STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

Connecticut Green Bank and CEFIA Holdings, LLC petition for a declaratory ruling, pursuant to Connecticut General Statutes §4-176 and §16-50k, for the proposed construction, maintenance and operation of a 1.95-megawatt AC solar photovoltaic electric generating facility located at the Manson Youth Correctional Institution at 42 Jarvis Street, Cheshire, Connecticut, and associated electrical interconnection.	Petition No. 1515

July 6, 2022

CONNECTICUT GREEN BANK AND CEFIA HOLDINGS, LLC RESPONSES TO THE JUNE 14, 2022 FIRST SET OF INTERROGATORIES DIRECTED TO CONNECTICUT GREEN BANK AND CEFIA HOLDINGS LLC MANSON YOUTH CORRECTIONAL INSTITUTION FROM THE CONNECTICUT SITING COUNCIL

Petitioner Connecticut Green Bank and CEFIA Holdings LLC ("CGB", "CEFIA" or "Petitioner") hereby submits the following responses to the Interrogatories that were directed to CGB by the Connecticut Siting Council on June 14, 2022.

Project Development

1. What is the estimated cost of the project?

   a. The estimated cost of the project is $3,800,000.

2. Did the Green Bank complete the environmental impact evaluation process for state agency actions under the Connecticut Environmental Policy Act? If so, did CEQ, DEEP and OPM provide comments on the project as part of this process? Please summarize the comments.

   a. The Connecticut Department of Administrative Services (DAS), as the sponsoring agency of the projects, conducted a public scoping comment period to inform the decision on whether to move forward with an Environmental Impact Evaluation (EIE). During the Scoping process these projects received comments from DEEP and SHPO. DEEP provided comments recognizing the projects NDDB determination letter, continued progress in reducing emissions from the state's electric system that directly supports three of Connecticut's state policy goals. DEEP Bureau of Air Management also recommend using newer on-road vehicles

during construction. The State Historic Preservation Office (SHPO) provided comment that the proposed solar facilities has the potential to contain significant archaeological resources. Therefore, SHPO requested a professional archaeological assessment and reconnaissance survey be completed prior to construction. As described in section IV.G of the Petition, Archaeological Consulting Services (ACS), has been retained to complete the required archaeological assessment at the site. After reviewing comments and completing an Environmental Review Checklist, DAS determined these projects did not require an EIE. DAS is currently preparing the post-scoping notice, including the public comments, Environmental Review Checklist and determination, and will publish it within the required timeframe.

3. If the project is approved, identify all permits necessary for construction and operation and which entity will hold the permit(s)?

   a. Permits include coverage under the DEEP's General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities. Building Permit to be issued through the Department of Administrative Services (DAS).

4. Referring to Petition p. 7, did the Town and/or abutting property owners present any concerns and/or recommendations during project outreach? If so, describe how these concerns and/or recommendations were addressed and/or included within the project design.

   a. As discussed in the Petition, preliminary plans were submitted to the Cheshire Town Planner and presented at a meeting with the Town Manager and Town Staff. No concerns or recommendations were brought up at the meeting, and Town Manager and Town Staff were supportive of the project as presented. No concerns and/or recommendations have been received from any of the abutters that were provided notice of the Project

Energy Output

5. What is the anticipated capacity factor of the project? Would the capacity of the system decline over time? If so, estimate annual losses.

   a. The anticipated Capacity Factor for this project is 18.0%. The capacity of the system will decline over time with an estimated annual loss of around 15,000kwh

Public Safety

6. In the event of a fire or emergency, describe procedures that will allow emergency responders to shut down the facility.

a. The facility will have a NEC NFPA 70 compliant Service Disconnect accessible for emergency responders to shut down the facility from Utility power. The Service Disconnect will be labeled in accordance with NEC and Utility requirements. Upon isolation from utility power, all Inverters will shut down and stop producing energy as required per NEC and IEEE 1547.

7. Provide a construction Fuel Spill Prevention Plan.

   a. Fuel Spill Prevention Plan included **(Exhibit 1).**

8. Would the project comply with the National Electrical Code, the National Electrical Safety Code and any applicable National Fire Protection Association codes?

   a. The electrical design and installation work and safety provisions will be in compliance with the most recent National Electrical Code, NFPA 70, and other NFPA codes that pertain to this solar installation. National Electrical Safety Code (NESC) is not applicable to the applicant's installation.

9. Referring to Petition p. 14, submit inverter specification sheets that include inverter operational noise characteristics. Using the inverse square law or other noise analysis method, would operational noise meet applicable DEEP Noise Control Standards at the nearest abutting property line?

   a. Inverter specification sheet included **(Exhibit 2)**. Operational noise limits defined by DEEP Noise Control Standards at the nearest property lines are 55dBA during daytime, 45dBA during evening. Based on noise propagation models created with dbmap.net, inverter noise falls under the limit of 45db well within the boundaries of the property line.**(Exhibit 3)**

Environmental

10. Would the Petitioner be willing to use a pollinator seed mix in all disturbed areas (excluding the stormwater basins), as recommended by DEEP's General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities – Appendix I?

    a. The applicant is willing to use pollinator seed mix in the vicinity of the solar array and vicinity of stormwater basin. However, we would prefer to utilize the seed mix as defined in the petition alongside trenching that runs a great distance from the solar array in order to blend in with the surrounding area.

11. Submit photographs of the proposed solar facility site construction area with descriptive captions and/or a map identifying the locations of the photographs.

a. Due to the sensitive nature of Department of Correction (DOC) facilities, photographs must be taken under supervised conditions. A formal request was submitted to DOC on 6/22/2022 requesting the use and publication of select photos to satisfy this request. DOC has not yet responded.

12. DEEP recommends an environmental monitor perform a search for box turtles prior to site work during May, June and July. If project construction occurs during this timeframe, does the Petitioner intend to retain an environmental monitor to conduct an initial search of the work area?

    a. The Project Narrative and Construction Sequence outlined on Sheet C-201 of the Site Plan set, currently calls for a qualified biologist to be retained to train the Contractor and on-site personnel on how to identify the Eastern Box Turtle. Subsequently, the Contractor is called on to perform the initial search and the daily sweep along the perimeter silt fence to locate and remove turtles if present. These notes will be revised to call for the initial sweep to be performed by the qualified biologist. The Contractor will remain responsible to perform the following searches each day prior to the start of the work. These activities to search for the turtles will be required regardless of the time of year that construction occurs.

13. The DEEP NDDB Determination letter will expire in July 2022. At what point will the Petitioner file for a new NDDB Determination Letter?

    a. A new NDDB Review Request was submitted to DEEP on June 20, 2022

Maintenance/Decommissioning

14. Has the manufacturer of the proposed solar panels conducted Toxicity Characteristic Leaching Procedure (TCLP) testing to determine if the panels would be characterized as hazardous waste at the time of disposal under current regulatory criteria? If so, submit information that indicates the proposed solar modules would not be characterized as hazardous waste. If not, would the Petitioner agree to install solar panels that are not classified as hazardous waste through TCLP testing?

    a. The PV manufacturer (Trina Solar) has completed Toxicity Characteristic Leaching Procedure (TCLP) testing and the results stating they do not include GenX and PFAS chemicals are included. **(Exhibit 4)**

15. Referring to Petition Exhibit VII – Decommissioning Plan, what PV module materials are recyclable? Where is the nearest PV recycling center, if known at this time?

    a. The EPA states that glass, aluminum frame, copper wire, and plastic junction box are all recyclable components of PV modules. One available PV recycling center is called Cascade Eco Minerals with a location in Natrona Heights, PA

16. Provide a post-construction Operation and Maintenance Plan.

a. Operation and Maintenance Plan included **(Exhibit 5)**

Respectfully submitted,

Connecticut Green Bank and CEFIA Holdings LLC

/s/Brian Farnen
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PETITION NO. 1515-MANSON YOUTH CORRECTIONAL INSTITUTION

EXHIBITS LIST

1. FUEL SPILL PREVENTION PLAN
2. INVERTER DATASHEET
3. INVERTER NOISE ANALYSIS
4. TCLP TESTING
5. O&M PLAN

EXHIBIT 1

Alternative Power Generation Inc.

691 N. Church Rd., Suite 100A, Elmhurst, IL 60126|(630) 392-8499| Email: APG@Alternativepowergen.com

Construction Site and Equipment Fuel Spill Prevention, Control, and Countermeasure (SPCC) Plan

To: State of Connecticut Siting Council

For: Siting Council Interrogatories

Date Prepared: 7/30/2021

By: APG, Inc. General Contactor

1. Introduction

This Spill Prevention, Control, and Countermeasure (SPCC) Plan outlines the project scope of work to prevent, respond, and report oil spills and releases to the environment during the project construction. This SPCC Plan addresses the requirements of the EPA regulations specified in Title 40 of the Code of Federal Regulations (CFR).

1.1 Responsibilities

APG Inc.'s site Project Field Manager or authorized delegate will be responsible for spill control during the construction of the project.

1.2 Subcontractors and Suppliers

All subcontractors and suppliers will be contracted to follow this stated plan.

All reporting will be to APG Inc.

1.3 Applicability

This plan is applicable to any equipment, trucks, storage containers, and generators used on site during the term of this project.

2. Prevention of Releases to the Environment during Construction and Operation

2.1 Procedures to prevent releases to the environment

All project contractors will exercise due diligence to prevent, contain, and respond to spills of hazardous material, hazardous substances, hazardous waste, regulated gas, petroleum, lubrication oil, and other substances regulated by environmental law. Contractors will maintain spill cleanup equipment and materials at the work site. In the event of a spill, contractors will take prompt, effective action to stop, contain, curtail, or otherwise limit the amount, duration, and severity of the spill/release. This plan is to address any leaks or spills of fuels, hazardous

substances, solvents or lubricants. Contractors will conduct fueling and lubricating of equipment and motor vehicles in a manner that protects against spills and evaporation. Spill kit will be provided on site and train staff how to use the spill kit. In accordance with 40 CFR 112, surround all temporary fuel oil or petroleum storage tanks with a temporary berm or containment of sufficient size and strength to contain the contents of the tanks, plus 10 percent freeboard for precipitation. The berm will be impervious to oil for 72 hours and be constructed so that any discharge will not permeate, drain, infiltrate, or otherwise escape before cleanup occurs. Provide general secondary containment for oil transfer operations as required by 40 CFR 112.7 equipment during construction.

2.2 Temporary or Fixed Equipment

Standing or fixed equipment like generators and compressors will have a secondary containment area. The equipment will be placed inside a secondary containment area to contain small drips or major leaks.

2.3 Aquifer Protection and Water Resources

Refueling will be avoided within 200 feet of wetlands and watercourses. Refueling will not be allowed within the designated the aquifer protection areas. Spill response equipment will be available on-site at all times along with personnel trained in the proper use of such equipment. A person or persons will be designated by the Contractor(s) for emergency response coordination on a 24/7 basis (Site Contact and Emergency Contact provided in Section 5.1 below.

Notification of the project start date will be sent to the Public Water System as soon as it has been determined. Public Water System personnel should be granted daily site access to review compliance with site best management practices. The Public Water System, Department of Public Health Drinking Water Section (860-509-7333 OR after hours at 860-509-8000), and appropriate sections of the Department of Energy and Environmental Protection must be notified immediately of any chemical/fuel spill or any major failure of an erosion and sedimentation control at the construction site. Emergency telephone numbers and a statement identifying the construction site as a sensitive public water supply area should be posted where they are readily visible to contractors and other on-site personnel. A note should be added to the construction documents stating the sensitivity of the area.

3. Personnel Training

All personnel, suppliers, contractor, subcontractor personnel, operators, technicians, and temporary employees, working at the project site will be briefed in hazardous material management and spill prevention as part of their Environmental, Safety and Health orientation (ES&H) plan. In addition, Supervisor Environmental Awareness Training will be provided for non-manual personnel, supervisors, foremen, and subcontractor supervision, as needed. Those personnel responsible for actively responding to and cleaning up small and incidental spills and handling wastes shall be trained in the proper use of response materials and equipment and the use of personal protective equipment for potential hazards. Supervisors and foreman will be responsible for supervising training of new employees and after to ensure the best practices are being carried out to prevent a spill.

4. Emergency Procedures Contractors and suppliers will respond to any spills or release that occur and will provide spill response. The Project Field Manager shall be notified when a release occurs, no matter the quantity or responsible party. A Project spill kit material specification will be provided to all contractors on the site. Container storage will be set up on an approval and as-needed basis for oily rag disposal and clean up materials within the construction lay down yard/staging area.

5. Reporting

5.1. Site Contact and Emergency Contact

Construction Project Manager: APG, Inc.

5.2 Internal Reporting

A designated spill coordinator shall be notified of all spills and releases, regardless of the volume of the release. After a release has occurred, the spill coordinator will determine if additional reporting to a regulatory agency or the contractor's legal departments is required. The Construction Project Manager will notify Owner of any major spills or releases. In addition to these requirements, all environmental incidents and spills less than the reportable quantities will be recorded in a Project's Incidental Spill Log.

5.3 External Reporting

The Spill coordinator, Project Manager or Owner will notify/advise all appropriate regulatory agencies that a release that triggered a regulatory notification has occurred along with pertinent information regarding the release.

6. Spill Kits

Spill kits will be used throughout the project site to support the first response and subsequent cleanup of spills and releases that occur on the project. The following sections provide recommendations for typical spill kits.

6.1 Vehicular or Equipment Spill Kit

Each vehicle on site should carry a spill kit which meets the following specifications:

- Packaged spill kit to absorb up to 5 gallons of oil
- Absorbent mats/pads
- Absorbent socks
- Temporary disposal bags
- Protective gloves/Tyvek suit/labels

Vehicles and equipment with chronic leaking issues will be stored with plastic sheeting under to catch any leaks until equipment can be repaired or removed from site.

6.2 Large Spill Station

A large spill station shall be provided in all areas where liquid chemicals, oils or other fluids are used or stored. Fueling locations and jobsite trailers will contain large spill stations. Large spill stations shall provide sufficient absorbent and response materials to mitigate a variety of pill conditions and situations. The spill station shall be contained in a weather-proof box, drum, wheeled/lidded container, or trunk which can be mobilized to the spill site. They shall have the following attributes:

6.3 Bulk Oil Absorbent Pads

A sufficient quantity of bulk oil absorbent pads will be maintained onsite for response to spills to land or water. Pads must be hydrophobic and float on water. Sufficient inventory will be maintained to absorb at least 100 gallons (400 liters) of oil.

6.4 Loose Absorbent

Granular absorbent will be maintained for use in areas where there is a likelihood of small spills, drips, or splashes of oil. Granular absorbent can be clay, cellulose, peat, cat litter, or other appropriate biodegradable or natural proven absorbent material. Loose absorbent will be packaged or containerized in such a manner as to facilitate ease of use and distribution. Polypropylene or other man-made, non-biodegradable materials are not permitted.

6.5 Typical Project-Assembled Spill Kit Supplies (Final will be Approved)

- Plastic/metal 55-gallon barrel or 40-gallon wheeled trash container with lid and labeled
- Bulk granular, diatomaceous earth, absorbent material
- Oil-absorbent pads and booms
- Large trash bags
- Rubber gloves
- Safety goggles
- Tyvek suits and coverall

SUNNY HIGHPOWER PEAK3 125-US / 150-US

Cost effective

- Modular architecture reduces BOS and maximizes system uptime
- Compact design and high power density maximize transportation and logistical efficiency

Maximum flexibility

- Scalable 1,500 VDC building block with best-in-class performance
- Flexible architecture creates scalability while maximizing land usage

Simple install, commissioning

- Ergonomic handling and simple connections enable quick installation
- Centralized commissioning and control with SMA Data Manager

Highly innovative

- SMA Smart Connected reduces O&M costs and simplifies field-service
- Powered by award winning ennexOS cross sector energy management platform

SUNNY HIGHPOWER PEAK3 125-US / 150-US

A superior modular solution for large-scale power plants

The PEAK3 1,500 VDC inverter offers high power density in a modular architecture that achieves a cost-optimized solution for large-scale PV integrators. With fast, simple installation and commissioning, the Sunny Highpower PEAK3 is accelerating the path to energization. SMA has also brought its field-proven Smart Connected technology to the PEAK3, which simplifies O&M and contributes to lower lifetime service costs. The PEAK3 power plant solution is powered by the ennexOS cross sector energy management platform, 2018 winner of the Intersolar smarter E AWARD.

Technical Data	Sunny Highpower PEAK3 125-US	Sunny Highpower PEAK3 150-US
Input (DC)		
Maximum array power	187500 Wp STC	225000 Wp STC
Maximum system voltage	1500 VDC	
Rated MPP voltage range	705 V ... 1450 V	880 V ... 1450 V
MPPT operating voltage range	684 V ... 1500 V	855 V ... 1500 V
MPP trackers	1	
Maximum operating input current	180 A	
Maximum input short-circuit current	325 A	
Output (AC)		
Nominal AC power	125000 W	150000 W
Maximum apparent power	125000 VA	150000 VA
Output phases / line connections	3 / 3-PE	
Nominal AC voltage	480 V	600 V
Compatible transformer winding configuration	Wye-grounded	
Maximum output current	151 A	
Rated grid frequency	60 Hz	
Grid frequency / range	50 Hz, 60 Hz / -6 Hz ... +6 Hz	
Power factor at rated power / adjustable displacement	1 / 0.0 leading ... 0.0 lagging	
Harmonics (THD)	<3%	
Efficiency		
CEC efficiency	98.5 %	99.0 %
Protection and safety features		
Ground fault monitoring: Riso / Differential current	● / ●	
DC reverse polarity protection	●	
AC short circuit protection	●	
Monitored surge protection (Type 2): DC / AC	● / ●	
Protection class / overvoltage category (as per UL 840)	I / IV	
General data		
Device dimensions (W / H / D)	770 / 830 / 444 mm (30.3 / 32.7 / 17.5 in.)	
Device weight	98 kg (216 lbs)	
Operating temperature range	-25°C ... +60°C (-13°F ... +140°F)	
Storage temperature range	-40°C ... +70°C (-40°F ... +158°F)	
Audible noise emission (full power @ 1m and 25°C)	< 69 dB(A)	
Internal consumption at night	< 5 W	
Topology	Transformerless	
Cooling concept	OptiCool (forced convection, variable speed fans)	
Enclosure protection rating	Type 4X (as per UL 50E)	
Maximum permissible relative humidity (non-condensing)	100%	
Additional information		
Mounting	Rack mount	
DC connection	Terminal lugs - up to 600 kcmil CU/AL	
AC connection	Screw terminals - up to 300 kcmil CU/AL	
LED indicators (Status/Fault/Communication)	●	
SMA Speedwire (Ethernet network interface)	● (2 x RJ45 ports)	
Data protocols: SMA Modbus / SunSpec Modbus	● / ●	
Integrated Plant Control / Q on Demand 24/7	● / ●	
Off-grid capable / SMA Hybrid Controller compatible	– / ●	
SMA Smart Connected (proactive monitoring and service)	●	
Certifications		
Certifications and approvals	UL 62109, UL 1998, CAN/CSA-C22.2 No.62109	
FCC compliance	FCC Part 15, Class A	
Grid interconnection standards	IEEE 1547, UL 1741 SA - CA Rule 21, HECO Rule 14H	
Advanced grid support capabilities	L/HFRT, L/HVRT, Volt-VAr, Volt-Watt, Frequency-Watt, Ramp Rate Control, Fixed Power Factor	
Warranty		
Standard	5 years	
Optional extensions	10 / 15 / 20 years	
Type designation	SHP 125-US-20	SHP 150-US-20

Technical data as of May 2020 ● Standard features ○ Optional features – Not available

Toll Free +1 888 4 SMA USA
www.SMA-America.com

SMA America, LLC

dBmap.net - Noise Mapping Results

Report

6/27/2022 CTGB - Manson Youth institute

Noise Map - Grid height 1m (A-weighted)

30 dB(A)
35 dB(A)
40 dB(A)
45 dB(A)
50 dB(A)
55 dB(A)
60 dB(A)
65 dB(A)
70 dB(A)
75 dB(A)
80+ dB(A)

0m 250m

Model Overview

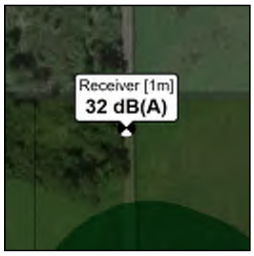
Receiver Results - Summary

Receiver Name	Height (m)	Overall Level dB(A)	31.5Hz	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	16kHz
Receiver	1	32		0	10	18	23	26	26	25	15	-21
Receiver-2	1	32		1	11	19	24	27	27	25	16	-14
Receiver-3	1	29		-2	8	16	21	24	24	21	8	-36
Receiver-4	1	28		-2	8	15	20	23	23	20	5	-44
Receiver-5	1	26		-3	7	14	19	21	21	17	1	-57

Sources

Source Name	Height (m)	Overall Level dB	31.5Hz	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	16kHz
Point	1	78.5		69	69	69	69	69	69	69	69	69
Point-2	1	78.5		69	69	69	69	69	69	69	69	69
Point-3	1	78.5		69	69	69	69	69	69	69	69	69
Point-4	1	78.5		69	69	69	69	69	69	69	69	69
Point-5	1	78.5		69	69	69	69	69	69	69	69	69
Point-6	1	78.5		69	69	69	69	69	69	69	69	69
Point-7	1	78.5		69	69	69	69	69	69	69	69	69
Point-8	1	78.5		69	69	69	69	69	69	69	69	69
Point-9	1	78.5		69	69	69	69	69	69	69	69	69
Point-10	1	78.5		69	69	69	69	69	69	69	69	69

Receiver Locations



Receiver

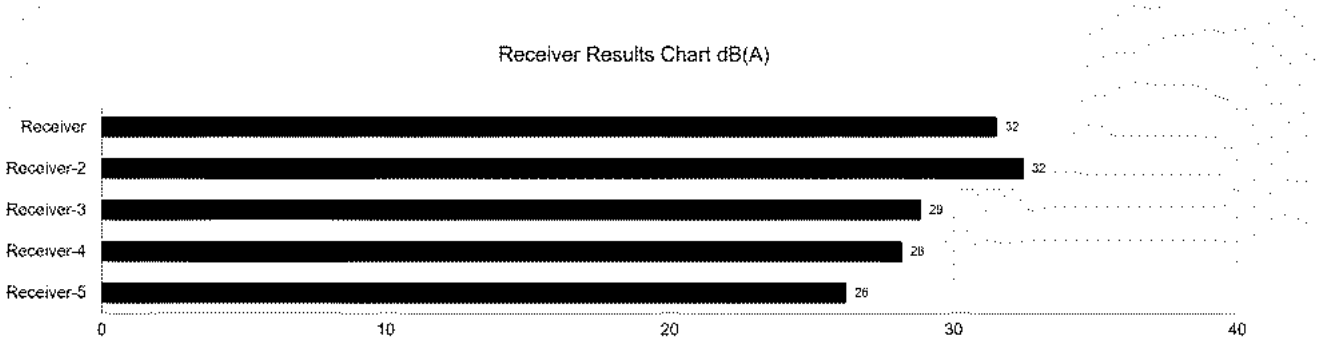
Receiver-2

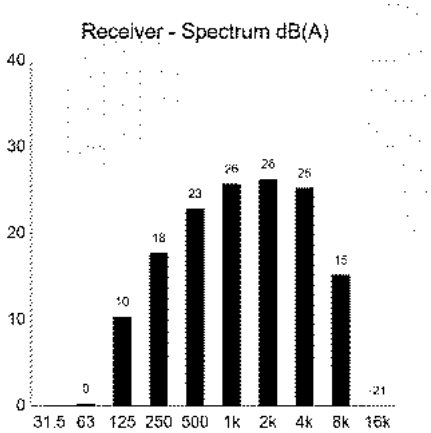
Receiver-3

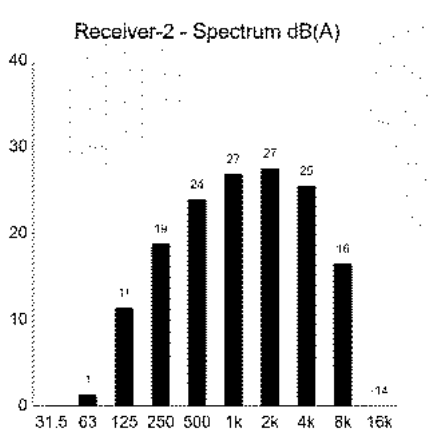
Receiver-4

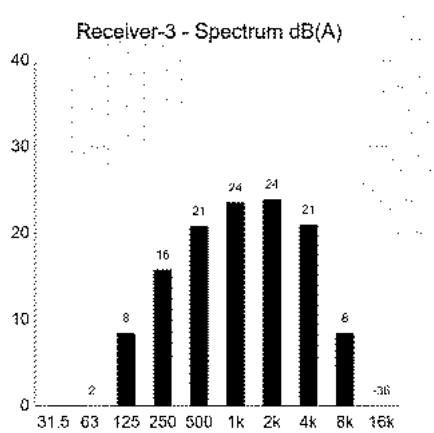
Receiver-5

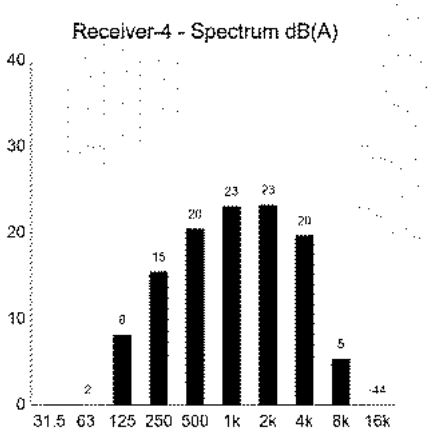
Receiver Charts

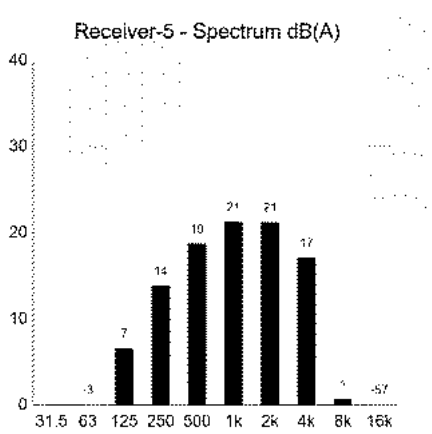




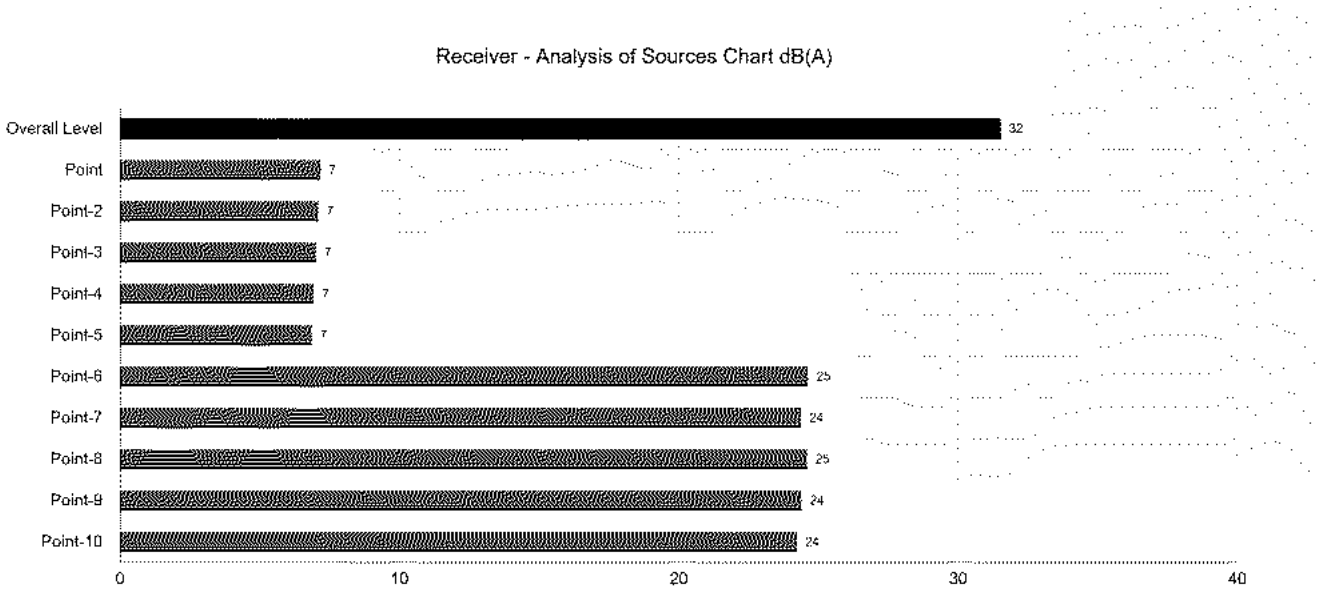


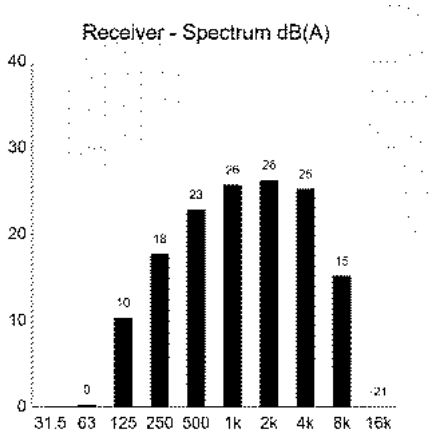






Receiver





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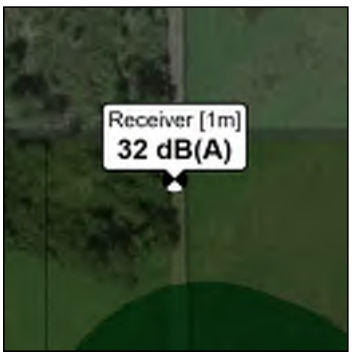

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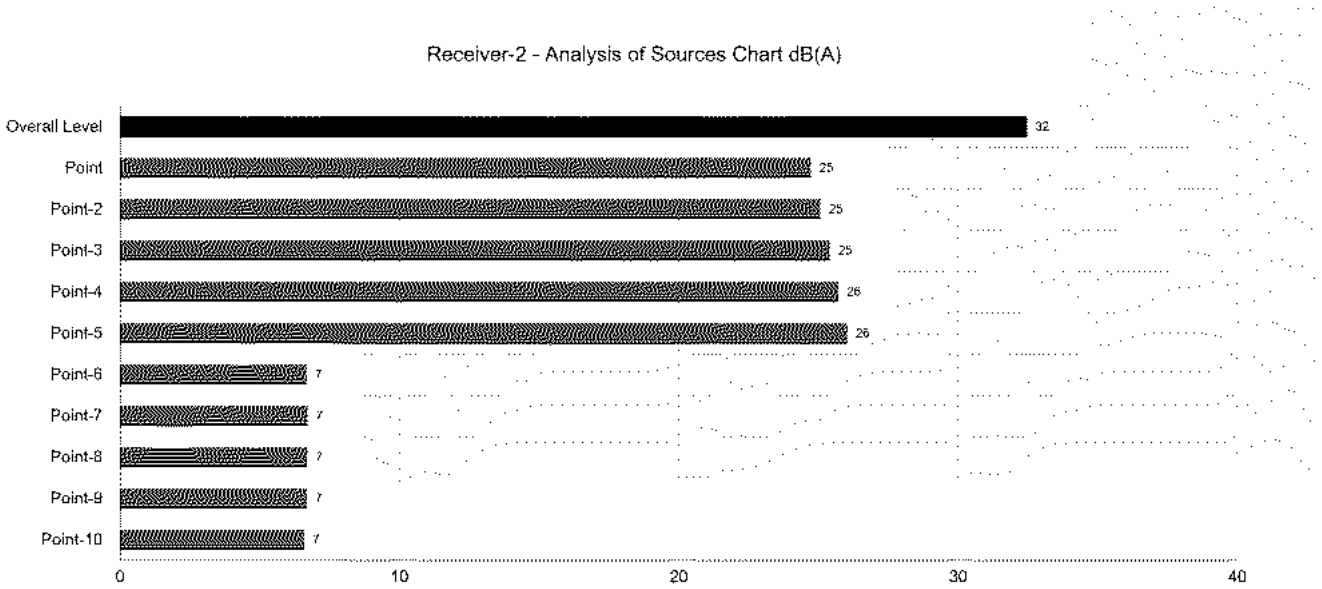

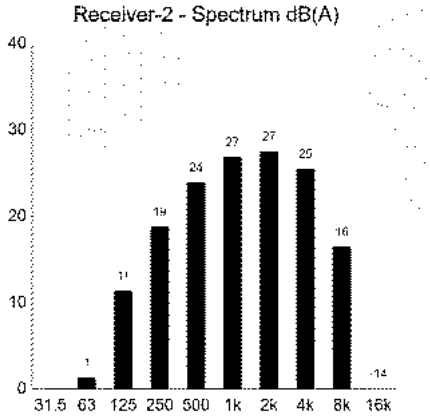

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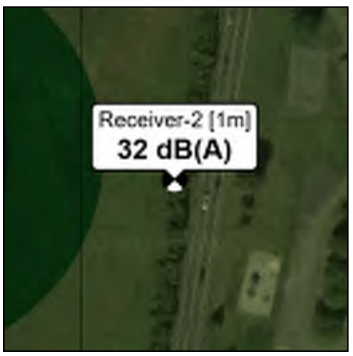

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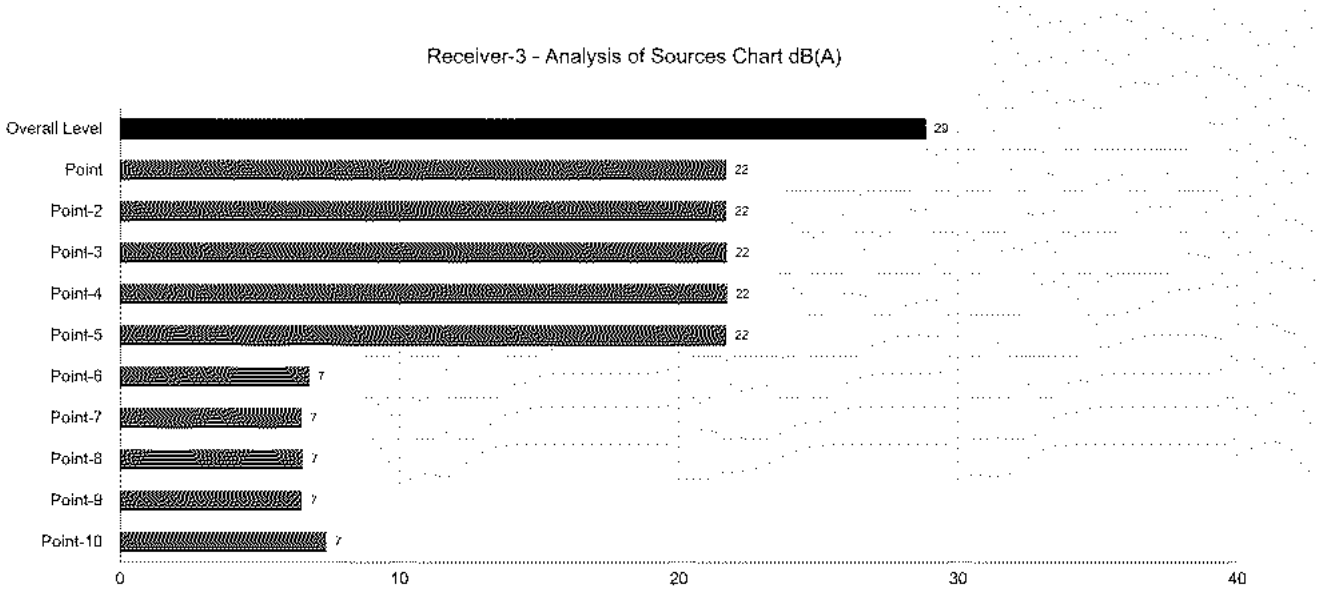
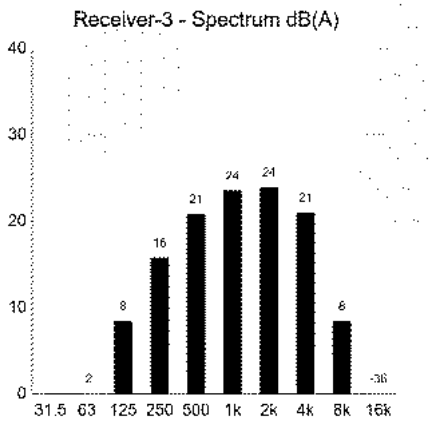
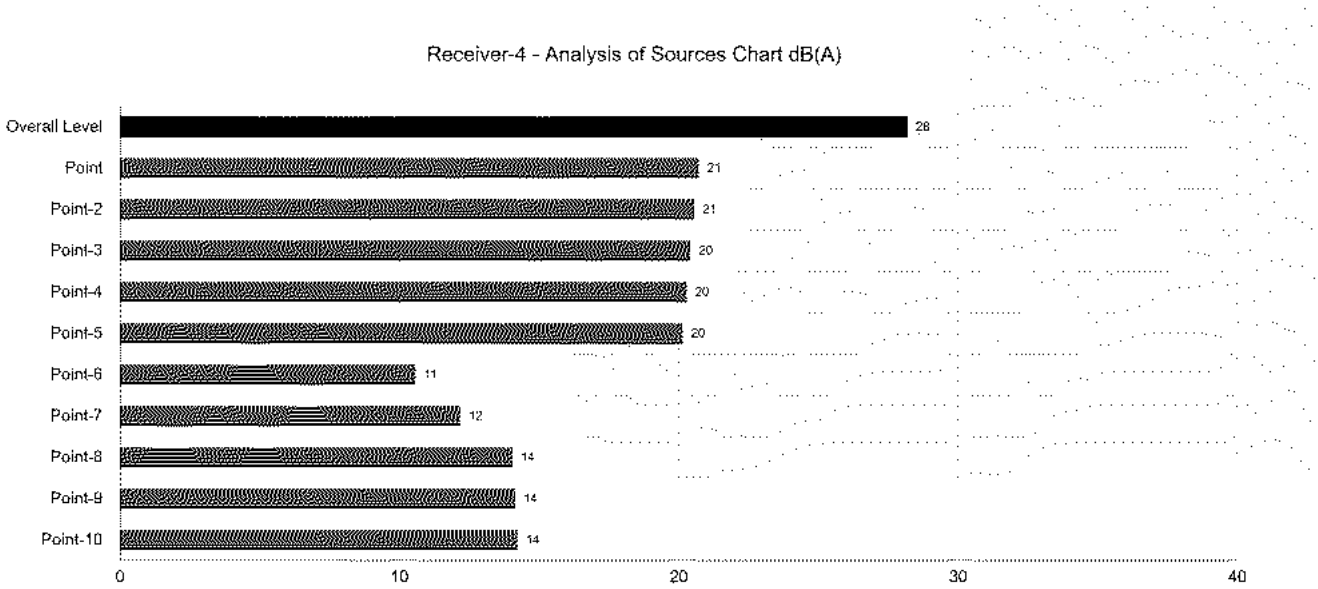
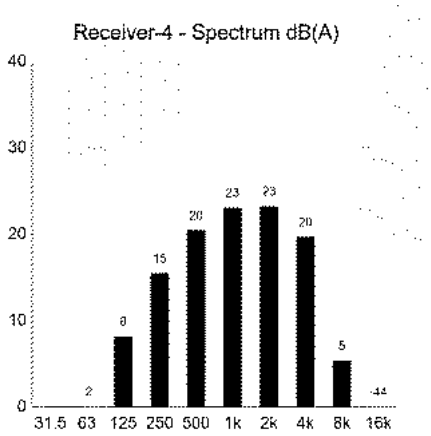




Location

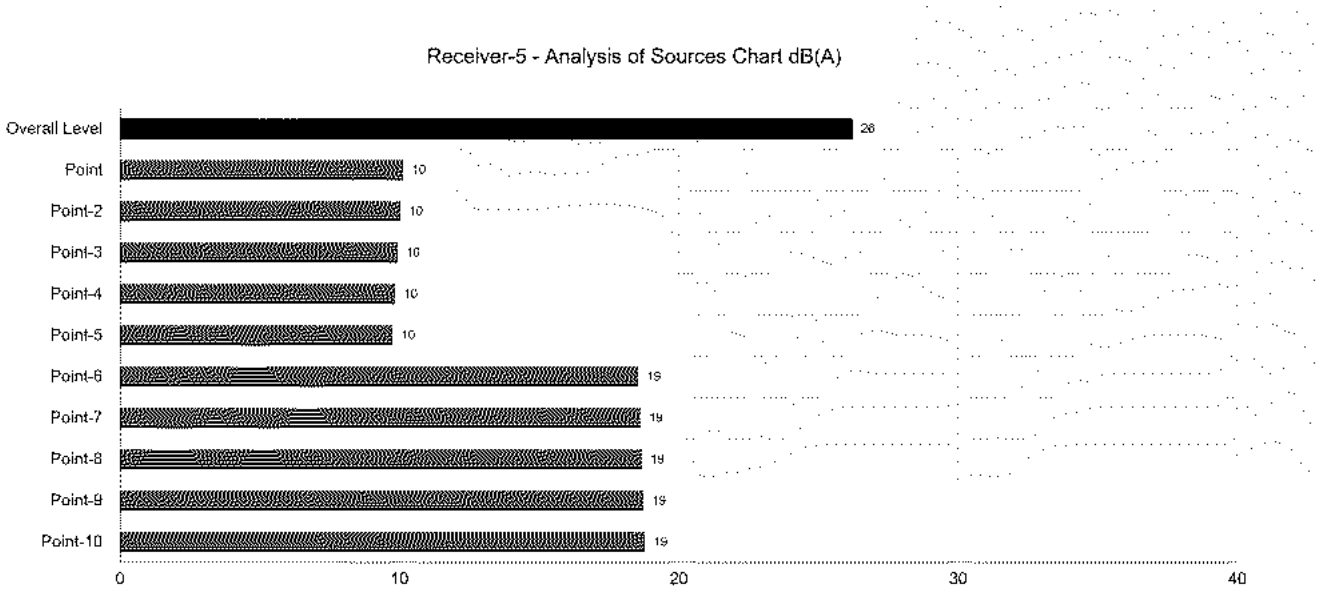
Receiver-4

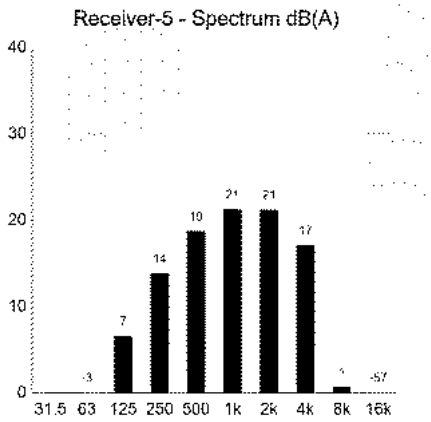




Location

Receiver-5





Location

Configuration

Hard Ground (Ground Factor = 0)
20°C Temperature
70% Humidity
Results are A-weighted
Results are rounded to 0 decimal places
Second order reflections are included
Reflections are only considered at a distance of 1m or greater from a reflector (facade level)
ISO9613-2 barrier attenuation limit (20/25dB) is enabled
Vertical edges (lateral paths) are included using convex paths only (following ISO17534-3 recommendation 5.2)
Ground reflections are not screened (as recommended in ISO17534-3 5.3)

References

ISO 9613-1:1993 — Attenuation of sound during propagation outdoors — Part 1: Calculation of the absorption of sound by the atmosphere
ISO 9613-2:1996 — Attenuation of sound during propagation outdoors — Part 2: General method of calculation
ISO/TR 17534-3:2015 — Acoustics — Software for the calculation of sound outdoors — Part 3: Recommendations for quality assured implementation of ISO 9613-2 in software according to ISO 17534-1. Quality Assurance and Test Cases: https://dbmap.net/iso17534results

EXHIBIT 4

Reference NO.: DL2019-065
Date: 03/20/2019

GenX and PFAS Chemical Declaration

To whom it may concern,

Trina Solar Co., Ltd **hereby states that Trina Solar's current** bill of materials (BOM) of monocrystalline and polycrystalline solar modules do not contain GenX and PFAS chemicals. And Trina Solar does not use these chemicals in the manufacturing process.

Customer Service Manager: _____

Signature Date: 20. 03. 2019

Trina Solar Co. Ltd..
No 2 . Tianhe Road, Trina PV Industrial Park, New District,
Changzhou, Jiangsu, 213031 T: +86 519 8548 2008 F: +86 519 8517 6021 E: sales@trinasolar.com

RECL-NEE-pfas-2021-01 Date: March 15, 2021

To,
NextEra Energy Resources Inc
700 Universe Boulevard,
Juno Beach, FL 33408-2683, USA

Statement – PFAS materials (Per- and polyfluoroalkyl substances)

Dear Nick,

We, Risen Energy Co., Ltd (hereinafter "Supplier"), herewith confirm that Risen Monofacial and Bifacial PV Modules supplied to you do not contain any PFAS materials (Per- and polyfluoroalkyl substances).

Yours sincerely,
For **Risen Energy Co., Ltd,**

Authorized Signatory
Bypina Veerraju Chaudary, CSMO

Test Report

REPORT No.: SHE19-09277

ATTENTION: Shubo YANG

DATE RECEIVED: 2019/09/02

CUSTOMER: Risen Energy Co.,Ltd

DATE REPORTED: 2019/10/16

Tashan Industry Zone,Meilin Street,Ninghai County Ningbo

SAMPLE (S): Solid (1)

REFERENCE: -

REMARKS

1.The results apply to the sample(s) as received

Edited by: Min ZHOU

Reviewed by: Jing REN

Approved by: Liqiong TANG

声明

Statement

1. 检测报告无本实验室检验检测专用章无效。

The test report is invalid without the official seal of the laboratory.

2. 未经本公司书面许可，不得复制 (全文复制除外) 检测报告。

This test report cannot be reproduced in any way, except in full content, without prior approval in writing by the laboratory.

3. 检测报告无编制、审核、批准人签字无效。

The test report is invalid without the signature of the compiler, the checker and the approver

4. 检测报告涂改无效。

The test report is invalid if altered.

5. 本检测报告以中文为准，英文文本（如有）仅为译文，两者发生冲突时，应以中文文本为准。

The test report has been drafted in Chinese and translated into English (if applicable) for convenience only. In the event of discrepancy, the Chinese version shall prevail.

6. 如对本检测报告有异议，请在收到报告10天之内与本公司联系。

Should you have any queries or objection to the test report, please contact us within 10 days after receiving the report.

符号表/Legend

NA 样品未测试该参数/The sample was not analysed for this analyte

↑ 提高检出限/Detection limit raised

↓ 降低检出限/Detection limit lowered

ND 未检出/Not Detected

INORGANIC & ORGANIC ANALYSIS

Report No.: SHE19-09277

Customer Reference: -

				Lab ID		SHE19-09277.001
				Customer ID	Limit	光伏组件 441425|0811673
				Date Received		2019/09/02
ITEM	METHOD	LOR	UNIT			**Solid**
Arsenic (As)	USEPA 200.8-1994	0.05	mg/L	≤5		<0.050
Barium (Ba)	USEPA 200.8-1994	0.01	mg/L	≤100		<0.010
Cadmium (Cd)	USEPA 200.8-1994	0.001	mg/L	≤1		<0.001
Chromium (Cr)	USEPA 200.8-1994	0.01	mg/L	≤5		<0.010
Lead (Pb)	USEPA 200.8-1994	0.01	mg/L	≤5		**3.85**
Selenium (Se)	USEPA 200.8-1994	0.05	mg/L	≤1		<0.050
Silver (Ag)	USEPA 200.8-1994	0.01	mg/L	≤5		<0.010
Mercury (Hg)	USEPA 7473-2007	0.005	mg/L	≤0.2		<0.005
2,4-D	USEPA 8151A-1996	0.0005	mg/L	≤10		<0.0005
2,4,5-TP (Silvex, Fenopop)	USEPA 8151A-1996	0.0005	mg/L	≤1		<0.0005
Benzene	USEPA 8260D-2018	0.0005	mg/L	≤0.5		<0.0005
Carbon tetrachloride	USEPA 8260D-2018	0.0005	mg/L	≤0.5		<0.0005
Chlorobenzene	USEPA 8260D-2018	0.0005	mg/L	≤100		<0.0005
Chloroform	USEPA 8260D-2018	0.0005	mg/L	≤6		<0.0005
1,4-Dichlorobenzene	USEPA 8260D-2018	0.0005	mg/L	≤7.5		<0.0005
1,2-Dichloroethane	USEPA 8260D-2018	0.0005	mg/L	≤0.5		<0.0005
1,1-Dichloroethene	USEPA 8260D-2018	0.0005	mg/L	≤0.7		<0.0005
2-butanone(MEK)	USEPA 8260D-2018	0.02	mg/L	≤200		<0.020
Tetrachloroethene	USEPA 8260D-2018	0.0005	mg/L	≤0.7		<0.0005
Trichloroethene	USEPA 8260D-2018	0.0005	mg/L	≤0.5		<0.0005
Vinyl chloride	USEPA 8260D-2018	0.0005	mg/L	≤0.2		<0.0005
2,4-Dinitrotoluene	USEPA 8270E-2018	0.0005	mg/L	≤0.13		<0.0005
Hexachlorobenzene	USEPA 8270E-2018	0.0005	mg/L	≤0.13		<0.0005
Hexachlorobutadiene	USEPA 8270E-2018	0.0005	mg/L	≤0.5		<0.0005

INORGANIC & ORGANIC ANALYSIS

Report No.: SHE19-09277

Customer Reference: -

			Lab ID	Limit	SHE19-09277.001
			Customer ID		光伏组件 441425|0811673
			Date Received		2019/09/02
ITEM	METHOD	LOR	UNIT		**Solid**
Hexachloroethane	USEPA 8270E-2018	0.0005	mg/L	≤3	<0.0005
Nitrobenzene	USEPA 8270E-2018	0.0005	mg/L	≤2	<0.0005
Pentachlorophenol	USEPA 8270E-2018	0.0025	mg/L	≤100	<0.0025
Pyridine	USEPA 8270E-2018	0.002	mg/L	≤5.0	<0.002
2,4,5-Trichlorophenol	USEPA 8270E-2018	0.0005	mg/L	≤400	<0.0005
2,4,6-Trichlorophenol	USEPA 8270E-2018	0.0005	mg/L	≤2	<0.0005
Methylphenol	USEPA 8270E-2018	0.001	mg/L	≤200	<0.001
2-Methylphenol	USEPA 8270E-2018	0.0005	mg/L	≤200	<0.0005
3&4-Methylphenol	USEPA 8270E-2018	0.0005	mg/L	≤200	<0.0005
Endrin	USEPA 8270E-2018	0.0005	mg/L	≤0.02	<0.0005
γ-BHC	USEPA 8270E-2018	0.0005	mg/L	≤0.4	<0.0005
Toxaphene	USEPA 8270E-2018	0.05	mg/L	≤0.5	<0.050
Methoxychlor	USEPA 8270E-2018	0.0005	mg/L	≤10	<0.0005
Heptachlor	USEPA 8270E-2018	0.0005	mg/L	≤0.008	<0.0005
Chlordane(Total)	USEPA 8270E-2018	0.001	mg/L	≤0.03	<0.001

Remark:

Preparative method:USEPA1311-1992(Toxicity Characteristic Leaching Procedure)

The Limits comes from CFR(code of federal regulations) title 40 part 261.24.

The test report shall only be used for client scientific research, teaching, internal quality control, product research and development, etc… and just for client internal reference.

Method List

USEPA 200.8-1994 Metals ICP-MS
USEPA 7473-2007 Metals-Hg
USEPA 8151A-1996 Acid Herbicides in Water by GC-MS
USEPA 8260D-2018 VOCs
USEPA 8270E-2018 SVOCs

Equipment information

Method:USEPA 200.8-1994

Equipment Name	Model	Equipment Number	Serial Number
ICP-MS	Agilent 7900	CHEM-779	JP14330369

Method:USEPA 7473-2007

Equipment Name	Model	Equipment Number	Serial Number
Hg analyzer	Milestone DMA-80	CHEM-958	16041979

Method:USEPA 8151A-1996

Equipment Name	Model	Equipment Number	Serial Number
GC-MS	Agilent 7890A/5975C	CHEM-ENV085	CN12371032/US12362A17
GC-MS	Agilent 7890B/5977A	CHEM-ENV090	CN13323155/US1333N202

Method:USEPA 8260D-2018

Equipment Name	Model	Equipment Number	Serial Number
PT-GC-MS	AQUATek100&Agilent7890B/5975A	CHEM-937	US15240014/CN15423234/US1541L452

Method:USEPA 8270E-2018

Equipment Name	Model	Equipment Number	Serial Number
GC-MS	Agilent 7890B/5977B	CHEM-1013	CN16433131/US1643M01

Method:USEPA 8270E-2018

Equipment Name	Model	Equipment Number	Serial Number
GC-MS	Agilent 7890B/5977B	CHEM-1013	CN16433131/US1643M01

The following information is provided by the customer:

To Whom It May Concern, Risen Energy Co., Ltd. has delivered samples on 27th August, 2019. For the materials of the samples, please see the table below.
The relevant information listed below is included in the finished product. The above content is true and effective. If the information is false, all the responsibilities are borne by the company.

SN.	TYPE OF MATERIAL	BOM 1		
		Type	RSM144-6-380BMDG	
		Serial number	**441425I0811673**	
		VENDOR	TYPE/MODEL	REMARKS
1	SOLAR CELL	Risen Energy Co., Ltd.	RSTDB156B	5BB(1/2cut), 157.75x78.88 ± 1.5mm, thickness: 180 ± 18um, area: 123.55±2.35cm^2
2	SUPERATE	CNBM(Yixing) New Energy Resources Co., Ltd.	ARC Glass	2.0mm
3	SUBSTRATE	CNBM(Yixing) New Energy Resources Co., Ltd.	Glass	2.0mm
4	ENCAPSULATION MATERIAL (Front)	Changzhou Sveck PV NEW MATERIAL CO., LTD.	SE-556	Thickness: 0.5mm (0.45~0.55mm) for both sides
5	ENCAPSULATION MATERIAL (Back)	Changzhou Sveck PV NEW MATERIAL CO., LTD.	SE-556	Thickness: 0.45~0.55mm for both sides
6	FRAME PARTS	Zhejiang Twinsel Electronic Technology Co., Ltd.	6063 T5	2016x998x25mm
7	CELL CONNECTOR	Zhejiang Twinsel Electronic Technology Co., Ltd.	Cu Purity ⩾99.97%	0.21*1.0mm
8	STRING CONNECTOR	Zhejiang Twinsel Electronic Technology Co., Ltd.	Cu Purity ⩾99.97%	0.35*6/0.3*4/0.4*4mm
9	LRF	Changzhou Sveck New Material Technology Co., Ltd.	SVK-FG01	Thickness: 0.12 ± 0.02mm
10	ADHESIVE (FRAME)	Suzhou Tonsan Adhesive Co., Ltd.	1527	
11	FIXING TAPE	Teraoka Seisakusho	631S	
12	FLUXING AGENT	Asahi SOLDER	SF56	

The following information is provided by the customer:

To Whom It May Concern, Risen Energy Co., Ltd. has delivered samples on 27th August, 2019. For the materials of the samples, please see the table below.
The relevant information listed below is included in the finished product. The above content is true and effective. If the information is false, all the responsibilities are borne by the company.

SN.	TYPE OF MATERIAL	BOM 1		
		Type	RSM144-6-380BMDG	
		Serial number	**441425I0811673**	
		VENDOR	TYPE/MODEL	REMARKS
13	JUNCTION BOX	Zhejiang Twinsel Electronic Technology Co., Ltd.	PV-SY017	DC1500V, 15A, IP68
14	CABLES	Zhejiang Twinsel Electronic Technology Co., Ltd.	H1Z2Z2-K	1x4.0mm^2
15	CONNECTORS	Zhejiang Twinsel Electronic Technology Co., Ltd.	PV-SY02	DC1500V, 30A, IP68
16	BYPASS DIODES	Zhejiang Twinsel Electronic Technology Co., Ltd.	SBRB3050TS	Max. PRV 50V
17	ADHESIVE (JUNCTION BOX)	Suzhou Tonsan Adhesive Co., Ltd.	1527	
18	POTTING MATERIAL	Suzhou Tonsan Adhesive Co., Ltd.	1521	

APPENDIX

Report No.:SHE19-09277

Customer Reference: -

End of report

Test Report

REPORT No.:	SHE20-11364/1	DATE RECEIVED:	2020/10/12
ATTENTION:	Ya XIAO	ANALYSIS DATE :	2020/10/12~2020/10/22
CUSTOMER:	Trina Solar Co., Ltd.	DATE REPORTED:	2020/10/22
	No.2 TianHe Road, Trina PV Industrial Park, New District, Changzhou City, Jiangsu Province 213031, P. R	SAMPLE (S):	Solid waste (1)
REFERENCE:	-		

REMARKS

1.The results apply to the sample(s) as received

2.The report is translated from SHE20-11364.

Edited by: _____
Min ZHOU

Reviewed by: _____
Jun MENG

Approved by: _____
Liqiong TANG

Statement

1. The test report is invalid without the official seal of the laboratory.

2. This test report cannot be reproduced in any way, except in full content, without prior approval in writing by the laboratory.

3. The test report is invalid without the signature of the compiler, the checker and the approver

4. The test report is invalid if altered.

5. The test report has been drafted in Chinese and translated into English (if applicable) for convenience only. In the event of discrepancy, the Chinese version shall prevail.

6. Should you have any queries or objection to the test report, please contact us within 10 days after receiving the report.

Legend

NA The sample was not analysed for this analyte

↑ Detection limit raised

↓ Detection limit lowered

ND Not Detected

INORGANIC & ORGANIC ANALYSIS

Report No.: SHE20-11364/1

Customer Reference: -

				Limit	
			Lab ID		SHE20-11364.001
			Customer ID		TSM-xxDEG15MC.20(II) 光伏组件
			Model No		SHES2010019995TX
			Date Received		2020/10/12
TCLP ITEM	METHOD	MDL	UNIT		**Solid waste**
Arsenic (As)	USEPA 200.8-1994	0.050	mg/L	≤5	<0.050
Barium (Ba)	USEPA 200.8-1994	0.010	mg/L	≤100	**0.116**
Cadmium (Cd)	USEPA 200.8-1994	0.001	mg/L	≤1	<0.001
Chromium (Cr)	USEPA 200.8-1994	0.010	mg/L	≤5	<0.010
Lead (Pb)	USEPA 200.8-1994	0.010	mg/L	≤5	<0.010
Selenium (Se)	USEPA 200.8-1994	0.050	mg/L	≤1	<0.050
Silver (Ag)	USEPA 200.8-1994	0.010	mg/L	≤5	<0.010
Mercury (Hg)	USEPA 7473-2007	0.005	mg/L	≤0.2	<0.005

Remark:

1.Preparative method:USEPA1311-1992(Toxicity Characteristic Leaching Procedure)

2.The Limits comes from CFR(code of federal regulations) title 40 part 261.24.

Method List

USEPA 200.8-1994 Metals ICP-MS
USEPA 7473-2007 Metals-Hg

Equipment Information

Method:USEPA 200.8-1994

Equipment Name	Model	Equipment Number	Serial Number
ICP-MS	Agilent 7900	CHEM-998	JP16311502

Method:USEPA 7473-2007

Equipment Name	Model	Equipment Number	Serial Number
Hg analyzer	Milestone DMA-80	CHEM-958	16041979

3rd Building, No.889 Yishan Road, Xuhui District, Shanghai, China 200233 t (86-21) 51072828 f (86-21) 61152164 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 t (86-21) 51072828 f (86-21) 61152164 e sgs.china@sgs.com

APPENDIX

Report No.:SHE20-11364/1

Customer Reference: -

End of report

OPERATIONS & MAINTENANCE PLAN

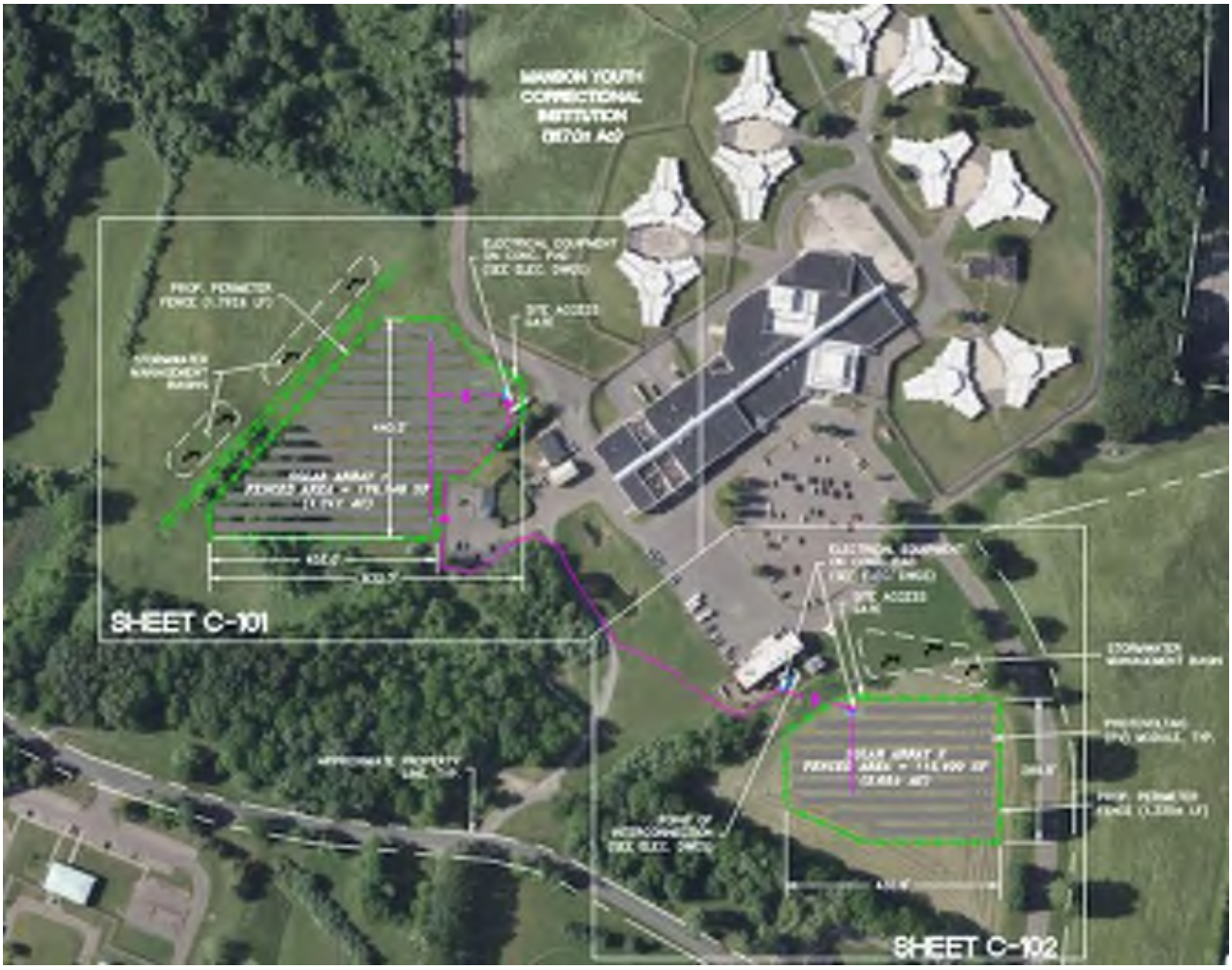
MANSON YOUTH

42 Jarvis Street

Cheshire, Connecticut

Project Description

The proposed project is a ground fixed tilt photovoltaic system of 1.95MW located at the Manson Youth Correctional Institution in Cheshire CT. The project includes photovoltaic panels, inverters, transformers, sensors, perimeter fencing, stormwater management and an electrical interconnection behind the meter of existing electrical infrastructure.



Performance Monitoring

The Performance Monitoring service level provides information to visualize solar system operations, allowing a customer's team to detect and address issues. This service level is designed for customers with a fully qualified solar maintenance team or third-party provider that is experienced in DC and AC electrical systems over 600V, able to follow OSHA safety regulations, and certified by OEMs to perform O&M services on solar systems.

Monitoring & Reporting

Monitoring and Reporting provides information to visualize solar system operations, allowing a customer's team to detect and address issues.

Monitoring and Reporting services include:

- *Customer Technical Support Hotline*
  Using the toll-free number, SunPower Customer Service is available to answer questions and respond to problems 24/7/365. SunPower technical experts, specializing in remote troubleshooting, assist facility and energy personnel in determining the source and resolving issue(s).
- *Power Factors Drive®*
  A leading 3rd party monitoring portal, Power Factors Drive ensures the customer will have access to advanced monitoring technology. Customers use Power Factors® to access and monitor real time information regarding the conditions and performance of its solar system(s). Easy to read and understand, historical and current system performance can be displayed in charts, graphs, or exported for detailed analysis.
- *Performance Monitoring and Notification*
  The SunPower Command Center monitors customer's solar system's operational status and performance around the clock and promptly notifies the customer if there is an outage or a decrease in solar system performance.
- *Performance Report - Annual*
  At the anniversary of customer's solar system start-up, SunPower customers receive a standardized performance report that compares actual to expected energy production while considering weather conditions and other variables.

Preventative Maintenance

The SunPower preventative maintenance program includes the following, occurring per manufacturer's specifications, for the applicable solar system components:

- *Inverter*
  - Perform preventative maintenance required by manufacturer to maintain applicable warranty
- *PV Modules and Helix Balance of System (BOS)*
  - Inspect ground braids, electrodes, and conductors for damage
  - Inspect PV modules for damage, discoloration or de-lamination
  - Inspect mounting system for damage or corrosion
- *Meteorological Station*
  - Inspect weather measurement equipment for damage
  - Clean pyranometers and reference cells
- *Site Conditions*
  - Inspect drainage conditions
  - Inspect vegetation for array shading or fire hazards
  - Inspect safety conditions and proper storage
- *Maintenance Reporting*
  - Record results of all inspections
  - Take photographs of any damage or defects identified

PROJECT-SPECIFIC O&M SERVICES

Solar Module Cleaning

Over the course of a year, soil, pollens and pollutants can accumulate on solar system arrays. Solar Module Cleaning is not expected to be required for this project due to the geographical region and seasonable weather that often keeps solar panels clean. In the event that solar panel cleaning is identified as needed maintenance activity, SunPower can offer this service.

Vegetation Management

Vegetation management is critical to system performance and reliability since vegetation overgrowth can significantly impact the ground mounted system performance. For ground mounted systems, SunPower provides mechanical mowing and herbicidal applications as required and/or permitted.

Sensor Calibration

As part of our O&M services, SunPower offers sensor calibration for sites with Metrological (Met) stations for Met data is necessary for customer weather reporting, PV plant performance calculations, troubleshooting, alarm triggers, and PeGu administration; therefore, its accuracy is paramount for performance.
Our sensor calibration offering includes:

- Field comparison of pyranometers and reference cells to calibrated sensor
- Adjust field sensor to within manufacturer's uncertainty tolerance
- SunPower may replace pyranometers in lieu of field calibration

Transformer Preventative Maintenance

Transformer preventive maintenance is highly recommended for any systems with external transformers installed. Transformer preventive maintenance includes:

- Maintaining records of load current and voltage
- Recording liquid level and temperature
- Pad-mounted transformer oil tests where applicable
- Testing ground connections
- Inspecting surge arresters (if present)
- Inspecting external elements
- Inspecting the interior cabinet

Switchgear Preventative Maintenance

Switchgear preventative maintenance is highly recommended for any systems with high-voltage switchgear installed. Switchgear preventative maintenance includes:

- Electrical terminal thermography
- Visual inspection
- Vacuum cleaning of cabinet interior

END OF DOCUMENT