



STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: siting.council@ct.gov

Web Site: portal.ct.gov/csc

VIA ELECTRONIC MAIL

July 11, 2023

Carrie Larson Ortolano, Esq.
General Counsel
LSE Pyxis LLC
c/o Lodestar Energy LLC
40 Tower Lane, Suite 201
Avon, CT 06001
cortolano@lodestarenergy.com

RE: **PETITION NO. 1544** - LSE Pyxis LLC (Lodestar Energy) declaratory ruling, pursuant to Connecticut General Statutes §4-176 and §16-50k, for the proposed construction, maintenance and operation of a 4-megawatt AC solar photovoltaic electric generating facility located at 599 Greenwoods Road East, Norfolk, Connecticut, and Winsted-Norfolk Road, Colebrook, Connecticut and associated electrical interconnection.

Dear Attorney Ortolano:

The Connecticut Siting Council (Council) is in receipt of your correspondence dated July 10, 2023, regarding compliance with Condition Nos. 2 and 3 of the Council's Declaratory Ruling issued on January 20, 2023 for the above-referenced facility. The correspondence includes a passing Toxicity Characteristic Leaching Procedure test result for the selected solar panels, in accordance with Condition No. 2, and a copy of the DEEP Stormwater Permit, in accordance with Condition No. 3.

Therefore, the Council acknowledges that Condition Nos. 2 and 3 have been satisfied. This acknowledgment applies only to the conditions satisfied by the July 10, 2023 correspondence.

Please be advised that deviations from the standards established by the Council in the Declaratory Ruling are enforceable under the provisions of Connecticut General Statutes §16-50u.

Thank you for your attention and cooperation.

Sincerely,

A handwritten signature in dark ink, appearing to read "Melanie A. Bachman".

Melanie A. Bachman
Executive Director

MB/RDM

c: Service List, dated November 1, 2022



July 10, 2023

VIA ELECTRONIC AND HAND DELIVERY

Attorney Melanie Bachman
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

RE: Petitioner #1544 -- LSE Pyxis LLC ("Lodestar") for a Declaratory Ruling that No Certificate of Environmental Compatibility and Public Need is Required for the Construction, Operation and Maintenance of Solar Photovoltaic Facility in Norfolk, Connecticut

Dear Attorney Bachman:

In connection with the above-captioned petition and the Council's approval dated January 20, 2023, please find attached Petitioner's passing TCLP testing (condition #2) and copy of the DEEP stormwater permit (condition #3). Please contact me directly if you have any questions.

Sincerely,

Carrie L. Ortolano

Carrie L. Ortolano
General Counsel

Enclosures

TÜV Rheinland (Shanghai) Co., Ltd.

ZNshine Solar Module TCLP Report

Commissioned Test

Client: ZNSHINE PV-TECH Co., Ltd.

Report No.: CN227VOX 001

September 2022

TÜV Rheinland (Shanghai) Co., Ltd.

B1-13F No. 177, Lane 777 West Guangzhong Road
Jing'an District, Shanghai, P.R.China

www.tuv.com/solar

Please contact: Allen Qian
Phone: +86 21 6081 4897
Email: Allen.Qian@tuv.com

Rev No.	Rev. Date	Content/Changes	Prepared/revised	Checked/released
1	30 September 2022	Formal Report	Allen Qian	Shangshang Ju

X *Allen Qian*

Inspector

X *Shangshang Ju*

Reviewer

Disclaimer

TÜV Rheinland has prepared this document solely for the project referred to in this report on behalf of the Client based on the hereto related appointment letter ("Agreement"). This report is, in all cases, subject to the terms and conditions set forth herein and in the Agreement, in particular exclusions on liability.

This report is a review covering technical aspects of the project based on information provided by the Client. It shall not be relied upon as an alternative to a legal or financial assessment particularly since it is not intended to constitute any guarantee of the financial performance of the project. Also, the report should not be relied upon or used for any other project without an independent check being carried out as to its suitability. Any other use requires the prior written consent of TÜV Rheinland. Publication or dissemination of extracts, appraisals or any other revision and adaptation hereof, in particular for advertising purposes, requires the prior written consent of TÜV Rheinland.

TÜV Rheinland has assumed and relied upon the accuracy and completeness of the information obtained from Client for the purpose of rendering the report. No representation or warranty, express or implied, is or will be made in relation to the accuracy or completeness of such Client information or that the use of this report will lead to any particular outcome or result. TÜV Rheinland accepts no responsibility or liability for the consequences of this report being used for a purpose other than the purposes for which it was commissioned and TÜV Rheinland accepts no responsibility or liability for this report to any party other than the Client as set forth in the Agreement.

Client:	ZNSHINE PV-TECH Co., Ltd.
Quotation No.:	245782345
Order No.:	244446750
Order Date:	31.08.2022

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List of Abbreviations

ND: Not detected

µg/L: Microgram per liter

mg/L: Milligrams per liter

TCLP: Toxicity Characteristic Leaching Procedure

TUV: TÜV Rheinland (Shanghai) Co., Ltd.

J-Box: Junction-Box

1. Executive Summary

General Information	
Client	ZNSHINE PV-TECH Co., Ltd.
Project Name	ZNshine Solar Module TCLP
Product Specification	ZNshine Solar Photovoltaic Module: ZXM7-SHLDD144-XXX/M, ZXM6-NHLDD144-XXX/M
Detail of sample	<ol style="list-style-type: none"> 1. A section of the laminate, including the glass superstrate and substrate (top and bottom), the encapsulant, the cell and the interconnect wires (aka ribbons) 2. A section of the aluminum frame with the adhesive used to adhere the frame to the laminate 3. A complete junction box assembly, including the adhesive used to adhere the assembly to the substrate, the junction box, diodes, cables, connectors and potting compound.
Test Details	
Scope of work	TCLP
Test Period	22.09.2022 - 28.09.2022
Laboratory	TÜV Building III, No.177, Lane 777, West Guangzhong Road Jingan District, Shanghai, China
Reference Standards	For Arsenic, Mercury, Selenium: HJ/T 300-2007; HJ694-2014
	For Barium, Cadmium, Chromium, Lead, Silver: HJ/T 300-2007; HJ776-2015
Result	<ol style="list-style-type: none"> 1. Arsenic was found in Laminate, Frame, J-box. 2. Barium was found in frame. 3. Mercury was found in J-box. 4. Other elements were not found. <p>Note: Refer to table 1 for data Detail in next page.</p>

2. Results

Table 1:

Metal	Results			Threshold	Unit
	Laminate	Frame	J-box		
Arsenic	1.0	1.4	1.0	0.3	µg/L
Barium	ND	0.03	ND	0.01	mg/L
Cadmium	ND	ND	ND	0.05	mg/L
Chromium	ND	ND	ND	0.03	mg/L
Lead	ND	ND	ND	0.1	mg/L
Mercury	ND	ND	0.08	0.04	µg/L
Selenium	ND	ND	ND	0.4	µg/L
Silver	ND	ND	ND	0.03	mg/L

Remark: ND: Not detected.

Reference Standards: For Arsenic, Mercury, Selenium: HJ/T 300-2007; HJ694-2014

Reference Standards: For Barium, Cadmium, Chromium, Lead, Silver: HJ/T 300-2007; HJ776-2015

3. Equipment List

Table 2:

Equipment name	Equipment Type	Equipment number
Atomic fluorescence photometer	AFS8510	F-004-01
Inductively coupled plasma emission spectrometer	Icap6000	Icap6000

End of the report

ZXM7-SHLDD144 Series ZNSHINESOLAR

Znshinesolar 10BB HALF-CELL Bifacial Light-Weight Double Glass Monocrystalline PERC PV Module

525W | 530W | 535W | 540W | 545W | 550W



Excellent cells efficiency

MBB technology decreases the distance between busbar and finger grid line which is benefit to power increase.



Better Weak Illumination Response

More power output in weak light condition, such as haze, cloudy, and early morning.



Anti PID

Ensured PID resistance through the quality control of cell manufacturing process and raw materials.



Adapt To Harsh Outdoor Environment

Resistant to harsh environments such as salt, ammonia, sand, high temperature and high humidity environment.



TIER 1

Global, Tier 1 bankable brand, with independently certified state-of-the-art automated manufacturing.



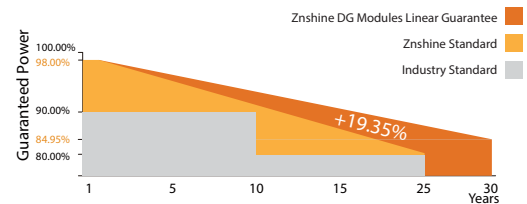
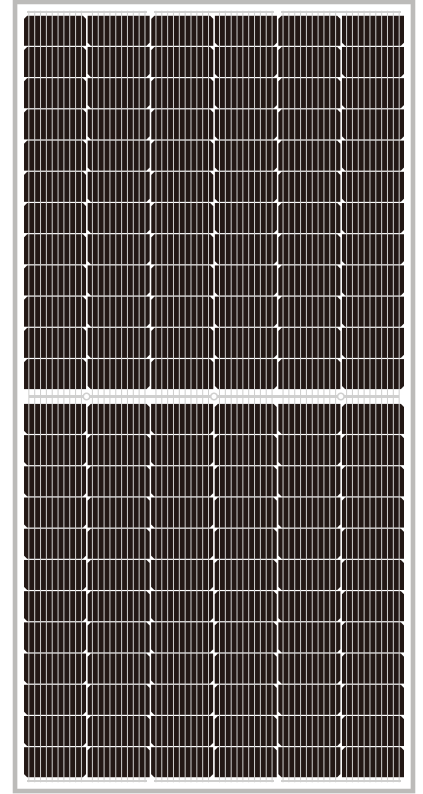
Excellent Quality Management System

Warranted reliability and stringent quality assurances well beyond certified requirements.



Bifacial Technology

Up to 25% additional power gain from back side depending on albedo.



12 years product guarantee
30 years output guarantee



0.45% annual degradation
over 30 years



IEC61215/IEC61730/IEC61701/IEC62716/UL61730

ISO 9001: Quality Management System

ISO 14001: Environmental Management System

ISO45001: Occupational Health and Safety Management System

Founded in 1988, ZNShine solar is a world's leading high-tech PV module manufacturer. With the state-of-the-art production lines, the company boasts module capacity of 6GW. Bloomberg has listed ZNShine as a global Tier 1 PV module maker. Today Znshine has distributed its sales to more than 60 countries around the globe.

www.znshinesolar.com

ELECTRICAL CHARACTERISTICS | STC*

Nominal Power Watt Pmax(W)*	525	530	535	540	545	550
Power Output Tolerance Pmax(%)	0~+3	0~+3	0~+3	0~+3	0~+3	0~+3
Maximum Power Voltage Vmp(V)	40.90	41.10	41.30	41.50	41.70	41.90
Maximum Power Current Imp(A)	12.85	12.91	12.96	13.02	13.07	13.13
Open Circuit Voltage Voc(V)	49.20	49.40	49.60	49.80	50.00	50.20
Short Circuit Current Isc(A)	13.59	13.65	13.71	13.77	13.83	13.89
Module Efficiency (%)	20.32	20.52	20.71	20.90	21.10	21.29

*STC (Standard Test Condition): Irradiance 1000W/m², Module Temperature 25°C, AM 1.5

*Measuring tolerance: ±3%

ELECTRICAL CHARACTERISTICS | NMOT*

Maximum Power Pmax(Wp)	392.70	396.40	399.90	403.60	406.80	410.80
Maximum Power Voltage Vmp(V)	38.00	38.20	38.40	38.50	38.80	38.90
Maximum Power Current Imp(A)	10.33	10.38	10.42	10.47	10.49	10.56
Open Circuit Voltage Voc(V)	46.00	46.20	46.30	46.50	46.70	46.90
Short Circuit Current Isc(A)	10.98	11.02	11.07	11.12	11.17	11.22

*NMOT(Nominal module operating temperature):Irradiance 800W/m², Ambient Temperature 20°C,AM 1.5,Wind Speed 1m/s

ELECTRICAL CHARACTERISTICS WITH 25% REAR SIDE POWER GAIN

Front power Pmax/W	525	530	535	540	545	550
Total power Pmax/W	656	663	669	675	681	688
Vmp/V(Total)	41.00	41.20	41.40	41.60	41.80	42.00
Imp/A(Total)	16.01	16.08	16.15	16.23	16.30	16.37
Voc/V(Total)	49.30	49.50	49.70	49.90	50.10	50.30
Isc/A(Total)	16.95	17.02	17.10	17.17	17.25	17.32

MECHANICAL DATA

Solar cells	Mono PERC
Cells orientation	144 (6×24)
Module dimension	2278×1134×30 mm(With Frame)
Weight	33.5 kg
Glass	2.0 mm+2.0mm, High Transmission, AR Coated Heat Strengthened Glass
Junction box	IP 68, 3 diodes
Cables	4 mm ² ,350 mm
Connectors	MC4-compatible

TEMPERATURE RATINGS

NMOT	44°C ±2°C	Maximum system voltage	1500 V DC
Temperature coefficient of Pmax	-0.35%/°C	Operating temperature	-40°C~+85°C
Temperature coefficient of Voc	-0.29%/°C	Maximum series fuse	30 A
Temperature coefficient of Isc	0.05%/°C	Maximum load(snow/wind)	5400 Pa / 2400 Pa
Refer.Bifacial Factor	70±5%		

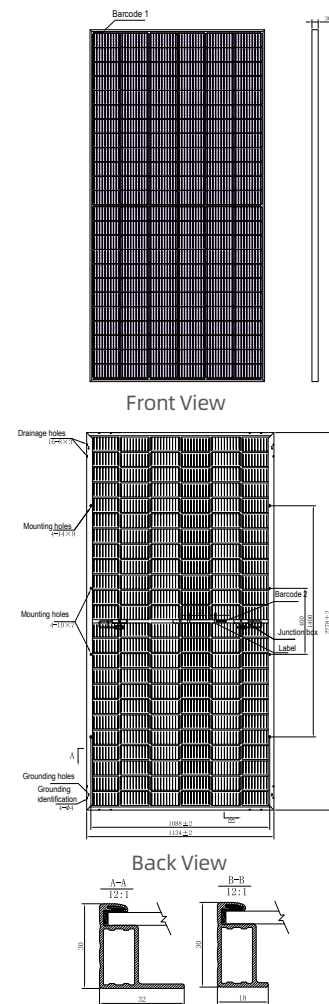
*Do not connect Fuse in Combiner Box with two or more strings in parallel connection

*Remark:Electrical data in this catalog do not refer to a single module and they are not part of the offer.They only serve for comparison among different module types.

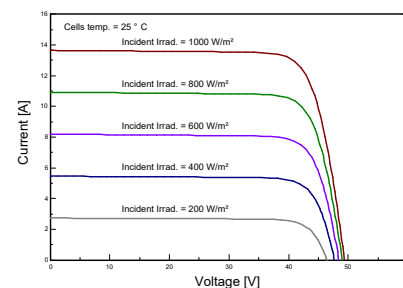
PACKAGING CONFIGURATION

Piece/Box	36	
Piece/Container(40'HQ)	720	*Please be kindly advised that PV modules should be handled and installed by qualified people who have professional skills and please carefully read the safety and installation instructions before using our PV modules.
Piece/Container(with additional small package)	/	

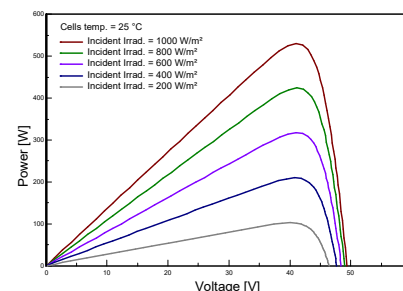
DIMENSIONS(MM)



I-V CURVES OF PV MODULE(530W)



P-V CURVES OF PV MODULE(530W)





Bureau of Materials Management and Compliance Assurance

Notice of Permit Authorization

March, 09 2023

Dan Watson
LODESTAR ENERGY LLC
40 Tower Lane
Avon, CT 06001

Subject: General Permit Registration for the Discharge of Stormwater and Dewatering
Wastewaters from Construction Activities
Application NO.: 202210758

Dan Watson:

The Department of Energy and Environmental Protection, Water Permitting and Enforcement Division of the Bureau of Materials Management and Compliance Assurance, has completed the review of the Norfolk Transfer Station (located at 599 Greenwoods Road East, Town of Norfolk) registration for the **General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities, effective 12/31/2020 (general permit)** . The project is compliant with the requirements of the general permit and the discharge(s) associated with this project is (are) authorized to commence as of the date of this letter. Permit No. GSN003879 has been assigned to authorize the stormwater discharge(s) from this project.

Questions can be emailed to deep.stormwater@ct.gov.