

Certification Evaluation Report

Roundtable on Sustainable Biomaterials

Company Name: Beijing Shougang LanzaTech New Energy Science and Technology Co., Ltd.

SCS Certificate Code: SCS-RSB/PC-0003

Jingtang Iron & Steel Co. Caofeidian Industry Park, Tangshan City, Hebei Province, China
Mrs. Nancy Dong

CERTIFIED	EXPIRATION
October 22, 2015	October 21, 2017

DATE OF FIELD AUDIT
September 28-29, 2015
DATE OF LAST UPDATE
October 20, 2015

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FOREWORD

SCS Global Services (SCS) is a certification body accredited by the Roundtable on Sustainable Biomaterials (RSB) to conduct evaluations of biofuel operators. Under the RSB/SCS certification system, participating operators meeting international standards of biofuel production can be certified as “sustainable,” thereby permitting the Operators use of the RSB endorsement and logo in the marketplace subject to regular RSB/SCS oversight.

SCS deploys interdisciplinary teams of natural resource specialists and other experts all over the world to conduct evaluations of biofuel operations. SCS evaluation teams collect and analyze written materials, conduct interviews with Participating Operator’s staff and key stakeholders, and complete field and office audits of the operation(s) identified in the certification scope. Upon completion of the fact-finding phase of all evaluations, SCS teams determine compliance to the RSB Principles and Criteria.

Please Note: An RSB certificate itself does not constitute evidence that a particular product supplied by the certificate holder is certified to RSB standards. Products offered, shipped or sold by the certificate holder can only be considered covered by the scope of this certificate when the required RSB claim is clearly stated on-product. For more information about the RSB, visit their website at www.rsb.org.

Organization of the Report

This report of the results of our evaluation is divided into two sections. Section A provides the public summary and background information that is required by the Roundtable on Sustainable Biomaterials. This section is made available to the general public and is intended to provide an overview of the evaluation process, the management programs and policies applied to the Participating Operator, and the results of the evaluation. Section A will be posted on the RSB Participating Operators Database (<http://rsb.org/certification/participating-operators/>). Section B contains more detailed results and information for use by the Participating Operator.

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SECTION A – PUBLIC SUMMARY

1.0 GENERAL INFORMATION

1.1 Operator Information

1.1.1 Name and Contact Information

Organization name	Beijing Shougang LanzaTech New Energy Science and Technology Co., Ltd. (hereafter, the “Joint Venture”)		
Operator Number	538		
Contact person	Mrs. Nancy Dong		
Address	Jingtang Iron & Steel Co.	Telephone	86-10-57537566
	Caofeidian Industry Par,	Fax	86-10-57537567
	Tangshan City, Hebei	e-mail	dong.yan.nancy@sghtne.com
	Province, China	Website	(none)

1.2 Scope of Certificate

Please choose one:	<input type="checkbox"/> RSB EU RED	<input checked="" type="checkbox"/> RSB Global
The scope assessment agrees with the scope under which the operator applied	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
If no, please explain:		

Note: If the scope is different, please contact SCS.

FACILITIES	
Name	Beijing Shougang Lanza Tech New Energy Science and Technology Co., Ltd.
Type	<input type="checkbox"/> Agriculture Milling and/or Fermentation
	<input checked="" type="checkbox"/> Biofuel Production and/or Distribution
	<input type="checkbox"/> Other: please explain here
Location/City	Tangshan City
Geographic location (<i>Latitude & Longitude</i>)	38.949413 N, 118.502005 E
Number of processing steps	-
Description of Production/Processing Activities:	
LanzaTech CO/H ₂ fermentation process uses a variety of CO-rich feed gases to produce ethanol via microbial fermentation. The process has the following steps: 1- Inoculator 2- Bioreactors	

- 3- Media Preparation and Fermentation Additives
- 4- Vent Gas Handling System
- 5- Broth Storage Tank
- 6- CIP (Cleaning-in-Place) System
- 7- Distillation Plant
- 8- Wastewater Treatment and Recycle

1.3 Standards Used

1.3.1 Applicable RSB-Accredited Standards

Title	Version	Date of Finalization
RSB Principles & Criteria (RSB-STD-01-001)	V2.1	March 2011
RSB Standard for certification of biofuels based on end-of-life-products, by-products and residues (RSB-STD-01-010)	V1.6	November 2013
RSB Standard for Participating Operators (RSB-STD-30-001)	V3.0	June 2014
RSB Risk Management (RSB-STD-60-001)	V3.0	May 2014
Procedure on Communication and Claims (RSB-PRO-50-001)	V3.1	September 2014
All standards employed are available on the websites of the Roundtable on Sustainable Biomaterials (http://rsb.org/sustainability/rsb-sustainability-standards/). Standards are also available, upon request, from SCS Global Services (http://www.scsglobalservices.com/).		

2.0 EVALUATION PLANNING & PROCESS

2.1 Documentation Submitted by Operator

RSB Self Risk Assessment	Risk management plan
RSB Self Evaluation	RSB Screening Exercise
RSB Application	HSE management plan
Information regarding the operation of the demonstration plant's installed water treatment facility	Volume information concerning the liters of ethanol produced
Health, safety, and environmental training records	Copies of public communications made since January 2014

2.2 Audit Type and Determination

The following table summarizes the audit types for RSB Audits:

	Low risk class	Medium risk class	High risk class
Certificate validity	2 years	2 years (pending successful surveillance audit)	1 year
Main audit	Every 2 years	Every 2 years	Every year
Surveillance audit	-	Every year	-

2.3 Audit Team

2.3.1 Determination of Audit Team

- Desk audits shall always be conducted by at minimum one (1) international lead auditor. The lead auditor appointed may include additional auditors and/or technical experts in the audit team if this is required by the extent of the audit.
- Field audits shall always be led by one (1) international lead auditor.
- The lead auditor appointed shall include at minimum one (1) local auditor in the audit team. The lead auditor appointed may include additional auditors and/or technical experts in the audit team if this is required by the extent of the audit.
- For field audits of participating operators in High Risk class shall always the lead auditor appointed shall appoint at minimum
 - one (1) local auditor and
 - one (1) technical expert on social issues to evaluate compliance with social requirements and the risk of non-compliance due to social issues and
 - one (1) technical expert on environmental issues to evaluate compliance with environmental requirements and the risk of noncompliance due to environmental issues.
 - The lead auditor appointed may include additional auditors and/or technical experts in the audit team if this is required by the extent of the audit.

2.3.2 Audit Team

Auditor Name:	John Shideler	Auditor role:	Lead Auditor
Qualifications: Mr. John Shideler is an environmental professional with 17 years’ experience auditing management systems and greenhouse gas assertions for a number of accredited certification bodies. He is currently certified as a greenhouse gas lead verifier by the California Air Resources Board. He is an experienced ISO 14001/OHSAS 18001 lead auditor and previously held lead auditor certification for auditing Responsible Care management systems for members and partners in the chemical manufacturing industry. As a US expert, he has contributed to the writing of several greenhouse gas standards (ISO 14064-3, ISO 14065, ISO 14066, ISO 14067, and ISO 14069). He is the current chair of			

ISO Technical Committee 207 Subcommittee 4 on Environmental Performance Evaluation, and serves as ISO TC207 liaison to ISO Project Committee 248 which is writing ISO 13065, Sustainability criteria for bioenergy. He earned a PhD degree in history at the University of California, Berkeley.			
Auditor Name:	Ms. Jingting Zhou	Auditor role:	Local Auditor
Qualifications: Jingting Zhou is a certified auditor for ISO 9001, FSC, RSB and Bonsucro Chain of Custody. Jingting has a Bachelor's Degree in Economics from University of International Business and Economics (Beijing, China) and a Master's Degree in International Affairs from the University of California, San Diego (USA).			

2.4 Evaluation Schedule and Extent of Audit

2.4.1 Determination of Extent of Audit

Total number of subsidiaries, branch offices, affiliated entities, external third parties contracted or otherwise engaged, operational structures, sites, facilities, processing and production units, and supply chain structures	1
Participating Operator Risk Class	Low Risk
Disputes or prior Non-compliances	2014 Surveillance Audit: One major noncompliance (closed); 2013 Initial Certification: Two major and several minor non-compliances (closed).
Changes in scope since last evaluation	None
Total number of compliance claims	N/A

2.4.2 Evaluation Itinerary and Activities

Date: 2015-09-28	
Operation(s)/ sites visited	Activities/ notes
JV Demonstration Plant	Opening Meeting
	Review Joint Venture structure and working relationship
	Review human resource practices
	Safety briefing and plant site tour
	Review of legal requirements
	Worker interviews
	Control room operator interviews
	Stakeholder interview
	Review of Environment and social management plan

Date: 2015-09-29	
Operation(s)/ sites visited	Activities/ notes
JV Demonstration plant	Review GHG calculation
	Control room operator interviews
	Review management system changes since 2013 certification audit
	Audit ethanol production and sales data
	Stakeholder interview
	Review adherence to RSB communication of claims procedure
	Review compliance with RSB Standard for certification of biofuels based on end-of-life-products, by-products and residues (RSB-STD-01-010 (V1.6))

2.5 Evaluation of Management System

2.5.1 Methodology and Strategies Employed

SCS deploys interdisciplinary teams with expertise in agriculture, ecology, forestry, social sciences, natural resource economics, and other relevant fields to assess an Operator’s compliance to RSB standards and policies. Evaluation methods include document and record review, implementing sampling strategies to visit a broad number of site and facility types, observation of implementation of management plans and policies, and stakeholder analysis. When there is more than one team member, team members may review parts of the standards based on their background and expertise. On the final day of an evaluation, team members convene to deliberate the findings of the assessment jointly. This involves an analysis of all relevant site observations, stakeholder comments, and reviewed documents and records. Where consensus between team members cannot be achieved due to lack of evidence, conflicting evidence or differences of interpretation of the standards, the team is instructed to report these in the certification decision section.

The SCS audit team held an opening meeting on September 28, 2015, with eight Joint Venture management and staff at the Joint Venture offices located in the Caofeidian industrial park. Eight persons also attended the closing meeting held on September 29, 2015. During the two-day audit Interviews were conducted by the audit team with JV plant operators, control room and other JV employees, a representative of the Jingtang Iron and Steel Company’s environmental department and the government safety official responsible for monitoring the JV’s activities within the industrial park.

2.5.2 Capacity of the participating operator to implement its management systems

The JV’s operations were assessed against local quality, environmental and safety procedures. The audit team found the management system to be appropriate for a small chemical manufacturing site and improved since the initial certification audit. The JV general manager was responsible for health, safety, and environmental management. Specific management responsibilities were undertaken by specialized personnel such as a safety officer and lead process engineer. Four teams of operators staffed control room operations on a shift basis.

An office of the JV located in Beijing supported some functions of the JV demonstration plant, including human resources, legal affairs, and executive management. The Beijing-based HR and legal affairs managers attended the on-site audit and a telephone interview was conducted with the deputy general manager for safety and production from his Beijing office on the first day.

The JV demonstration plant was well maintained, clean and orderly. Signage related to safety hazards had improved since the initial certification audit. Enforcement of requirements for personal protective equipment (PPE) also had been enhanced, and PPE supplied by the JV was provided as needed to visitors. A commitment to employee training was evident.

2.5.3 Evaluation of RSB compliance claims and use of RSB trademarks

Type (compliance claim, trademark use)	Description	Findings
No compliance claims made	N/A	N/A
Trademark use	Reference to RSB certification in corporate presentations and press releases	See description of minor finding.

2.6 Stakeholder Consultation Process

In accordance with SCS and RSB protocols, consultation with key stakeholders is an integral component of the evaluation process. Stakeholder consultation takes place prior to, concurrent with, and following field evaluations. The primary purpose of such consultation is to solicit input from affected parties as to the strengths and weaknesses of the Participating Operator’s management system and operations, relative to the standard, and the nature of the interaction between the company and the surrounding communities.

Principal stakeholder groups are identified based upon the certification scope of the participating operator.

Stakeholder consultation activities are organized according to the requirements of the RSB. The table below summarizes the major comments received from stakeholders and the assessment team’s response. Where a stakeholder comment has triggered a subsequent investigation during the evaluation, the corresponding follow-up action and conclusions from SCS are noted below.

2.6.1 Summary of Stakeholder Comments and Responses from the Team, Where Applicable

Stakeholder Comments	SCS Response
Economic Concerns	
Good paying jobs	Interviews with workers confirmed that they believed their jobs provided them with above-market wages and benefits.
Social Concerns	

Positive feedback	The audit team's assessment of working conditions at the Joint Venture plant was positive.
	The industrial park safety official with oversight responsibilities gave the JV positive feedback on its safety culture and operations.
Environmental Concerns	
Positive feedback	The audit team sampled compliance with regulations and found no issues or discrepancies.
	The industrial park safety official with oversight responsibilities gave the JV positive feedback on its technology that makes beneficial use of a waste gas stream.

3.0 RISK ASSESSMENT RESULTS

SCS Risk Assessment Results	Deviations from Operator Risk Assessment Results	Risk Factor Difference
Low	None	None

Due to the results of the Risk Assessment, the evaluation did not need to be rescheduled.

4.0 RESULTS OF THE EVALUATION

4.1 Equivalence between the Audit Team Evaluation and the Operator Self Evaluation

Principle/ Subject Area	Summary of Audit Team Findings	Comparison to Operator Self Evaluation (Equivalence)	Added Risk (Yes/No)
P1: Legality	In compliance	In agreement	No
P2: Planning, Monitoring & Continuous Improvement	In compliance	In agreement	No
P3: Greenhouse Gases	Not applicable due to agreement between the JV and RSB to base GHG calculations on the design specification of a future commercial-scale plant.	Not applicable	No
P4: Human and Labor Rights	In compliance	In agreement	No
P5: Rural & Local Development	Not Applicable	In agreement	No
P6: Food Security	Not Applicable	In agreement	No

P7: Conservation	Not Applicable	In agreement	No
P8: Soil	Not Applicable	In agreement	No
P9: Water	In compliance	In agreement	No
P10: Air	In compliance	In agreement	No
P11: Technology	In compliance where applicable	In agreement	No
P12: Land Rights	Not Applicable	In agreement	No
FINAL RISK CLASS	Low	Low	

4.2 Process of Determining Compliance

4.2.1 Structure of Standard and Degrees of Non-Compliance

RSB-accredited biofuel standards consist of a three-level hierarchy: principle, the criteria that correspond to that principle, and then the performance indicators that elaborate each criterion. Consistent with SCS Sustainable Biofuels Program evaluation protocols, the team collectively determines whether or not the subject operation is in compliance with every applicable indicator of the relevant sustainable biofuel standard. Each non-compliance must be evaluated to determine whether it constitutes a major or minor noncompliance at the level of the associated criterion or sub-criterion. Not all indicators are equally important, and there is no simple numerical formula to determine whether an operation is in noncompliance. The team therefore must use their collective judgment to assess each criterion and determine if the Operator is in compliance. If the Operator is determined to be in non-compliance at the criterion level, then at least one of the applicable indicators must be in major non-compliance.

4.2.2 Interpretations of Major and Minor Non-compliances

Major Non-compliances, either alone or in combination with non-compliances of other applicable indicators, result (or are likely to result) in a fundamental failure to achieve the objectives of the relevant RSB Criterion. These non-compliances must be resolved or closed out before a certificate can be awarded. If Major NCs arise after an operation is certified, the timeframe for correcting these non-compliances is typically no more than three months. Certification is contingent on the certified FME's response to the NCs within the stipulated time frame.

Minor Non-compliances are typically limited in scale or can be characterized as an unusual lapse in the system. Most minor NCs are the result of a nonconformance at the indicator-level. Non-compliances must be closed out within a specified time period of award of the certificate.

4.2.3 Major Non-compliances

<input checked="" type="checkbox"/>	No major NCs were issued to the Operator during the evaluation. Any minor CARs from previous surveillance audits have been reviewed and closed prior to the issuance of a certificate.
<input type="checkbox"/>	Major NCs were issued to the Operator during the evaluation, which have all been closed to the satisfaction of the audit team and meet the requirements of the standards. Any minor

	CARs from previous surveillance audits have been reviewed and closed prior to the issuance of a certificate.
<input type="checkbox"/>	Major NCs were issued to the Operator during the evaluation and the Operator has not yet satisfactorily closed all major NCs.

4.2.4 Non-compliances and Current Status

Summary of Non-compliances and Current Status				
Non-compliance Number	Type of Non-compliance	Relevant RSB Standard & Indicator No.	Summary of Finding and Evidence Collected	Status of Non-compliance (Open/Closed)
JS-2015-01	Minor	Communications and claims	LanzaTech communications did not ensure that the source of RSB certification was correctly stated. Review of communications.	Closed

5.0 CERTIFICATION DECISION

Certification Recommendation	
Operator be awarded RSB certification subject to the minor non-compliances stated in Section 4.2.5.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
The SCS evaluation team makes the above recommendation for certification based on the full and proper execution of the SCS Responsible Biofuels Program evaluation protocols. If certification is recommended, the Operator has satisfactorily demonstrated the following without exception:	
Operator has addressed any Major NC(s) assigned during the evaluation.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Operator has demonstrated that their system of management is capable of ensuring that all of the requirements of the applicable standards are met over the sites and facilities covered by the scope of the evaluation.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Operator has demonstrated that the described system of management is being implemented consistently over the sites and facilities covered by the scope of the certificate.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Comments and/or details of any issue which was difficult and/or impossible to evaluate:	N/A

To be completed by Certification Decision-Making Entity	Certification decision by:	Neil Mendenhall
	Date of decision: For initial or continued certification	October 20, 2015
	Surveillance schedule:	Annual Notes: