




# GHG Inventory Verification Report

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## Multek



Site Visit Date: June 10-11, 2021  
Contract No.: CTI/NB-2021-640602  
Prepared By: Li Sanmei

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## Abstract – Verification Opinion

### Level of assurance selected for the verification

- Level of reasonable assurance
- Level of limited assurance

**Substantial Threshold:** 5%

### Scope

#### Organizational boundary:

- Financial Control  Operation Control  Equity Share

**Date of Site Visit:** June 10-11, 2021

**Production and Activity:** Production and Manufacturing of PCB and FPC

**Reporting Year:** 2018

### Standards Applied to Verify GHG Emission Inventory and Report

- ISO 14064-1:2018
- Other Requirements

### Members of Verification Team

Term Leader: Li Sanmei

Members: Nil

### GHG Emission Report Summary

Category	GHG	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	HFCs	PFCs	SF <sub>6</sub>	NF <sub>3</sub>	Total GHG Emission
Category 1	Emission (tCO <sub>2</sub> e/year)	448.20	426.58	4.72	481.17	0.00	0.00	0.00	1,360.66
	Percentage in total emission	32.94%	31.35%	0.35%	35.36%	0.00%	0.00%	0.00%	100.00%
Category 2	Emission (tCO <sub>2</sub> e/year)	268,497.52	0.00	0.00	0.00	0.00	0.00	0.00	268,497.52
	Percentage in total emission	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
Category 3	Emission (tCO <sub>2</sub> e/year)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Percentage in total emission	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Category 4	Emission (tCO <sub>2</sub> e/year)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Percentage in total emission	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Category 5	Emission (tCO <sub>2</sub> e/year)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%
	Percentage in total emission	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Category 6	Emission (tCO <sub>2</sub> e/year)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%
	Percentage in total emission	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Total	Emission (tCO <sub>2</sub> e/year)	268,945.72	426.58	4.72	481.17	0.00	0.00	0.00	269,858
	Percentage in total emission	99.66%	0.16%	0.00%	0.18%	0.00%	0.00%	0.00%	100.00%

**The Emission from each plant area are as follows:**

Plant	Multek	North Campus	South Campus	Shuohong Campus
Total GHG Emission (tCO <sub>2</sub> e)	269,858	184,541	67,137	18,180
Percentage in total emission	100.00%	68.38%	24.88%	6.74%

**Verification Statement and Opinions**

According to the data and information provided by Multek, CTI has carried out the verification activities in accordance with the series of standards of ISO 14064. CTI provides assurance that: the GHG Emission from January 1, 2018 to December 31, 2018 reported by Multek are verifiable and meeting the requirements of the series of standards of ISO 14064.

CTI concludes that: the GHG assertion is substantially correct and fairly statement of GHG data and information. (note: this output relates to the specific level of assurance selected).

## 1 BRIEF INTRODUCTION

### 1.1 Objectives

The verification work is implemented in accordance with ISO 14064-1. To be able to provide a level of reasonable assurance, CTI has implemented the following procedures it considers appropriately:

- Taking sampling test source data to check data and documents.
- Confirming the calculation is correct.
- On-site inspection of instruments and reported GHG Emission.
- Conducting face-to-face interviews and discussions with relevant personnel involved in systems, procedures, and operation control.
- Observations and checking related documents.

For the overall internal control environment and data management system of Multek, CTI has not implemented any verification activities. Likewise, we cannot provide any assurance on any internal control environment and data management system that is not related to the calculation of GHG Emission inventory and the preparation of GHG Emission inventory reports.

CTI confirms that it is not aware of any actual or perceived conflict of interest when completing this agreement.

### 1.2 Scope

CTI is contracted to carry out the verification of the GHG Inventory Report of Multek. The verification has been planned and implemented to provide an opinion at the level of reasonable assurance on whether the 2018 GHG Inventory of Multek has made fair presentation in all material aspects in accordance with the standards of ISO 14064-1.

### 1.3 Level of Assurance

The following matrix diagram illustrates the different levels of assurance selected for the implementation of GHG inventory verification. Therefore, the verification statement and opinions will be concluded based on the selected level of assurance accepted by different interest parties.

Level Selection	Level	Assurance Activity	Substantial Limit, and General Wording in the Assurance Statement
✓	Level 1 Reasonable Assurance	Sampling Plan: Risk-based approach. The detailed sampling plan should match the substantial limits agreed with the intended user and cover both high and medium risk events identified in the risk assessment (including sites, facilities, emission sources and calculations).	The substantive limits of this Level are set by a specific GHG project or agreed by the intended user. Below + a specific percentage (%) means that errors, omissions, and misinterpretations are not substantially exaggerated. Below - a specific percentage (%) means that errors, omissions and misinterpretations are non-substantial underestimations. The actual substantive limits can be calculated from sampled data. The general wording in the assurance statement is: <u>The emission report is substantively correct.</u>
	Level 2 Limited Assurance	Sampling Plan: Risk-based approach. The limited sampling plan should match the substantial limits agreed with the intended user, and cover only high risk events identified in the risk assessment (including sites, facilities, emission sources and calculations).	The substantive limits of this Level are set by a specific GHG project or agreed by the intended user. Below + a specific percentage (%) means that errors, omissions and misinterpretations are not substantially exaggerated. Below - a specific percentage (%) means that errors, omissions and misinterpretations are non-substantially

			underestimations. The actual substantive limits can be calculated from sampled data. The general wording in the assurance statement is: There is no evidence that the emission report is not substantially correct.
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The assurance level selected for this verification activity is a reasonable assurance level.

## 2 METHODOLOGY

The verification activity consists of the following procedures:

- Sampling test of source data to check data and documents.
- Confirming the calculation is correct.
- On-site inspection of instruments and reported GHG emission.
- Conducting face-to-face interviews and discussions with relevant personnel involved in systems, procedures, and operation control.
- Observe and check relevant documents.

According to ISO 14064-1 and CTI’s procedures, we have formulated a verification plan and implemented the verification activities as planned (see the verification plan).

### 2.1 Interviewed Personnel

Name	Department	Title
Macro Xie	EHS	Senior Manager
Dylan Huo	EHS	Manager
Iren Pang	EHS	Assistant Manager
Weijie Liang	EHS	Senior Engineer
Jonly Min	Admin	Assistant Manager
YuYing Wen	HR	Senior Specialist
Andy Deng	SCM	Senior Engineer
Guoquan Liang	FS	Engineer
Henry Li	FIN	Senior Tax Analyst

### 2.2 Documents Checked

The table below sets out the documents assessed in the process of verification:

Activity and Emission Source	Document
<b>Identify the Emission Source</b>	
List of emission sources	<input checked="" type="checkbox"/> List of equipment <input checked="" type="checkbox"/> List of emission sources
<b>Understand Management System and Methodology</b>	

Activity and Emission Source	Document
<ul style="list-style-type: none"> <li>Responsibilities for implementing GHG</li> <li>Management Plan</li> </ul>	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Organization Structure Chart</li> <li><input checked="" type="checkbox"/> GHG Management Plan</li> </ul>
Training	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Training Manual</li> <li><input checked="" type="checkbox"/> Procedure Manual</li> <li><input checked="" type="checkbox"/> Training records</li> </ul>
Methodology	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Protocol applied</li> </ul>
<b>Verify Emission Estimates</b>	
Direct Emission from mobile combustion ( <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> Not Applicable)	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Purchase invoice</li> <li><input checked="" type="checkbox"/> Refueling cost breakdown</li> <li><input type="checkbox"/> Mileage of vehicles</li> <li><input type="checkbox"/> List of vehicles</li> <li><input checked="" type="checkbox"/> Emission factors</li> </ul>
Direct Emission from stationary combustion ( <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> Not Applicable)	<ul style="list-style-type: none"> <li><input type="checkbox"/> Purchase invoice</li> <li><input checked="" type="checkbox"/> Fuel purchase records</li> <li><input checked="" type="checkbox"/> List of emission facilities</li> <li><input checked="" type="checkbox"/> Emission factors</li> </ul>
Direct Emission from process activities ( <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> Not Applicable)	<ul style="list-style-type: none"> <li><input type="checkbox"/> Statistics</li> <li><input checked="" type="checkbox"/> Purchase orders</li> <li><input checked="" type="checkbox"/> Calculation method</li> <li><input checked="" type="checkbox"/> Emission factors</li> </ul>
Direct fugitive Emission: <ul style="list-style-type: none"> <li>Refrigeration system (<input checked="" type="checkbox"/>Applicable <input type="checkbox"/>Not Applicable)</li> <li>Fire-fighting System (<input type="checkbox"/>Applicable <input checked="" type="checkbox"/>Not Applicable)</li> <li>Septic tank/sewage treatment tank (<input checked="" type="checkbox"/>Applicable <input type="checkbox"/>Not Applicable)</li> <li>SF<sub>6</sub> (<input type="checkbox"/>Applicable <input checked="" type="checkbox"/>Not Applicable)</li> <li>Others: Nil</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Refrigerant charging records</li> <li><input checked="" type="checkbox"/> Refrigerant purchase records</li> <li><input checked="" type="checkbox"/> Calculation method</li> <li><input checked="" type="checkbox"/> Emission factors</li> <li><input type="checkbox"/> Charging records</li> <li><input type="checkbox"/> Calculation method</li> <li><input type="checkbox"/> Emission factors</li> <li><input checked="" type="checkbox"/> Calculation method</li> <li><input checked="" type="checkbox"/> Emission factors</li> <li><input type="checkbox"/> SF<sub>6</sub> charging records</li> <li><input type="checkbox"/> Calculation method</li> <li><input type="checkbox"/> Emission factors</li> <li>Nil</li> </ul>
Indirect Emission from electricity consumption ( <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> Not Applicable)	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Monthly electricity bill</li> <li><input checked="" type="checkbox"/> Invoice for electricity bill payment</li> <li><input checked="" type="checkbox"/> Emission factors</li> </ul>
Indirect Emission from a CHP facility, imported steam, district heating, and district cooling ( <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> Not Applicable)	<ul style="list-style-type: none"> <li><input type="checkbox"/> Monthly utilities bill</li> <li><input type="checkbox"/> Fuel and efficiency data from suppliers</li> <li><input type="checkbox"/> Emission factors</li> </ul>
<b>Other Procedures and Records</b>	
	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> EHS-WTI-006A_ GHG Management Procedure</li> <li><input checked="" type="checkbox"/> EHS-PCI-005A_ Operational Guidelines for Inventory of Greenhouse Gas Emission</li> </ul>

### **2.3 Internal Quality Control**

Before submitting the report, the verification report undergone an independent review. The independent review is carried out by an independent peer reviewer who meets the organization's GHG verification requirements of the CTI Certification Ability Management Program.



### 3 VERIFICATION CHECKLIST

The results of the implemented verification process are listed in the verification checklist below. All clarifications (CLs), corrective action requests (CARs), and comments are listed in the "Notes" column.

Verification Checklist	Yes/No/N/A	Notes
<b>1. General Management</b>		
Can you ask the appropriate operation and management personnel for advice?	Yes	The Organization has established a GHG inventory team, consisting of members from EHS, FS, SCM, Admin, FIN and HR, who have received relevant GHG internal auditor training and implemented the GHG inventory accordingly.
Is anyone responsible for managing and reporting GHG Emission? Is he/she qualified to do this?	Yes	A GHG inventory team has been set up to be responsible for the GHG emission project. The team leader is responsible for the management and reporting of GHG emission. The designated representatives of relevant departments have participated in the training and shouldered the responsibility for the project.
Is proper training provided to personnel appointed to report GHG Emission?	Yes	Checked training records that relevant personnel had been provided external and internal training.
<b>2. Reporting Boundaries</b>		
Are the reporting boundaries of the Reporter clearly defined? What consolidation approach is adopted (equity share approach, financial control approach, or operational control approach)?	Yes	The operational control approach is adopted.
Does it involve GHG removal?	No	No GHG removal is involved.
Are other key principles for reducing Emission clearly defined?	N/A	
Do the reporting boundaries of the Reporter reflect its business structure?	No	
Has the lease problem been adequately resolved?	N/A	
Does it include all the facilities in the defined location?	Yes	All production and living activities related to GHG Emission are within the defined boundaries.

Verification Checklist	Yes/No/N/A	Notes
<p>Is there an exclusion of GHG sources? Is there a defined substantial threshold?</p>	<p>Yes</p>	<p>The threshold to exclude a source is 0.5%, with a total exclusion amount not exceeding 1% of the total Emission of the Organization. The substantial deviation is set to be: 5%. That is, if an omission, error or misinterpretation results in an organization-level emission deviation within 5%, it is considered to be within the acceptable deviation range and does not affect the Organization's GHG management and/or decision-making. The information of excluded emission sources is as follows: R22 (split air conditioner): It is a substance controlled by the Montreal Protocol. The Company only identifies it without quantifying.</p>
<p><b>3. GHG Emission Sources</b></p>		
<p>Have all types of emission sources within the Reporter's boundaries been considered?</p>	<p>Yes</p>	<p>The information on identified and quantified emission sources is as follows: Category 1: Direct GHG Emission</p> <ul style="list-style-type: none"> <li>• Stationary combustion sources: generators/forklifts (diesel), atomic absorption spectrometer (acetylene)</li> <li>• Mobile combustion sources: official vehicles (gasoline/diesel)</li> <li>• Sources of fugitive Emission from human activities: Septic tank (CH<sub>4</sub>), PLASMA (CO<sub>2</sub>), Cold water engine (R134a), compressed air refrigeration dryer (R404a)</li> <li>• Sources of Emission from industrial process: vertical PTH lines (KMnO<sub>4</sub>)/horizontal electroplating lines (NaMnO<sub>4</sub>), Laser driller (CO<sub>2</sub>), PLASMA (CF<sub>4</sub>)</li> </ul> <p>Category 2: Indirect GHG Emission from Imported Energy</p> <ul style="list-style-type: none"> <li>• Purchased electricity</li> </ul>
<p>Does the GHG Emission inventory consider all the following GHGs?</p> <ul style="list-style-type: none"> <li>• CO<sub>2</sub></li> <li>• CH<sub>4</sub></li> <li>• N<sub>2</sub>O</li> <li>• HFCs</li> <li>• PFCs</li> <li>• NF<sub>3</sub></li> <li>• SF<sub>6</sub></li> </ul> <p>Should any of the above gases be excluded, is there any</p>	<p>Yes</p>	<p>This GHG inventory only involves CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O and HFCs.</p>

Verification Checklist	Yes/No/N/A	Notes
reason provided?		
Has the activity level of each emission source been identified? Is their use clearly stated?	Yes	A customized excel form has been used as the template for information and data collection, and the activity data, emission factors, and calculation process of each emission source are clear and accurate.
Is the activity level of each emission source supported by appropriate data and records (source data)?	Yes	There is an activity data management sheet in excel form, which identifies activity data, units, measurement methods, data levels, recording methods, and original record storage departments.
Were there any outsourcing activities that year?	Yes	Product transportation vehicles and canteens are provided by outsourcers.
Were there any mergers, acquisitions and divestitures in the reporting year? If there is a pre-determined baseline, is it adjusted accordingly?	No	
<b>4. Quantitative Methodology</b>		
Have you used appropriate calculation methods/procedures to manage GHG emission from the source and justify any change thereto?	Yes	The selected quantitative methodology is appropriate. The organization has implemented the uncertainty assessment.
Is the quantification approach based on credible, accurate and recent reference data?		
Are they appropriate considering the uncertainties/risks related to emission?		
Are all emission that are considered insignificant also recorded?	Yes	
Are appropriate methods used to manage and implement the Company's overall GHG Emission reporting items?	Yes	
<b>5. Data Calculation</b>		
Is activity data based on appropriate sources and collected for the quantification approach?	Yes	
Is activity data the most accurate information available?	Yes	
Is the used emission factor most appropriate and why?	Yes	
If the reporter uses alternative emission factors, have they been recorded and reasonably explained?	N/A	
For each emission source, is there a correct emission result obtained by multiplying the emission factor by the activity level?	Yes	All emission categories and subcategories and all types of GHG Emission have been calculated and summarized individually. All emission sources are considered.

Multek 2018 (base year) Organization's GHG Emission Verification Report

Verification Checklist	Yes/No/N/A	Notes
<ul style="list-style-type: none"> <li>- Considered all emission sources</li> <li>- Unit conversion</li> <li>- Exclusion and quantity of GHG emission</li> <li>- Level of assurance and actual quantitative uncertainty</li> </ul>		<p>No problems found in unit conversion. There are no excluded calculations.</p>
<p>Are all emission converted into tCO<sub>2</sub>-e?</p>	Yes	
<p>Can the sum of these values represent the Reporter's total emission?</p>	Yes	<p>The total emission in 2018 were 269,858 tCO<sub>2</sub>e.</p>
<p>Are the total emission appropriate relative to the scale and operation of the Reporter?</p>	Yes	
<p>Are the emission reported that year significantly different from those of previous years?</p>	N/A	
<p>If the reporter has more than one facility, is the degree of aggregation or decomposition of the data in the list appropriate?</p>	N/A	
<p>Have the cumulative changes in the reported emission been updated since the last baseline?</p>	N/A	
<p>Has the baseline been recalculated?</p>	N/A	
<p>Is the deviation between the verification team's emission estimate and the Reporter's result insubstantial?</p>	No	
<p><b>6. Base Year</b></p>		
<p>Consider the choice of base year and its applicability.</p>	Yes	<p>The fixed benchmark year approach is applied. By taking 2018 as the benchmark year, its total Emission are 269,858 tCO<sub>2</sub>e, the carbon emission per unit product is 248.44 kgCO<sub>2</sub>e/m<sup>2</sup>; the carbon emission per unit output value is 992.17 kgCO<sub>2</sub>e/CNY10,000.</p>
<p>If applicable, describe the adjustment methods for base year Emission changes caused by mergers, acquisitions, divestitures, and outsourcing.</p>	Yes	<p>When changes in total emission due to mergers, acquisitions, divestitures and outsourcing are greater than 5%, the benchmark year will be revised according to the new changes.</p>
<p>Is the implementation of any changes consistent (with reduction of emission and increase of emission)?</p>	N/A	<p>Considering that the technology of GHG inventory and many other factors may affect the data of the benchmark year, Multek will recalculate the benchmark year when the change in the total Emission (CO<sub>2</sub>e) resulting from the following is more than the significant limit of 5% (±5) %):</p>
<p>Describe the adjustment method for changes in baseline emission due to changes in calculation methods, emission factors, or correction of errors.</p>		

Verification Checklist	Yes/No/N/A	Notes
		(1) a structural change in reporting or organizational boundaries (i.e. merger, acquisition or divestiture); (2) a change in calculation methodologies or emission factors. (3) commit a major mistake or a number of accumulated mistakes. The organization should not recalculate its benchmark year GHG inventory if changes in the facility production level, including the run or shutdown of the facilities.
<b>7. GHG Inventory Quality Management</b>		
Is an appropriate document created to support or specify activities related to the reporting of GHG Emission? Has this document been properly maintained?	Yes	Multek has established and maintained GHG quantification and reporting management procedures.
Does the Reporter have documented GHG information management procedures to ensure the accuracy and completeness of the inventory, identify errors and omissions, and archive GHG inventory records?	Yes	
Are there any available quality assurance measures for uncertainties and data processing in order to minimize errors?	Yes	
When calculating the final inventory result, are there any procedures designed to avoid data errors?	Yes	
Are all possible sources of error taken into account?	Yes	
Are all GHG data monitoring instruments well maintained and calibrated in accordance with the requirements of the procedure documents?	Yes	All billing electric meters are maintained and calibrated by the supplier.
Are the procedure documents for record keeping in place?	Yes	
Are the documents retention arrangements in operation and effective?	Yes	
Is there a clear and transparent audit trail of documents, data and records to support any calculations, assumptions or decisions?	Yes	The collection, summary, calculation, supporting evidence and other information of activity data are traceable and sorted out in a customized excel form.
Are relevant records retained for an appropriate period?	Yes	Records are kept for 5 years.
Can the verifier see all relevant records supporting the GHG statement?	Yes	
Is the date transferred or adjusted correctly (if any)?	N/A	

Verification Checklist		Yes/No/N/A	Notes
<b>8. Emission Reduction Activities</b>			
Are there any targets set to reduce GHG Emission?		Yes	Emission Reduction Target: Taking 2018 as the benchmark year, from 2021 to 2030, reduce GHG emission by 50%.
Is there any compensation project in the inventory? If yes, please describe such compensation project.		N/A	No compensation project involved.
Has the compensation project been approved by any competent authority?		N/A	
Has the compensation project been correctly calculated and converted into tCO <sub>2</sub> -e?		N/A	
Please describe the calculation method and how the compensation is evaluated. If the compensation is not calculated correctly, please evaluate how substantial is the deviation.		N/A	
Has the compensation been deducted from the total Emission to obtain the correct net total emission?		N/A	
Are there any plans to implement emission reduction initiatives? Please describe all listed emission reduction initiatives.		Yes	2020 Emission Reduction Initiatives: 1. Multek north campus has invested two sets of new high-efficiency central air-conditioning unit with annual electricity saving 5,218,560 KWH. 2. Multek north campus has invested two sets of new high-efficiency air compressor with annual electricity saving 7,508,162 KWH.
Have the emission reduction initiatives been implemented?		Yes	The energy conservation effect evaluation of the energy conservation measures implemented in 2019 as follows. 1. Multek south campus had invested new high-efficiency central air-conditioning unit to replace old one with annual electricity saving 2,059,000 KWH. 2. The south campus had replaced old motors with the YE3 series high-efficiency ones with annual electricity saving 1,237,600 KWH.

## 4 VERIFICATION FINDINGS

### 4.1 Site Verify

The organizational boundaries of this report including all production and operation activities related to GHG emission in the plant area and living area of Multek Industries Ltd. (North Campus) locates at No. 2 Xintang Road, Xinqing Science & Technology Industrial Park, Jingan Town, Doumen District, Zhuhai City, Guangdong Province, PRC, and Multek China Ltd. (South Campus) locates at No. 2021, Zhufeng Road, Xinqing Science & Technology Industrial Park, Jingan Town, Doumen District, Zhuhai City, Guangdong Province, PRC, and Multek Zhuhai Ltd. (Shuohong Campus) locates at No. 3 Haiye East Road, Sanzao Town, Jinwan District, Zhuhai City, Guangdong Province, PRC.

The reporting boundaries included in the calculation include:

Category	Subcategory	Specific Description of Emission Source
Category 1: Direct GHG emission	Stationary combustion sources	Generators/forklifts (diesel)
		Atomic absorption spectrometer (acetylene)
	Mobile combustion sources	Official vehicles (gasoline)
		Official vehicles (diesel)
	Sources of fugitive emission from human activities	Septic tank (CH <sub>4</sub> ) PLASMA / Laser drilling machine (CO <sub>2</sub> ) Cold water engine (R134a) Compressed air refrigeration dryer (R404a)
Sources of emission from industrial process	Vertical Electroplating line (KMnO <sub>4</sub> ) Horizontal Electroplating lines (NaMnO <sub>4</sub> ) PLASMA (CF <sub>4</sub> )	
Sources of emission from land use, land use change and forestry	Not involved.	
Category 2: Indirect GHG emission from Imported Energy	Imported energy	Purchased electricity

Note 1: Exclude refrigerant R22. The reasons for exclusion are as follows:  
R22 (split-type air conditioner): It is a substance controlled by the Montreal Protocol. Multek only identifies it without quantifying.

Relevant GHG inventory responsibilities are stipulated in the procedure documents and GHG inventory report. The preliminary inspection included inventory, records, data calculations, summaries and GHG information management system.

The verification team has conducted on-site inspections of all production processes and physical buildings. Accordingly, the data calculation, summary and data source availability of major emission sources were checked.

A sampling plan based on risk assessment is used as an integral part of the on-site verification plan.

CTI implemented a verification plan through sampling and on-site verification according to the agreed level of reasonable assurance and concluded that the total GHG Emission of Multek in 2018 are verified to be 269,858 tCO<sub>2</sub>e, while the carbon Emission per unit product and the carbon emission per unit output value are respectively 248.44 kgCO<sub>2</sub>e/m<sup>2</sup> and 992.17 kgCO<sub>2</sub>e/CNY10,000, which meet the substantial threshold of 5%.

In addition, CTI recommends that Multek should strengthen the management of the following GHG inventory practices, and continuously improve the data quality:

- Split the annual target.
- Guarantee continual funds to implement energy conservation.



## Appendix:

### Multek GHG emission practices

#### 1.Cleaner power usage

Multek has set up solar photovoltaic power generation system on north and south campus building roofs since 2012, this power generation system is in parallel connection with low voltage power grid inside workplaces to support operation production. It can generate 1223616KW annually, which converts GHG emission reduction 1023.8t annually (Based on solar power generated in 2018).



## 2. Air-compressor energy efficiency improvement project

Multek had upgraded 2 sets newly high-efficient centrifugal air-compressors(1628KW) to replace 31 sets old screw air-compressors (total power capacity:2497KW), which costed 6.63 million RMB.

This can save 7508160KW electricity annually which converts GHG emission reduction 6282.077t annually.

The old screw air-compressors:



Newly high-efficient centrifugal air-compressors:



**3. Central air-conditioner optimization project: Old screw air-conditioners replaced with Newly high-efficient centrifugal air-conditioners**

Multek had upgraded 2 sets newly high-efficient centrifugal air-conditioners(518KW) to replace 6 sets old screw air-conditioners (total power capacity:1122KW), which costed 6.23 million RMB.

This can save 5218560KW electricity annually which converts GHG emission reduction 4366.369t annually.

The old screw air-conditioners:



Newly high-efficient centrifugal air-conditioners:

