度）	排气量（Nm^3/h）	48,321	---
	SO_2 （mg/m^3）	534	600
	颗粒物（mg/m^3）	82.2	100
2019 年 6 月 3 日（第二季度）	排气量（Nm^3/h）	47,301	---
	SO_2 （mg/m^3）	519	600
	颗粒物（mg/m^3）	77.1	100
2019 年 9 月 6 日（第三季度）	排气量（Nm^3/h）	49,516	---
	SO_2 （mg/m^3）	530	600
	颗粒物（mg/m^3）	74.6	100
2019 年 12 月 19 日（第四季度）	排气量（Nm^3/h）	50,724	---
	SO_2 （mg/m^3）	510	600
	颗粒物（mg/m^3）	63.4	100

本次监测期间，该企业废气排放中各污染因子均符合《平板玻璃工业大气污染物排放标准》（GB26453-2011）表 1 中玻璃熔窑标准限值要求，为达标排放。

检验者 审 核 监测站（盖章）

Appendix 11. Noise of the plant boundary in 2018

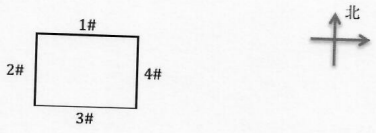
沙河市环境保护监测站

监测结果报告书

报告日期：2018 年 10 月 11 日

样品名称	噪声	采样地点	厂界	采样方法	规范
采样日期	见表	采样人	李峰	受检单位	河北迪新玻璃集团有限公司余热发电项目

检测分析结果：



监测日期	类别	1#北厂界	2#西厂界	3#南厂界	4#东厂界	标准
2018.10.08	昼间	52.6	53.2	57.1	54.7	60
	夜间	42.9	45.1	46.2	43.8	50
2018.10.09	昼间	55.1	55.2	56.5	54.0	60
	夜间	43.3	44.7	45.9	44.9	50

本次监测期间，该企业噪声排放符合《工业企业厂界环境噪声排放标准》（GB12348-2008）中表一 2 级标准要求，为达标排放。

检验者 审核 监测站（盖章）

Appendix 12. Noise of the plant boundary in 2019.

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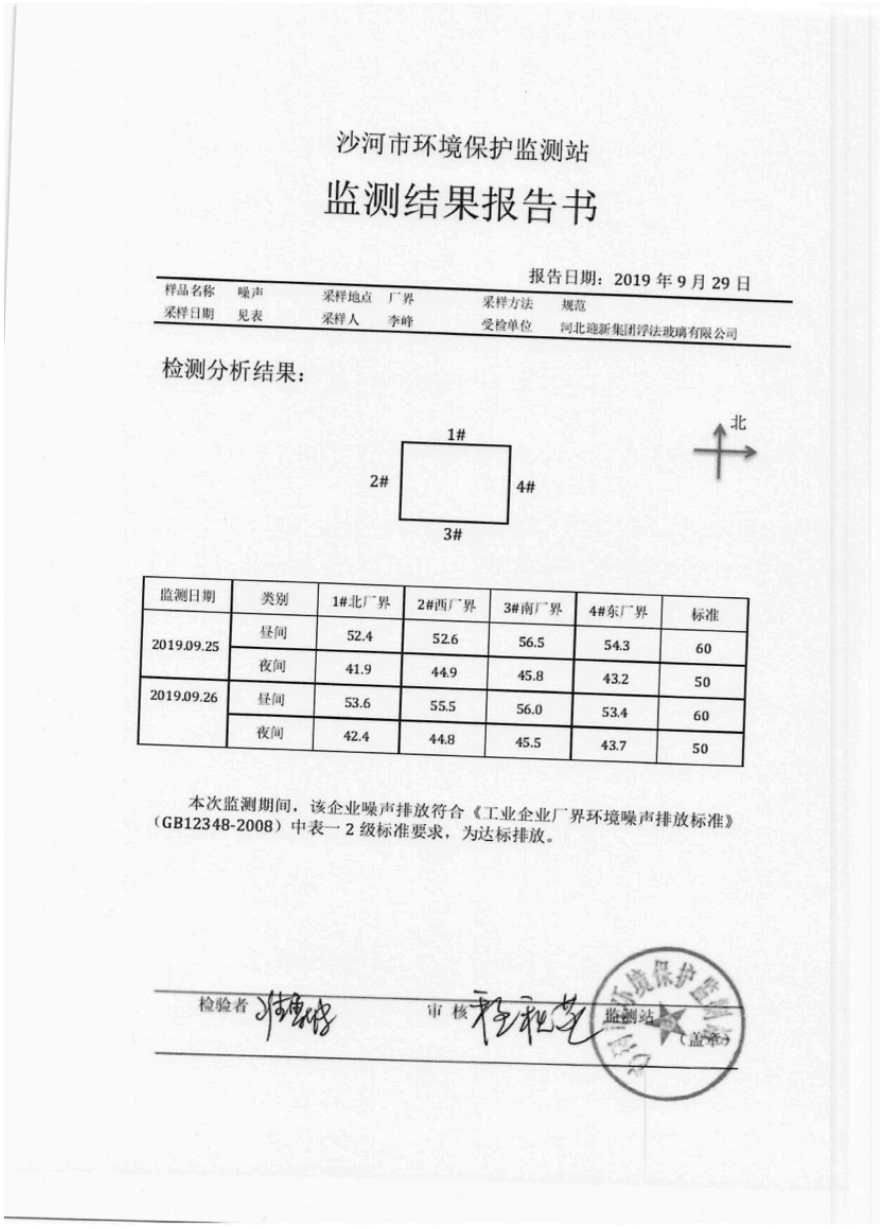


沙河市环境保护监测站

监测结果报告书

报告日期：2019 年 9 月 29 日

样品名称	噪声	采样地点	厂界	采样方法	规范
采样日期	见表	采样人	李峰	受检单位	河北迪新集团浮法玻璃有限公司

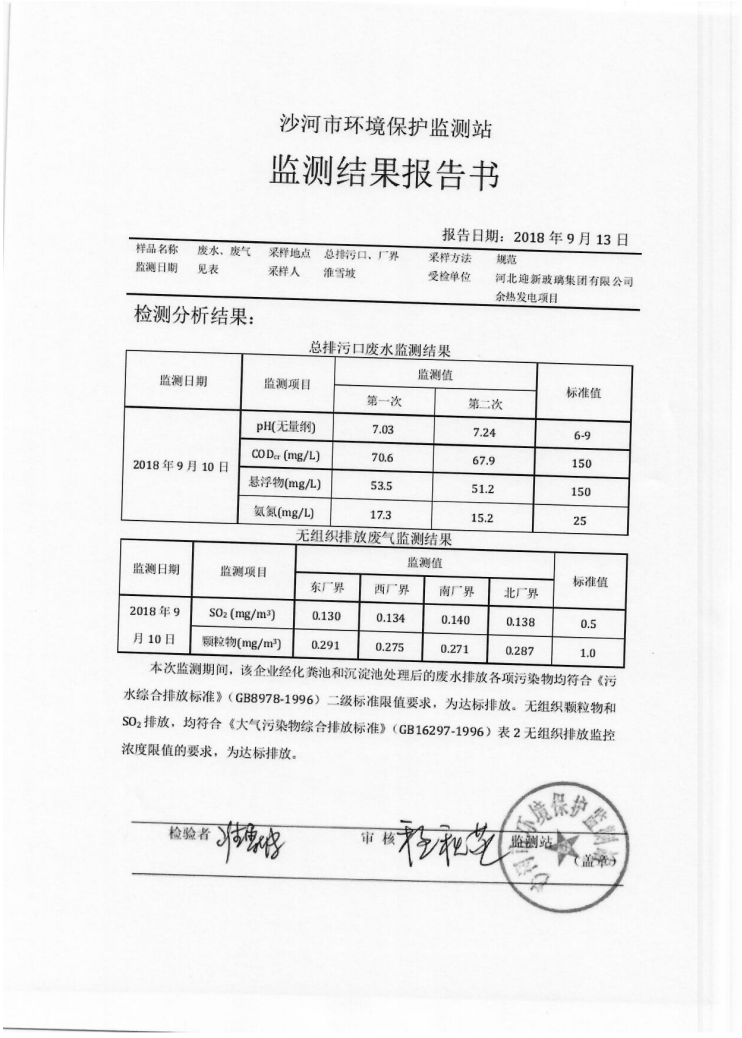
检测分析结果：

监测日期	类别	1#北厂界	2#西厂界	3#南厂界	4#东厂界	标准
2019.09.25	昼间	52.4	52.6	56.5	54.3	60
	夜间	41.9	44.9	45.8	43.2	50
2019.09.26	昼间	53.6	55.5	56.0	53.4	60
	夜间	42.4	44.8	45.5	43.7	50

本次监测期间，该企业噪声排放符合《工业企业厂界环境噪声排放标准》（GB12348-2008）中表一 2 级标准要求，为达标排放。

检验者 审核 监测站（盖章）

Appendix 13. Waste water and waste gas in the plant boundary in 2018



沙河市环境保护监测站

监测结果报告书

报告日期：2018 年 9 月 13 日

样品名称　废水、废气　采样地点　总排污口、厂界　采样方法　规范
监测日期　见表　采样人　淮雪坡　受检单位　河北迪新玻璃集团有限公司余热发电项目

检测分析结果：

总排污口废水监测结果

监测日期	监测项目	监测值		标准值
		第一次	第二次	
2018 年 9 月 10 日	pH(无量纲)	7.03	7.24	6-9
	COD_{Cr} (mg/L)	70.6	67.9	150
	悬浮物(mg/L)	53.5	51.2	150
	氨氮(mg/L)	17.3	15.2	25

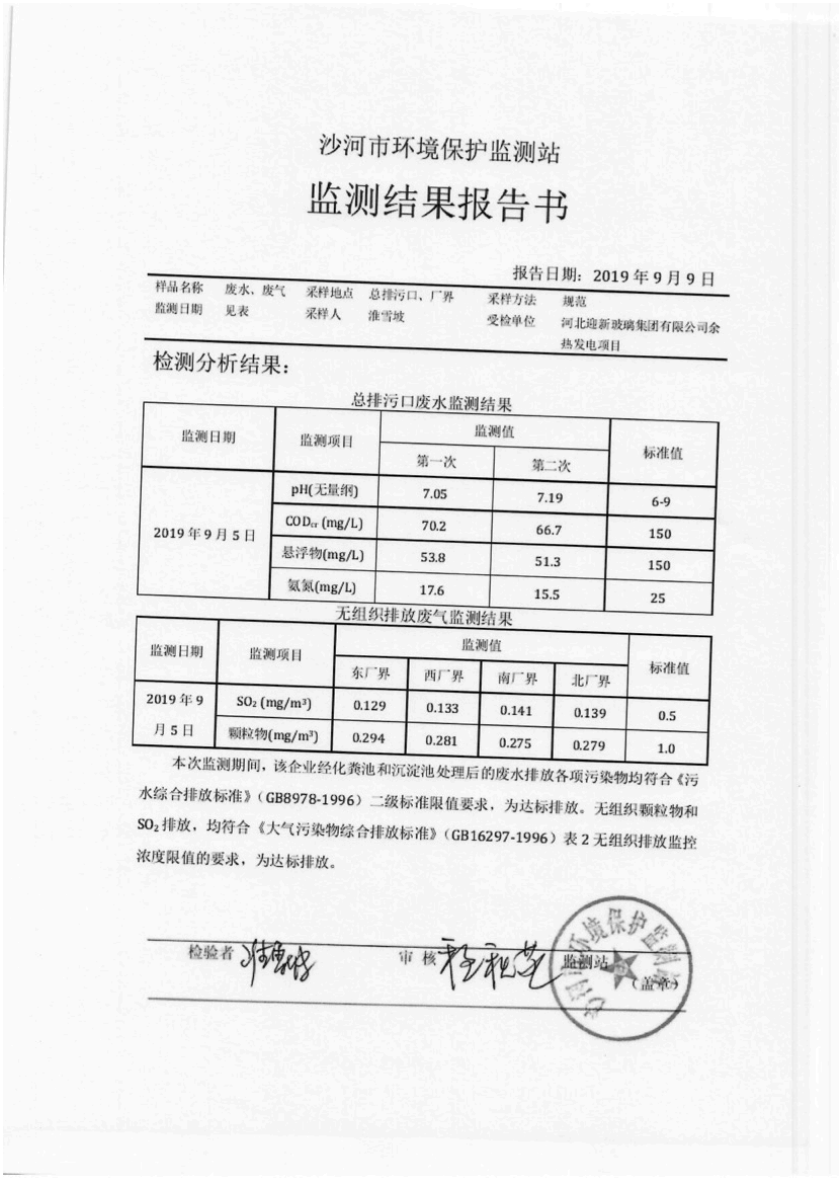
无组织排放废气监测结果

监测日期	监测项目	监测值				标准值
		东厂界	西厂界	南厂界	北厂界	
2018 年 9 月 10 日	SO_2 (mg/m³)	0.130	0.134	0.140	0.138	0.5
	颗粒物(mg/m³)	0.291	0.275	0.271	0.287	1.0

本次监测期间，该企业经化粪池和沉淀池处理后的废水排放各项污染物均符合《污水综合排放标准》（GB8978-1996）二级标准限值要求，为达标排放。无组织颗粒物和 SO_2 排放，均符合《大气污染物综合排放标准》（GB16297-1996）表 2 无组织排放监控浓度限值的要求，为达标排放。

检验者　审核　监测站（盖章）

Appendix 14. Waste water and waste gas in the plant boundary in 2019



沙河市环境保护监测站

监测结果报告书

报告日期：2019 年 9 月 9 日

样品名称	废水、废气	采样地点	总排污口、厂界	采样方法	规范
监测日期	见表	采样人	淮雪坡	受检单位	河北迪新玻璃集团有限公司余热发电项目

检测分析结果：

总排污口废水监测结果

监测日期	监测项目	监测值		标准值
		第一次	第二次	
2019 年 9 月 5 日	pH(无量纲)	7.05	7.19	6-9
	COD_{Cr} (mg/L)	70.2	66.7	150
	悬浮物(mg/L)	53.8	51.3	150
	氨氮(mg/L)	17.6	15.5	25

无组织排放废气监测结果

监测日期	监测项目	监测值				标准值
		东厂界	西厂界	南厂界	北厂界	
2019 年 9 月 5 日	SO_2 (mg/m³)	0.129	0.133	0.141	0.139	0.5
	颗粒物(mg/m³)	0.294	0.281	0.275	0.279	1.0

本次监测期间，该企业经化粪池和沉淀池处理后的废水排放各项污染物均符合《污水综合排放标准》（GB8978-1996）二级标准限值要求，为达标排放。无组织颗粒物和 SO_2 排放，均符合《大气污染物综合排放标准》（GB16297-1996）表 2 无组织排放监控浓度限值的要求，为达标排放。

检验者 [illegible] 审核 [illegible] 监测站（盖章）

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