

## LOW-CARBON MANUFACTURING OF SOLAR GLASS

November 2022





## Introduction

Canadian Premium Sand Inc. ("CPS" or "the Company") is a public company listed on the TSX-Venture Exchange

Building North America's first integrated solar glass manufacturing facility (Industry currently dependent on Asia Pacific glass producers)

Significant, growing demand for patterned solar glass (>500% expected growth in North America over the next decade)

**Developing a low-carbon facility with a long-term cost advantage** (Strategically located, renewable energy supply, ownership of sand resource)

> **Strong project economics supported by FEED study** (Estimated pre-tax NPV10 of +C\$800 million and IRR >25%)

**Funded to reach shovel ready status, which is expected by early 2023** (Detailed project planning in-place, led by an experienced management team)

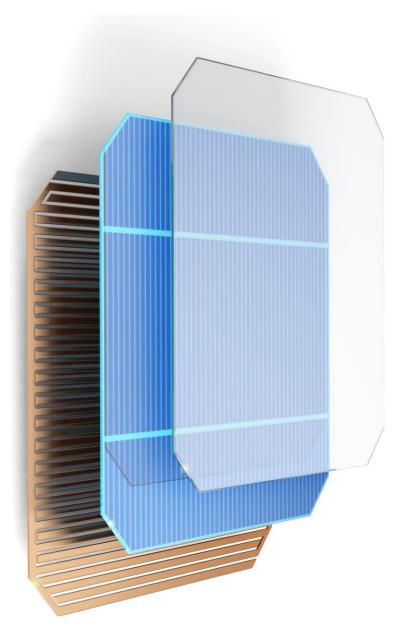




## **Considerable Developments Achieved to Date**

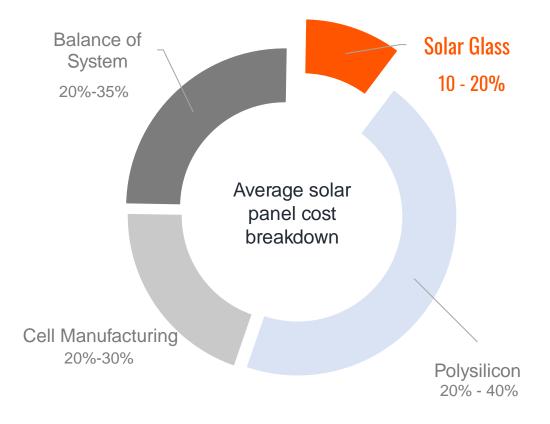
- Secured and delineated a wholly-owned silica sand resource of 7.25 million tonnes (inferred resource)
   = 50+ years of supply
- ✓ Conducted geochemical analysis of sand resource confirming appropriate purity and low-iron characteristics required for solar glass manufacturing
- ✓ Finalized a Front-end Engineering & Design (FEED) study that confirmed industry leading economics
- ✓ Secured a 121-acre land parcel in Selkirk, Manitoba with ideal characteristics for the project
- ✓ Negotiated commercial offtake MOUs with Hanwha Solutions and Heliene Inc., which equates to adding up to 120% of phase 1 capacity
- Raised \$9.6 million in equity on August 31, 2022, supported by insiders / existing shareholders and 4 new institutional shareholders = fully funded for remaining development activities

# Solar Glass is a Critical Component of Solar Panels



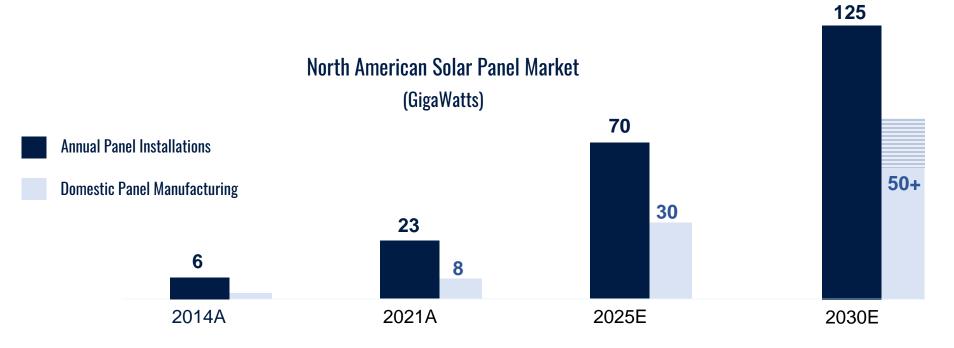
Patterned solar glass:

- Maximizes light transmittance
- Protects solar panel from elements



## Significant North American Market Growth

- 1. Annual solar panel **installations** are expected to grow >20% annually:
  - Solar energy is now cost competitive with traditional sources of energy
- 2. Domestic solar panel **manufacturing** expected to grow >500% over the next 8 years:
  - A resurgence of domestic panel manufacturing is rapidly underway
  - Strong desire by industry and government to reduce dependence on foreign supply



# **Current Dependence on Asia-Pacific Suppliers**

## Asia-Pacific Supply Issues:

- Unpredictable costs
- Volatile tariff environment
- Insecure logistics
- High carbon intensity

## Imports:

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Glass, components and fully assembled solar panels

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Domestic solar panel manufacturers are aggressively seeking a local supply of glass and <u>CPS is the only option</u>

CPS Glass Facility

> North American Solar Panel Manufacturing Customers

# **Strategically Located and Vertically Integrated**

Integration of sand resource with value-added manufacturing offers significant benefits



## Sand Resource

Solar Glass Facility

- ✓ Rare low-iron silica resource
- ✓ Abundant supply of 50+ years
- Cost certainty of key raw material
- ✓ Minimal overburden
- ✓ Minimal processing required

- ✓ Close to sand resource
- Low-cost hydro-electric power
- Designed with sustainability in mind
- ✓ Strong labour pool
- ✓ Efficient transportation hub
- Proximity to large solar panel manufacturers



## **Glass Plant Site**

Option to purchase agreement signed for 121 acres of land zoned for heavy industrial purposes:

- Proximity to Manitoba Hydro 115kV power line, enabling access to renewable hydro-electric energy
- Pipeline access to wastewater plant, enabling use of high-quality recycled water
- Access to Class 1 rail line located on the south boundary
- Sufficient land to accommodate up to 4 phases of manufacturing capacity for future growth



# **Community Impact and Sustainable Development**

## **Positive Community Impact**

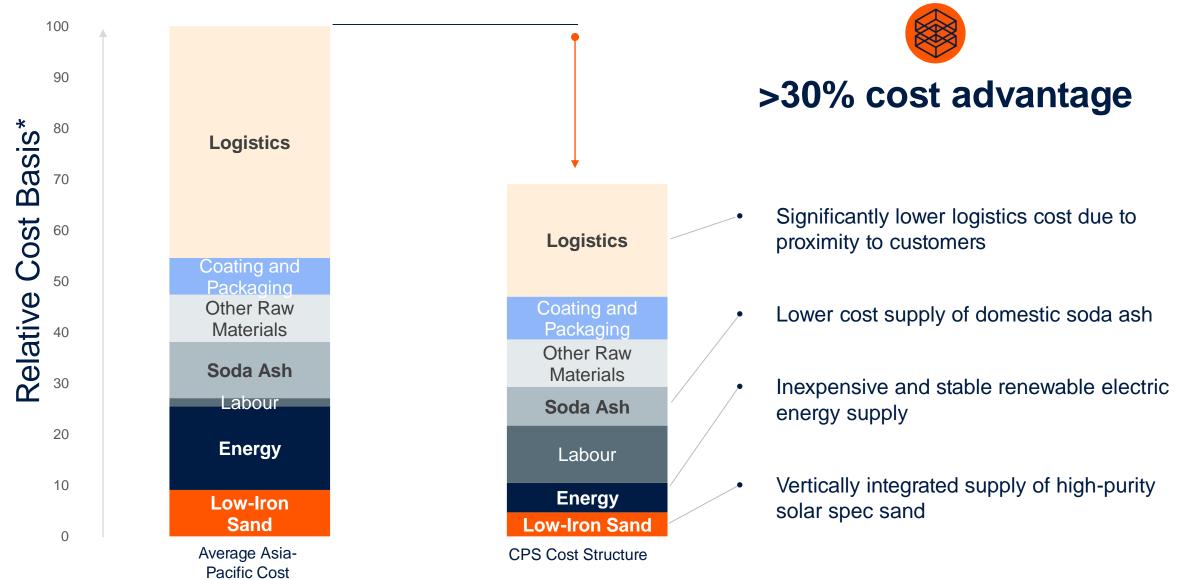
- Participation agreements with Hollow Water First Nation and Community of Seymourville
- Local employment opportunities for nearby communities
  - 600+ jobs during construction phase,
  - 300 jobs for glass manufacturing operations, and
  - 30 jobs related to the sand extraction site

## **Sustainable Development**

- Alignment with Municipal, Provincial and Federal visions for sustainable economic development
- Utilizing renewable energy supply to reduce net carbon footprint per unit of glass production
- Using environmentally responsible natural resource management and rehabilitation techniques
- Utilizing recycled water in the manufacturing process along with waste heat recovery



# Long Term Cost Advantage



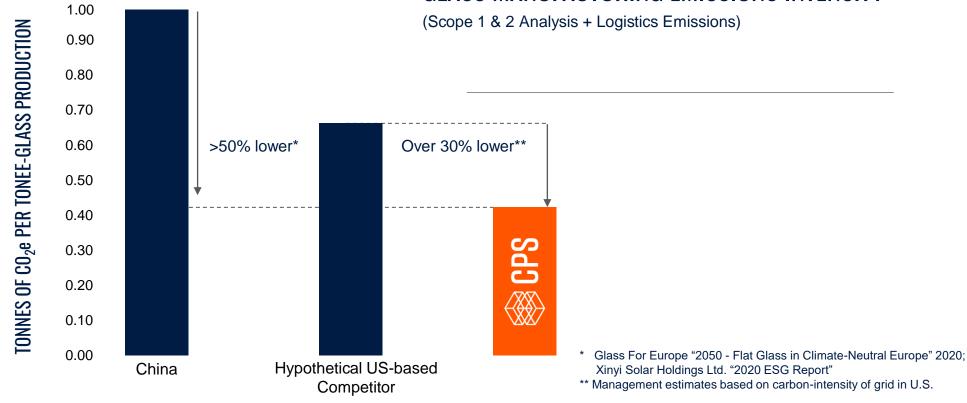
\* Cost comparison is based on commodity futures for LNG and a normalized ocean freight cost from Asia-Pacific



# **Low-Carbon Manufacturing**

## **CPS will set a new standard for low-carbon manufacturing:**

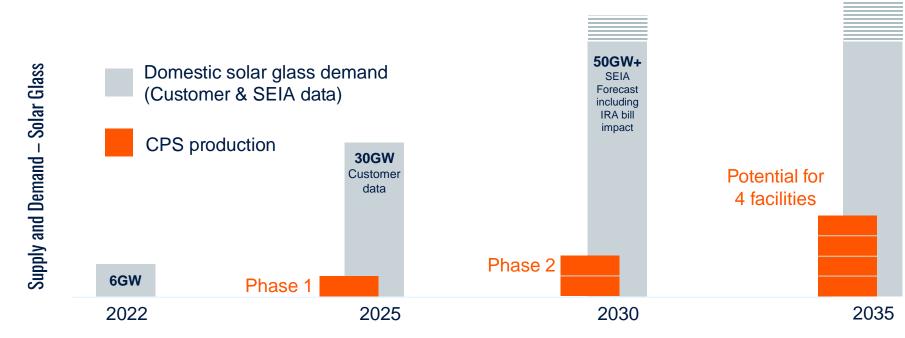
- Hydro-electric power
- Integration and proximity of solar spec sand resource
- Proximity to customers



## **GLASS MANUFACTURING EMISSIONS INTENSITY**

## **Attractive FEED Study Economics**

- Phase 1 annual production of 20 million m<sup>2</sup> (equivalent to 4GW solar panel manufacturing demand)
- Gross margins are expected to exceed 50% using industry price forecasts
- Phase 1 pre-tax IRR is predicted to exceed 25% and generate a pre-tax NPV10 of +C\$800 million\* at delivered price of US\$12.0 / m<sup>2</sup>
- Internally funded Phase 2 improves pre-tax IRR to over 30% and pre-tax NPV10 to +\$1,500 million\* by leveraging investment in common infrastructure (pricing remains at US\$12)
- Phased approach to future expansion maintaining attractive glass pricing



\* Internal financial modeling supported by Front End Engineering and Design (FEED) study

# Near-Term Value Creation Through Project Development

Environmental license

for sand extraction

facility (Q4 2022)

- Attractive project economics confirmed by capital and operating cost certainty
- Visibility of cashflow through firm offtake contracts
- Execution risk reduced through fixed price construction contracts



Detailed design completion (Q4 2022) = 95% capital cost

certainty

Value

Today

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\$30 million market capitalization

Rare, low-iron sand resource

Customer MOUs

prior to considering intrinsic value of:

Social license to execute the project

Development activities achieved to-date

Secure offtake

agreements (Q4 2022)

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## **Corporate Overview**

Capitalization		Current
Share price (November 2, 2022)	(\$/share)	\$0.40
Common shares outstanding	(MM)	78
Market capitalization (basic)	(\$MM)	\$31.2
Net cash outstanding		
Cash and equivalents	(\$MM)	\$10.0
Less: 12.0% convertible debentures due February 26, 2024	(\$MM)	-\$2.4
Net cash	(\$MM)	\$7.6
Enterprise value	(\$MM)	\$23.6



### Management Team

Glenn Leroux, P.Eng President & CEO, Director

Cam Deller, B. Comm, CFA Chief Financial Officer

Anshul Vishal, P. Eng, MBA Vice President, Corporate Development

Alasdair Knox, P. Eng, PMP, MBA Vice President, Project Engineering

#### **Board of Directors**

Lowell Jackson, P. Eng | Chairman Previously CEO and President of WestFire Energy Ltd. and Real Resources Inc.

**Rick Williams, B.A., LLB** *President of Blackwell Investor Relations and Waseco Resources* 

Rod Sousa, B. Comm., CFA Executive Vice-President, Corporate Development Planning at Paramount Resources Ltd.

Todd Garman, B. Comm., MBA President at Iron Horse Energy Services

John Assman President & CEO of Landtran Systems Inc.



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# Summary

Significant Solar Glass Demand Growth	Unprecedented growth in solar panel manufacturing of >500% is expected to drive North     American solar glass demand over the next decade
	Patterned solar glass is a critical component of solar panel manufacturing
Large North American Market	Currently, there are no other North American alternatives for patterned solar glass
	Alleviates logistical challenges and dependence on Asia Pacific glass producers
Strategically Located and Fully-Integrated	The facility will utilize renewable hydroelectricity and is ideally situated for North American rail and trucking
	<ul> <li>Wholly owned quarry with 50+ years of low-iron silica supply in close proximity to the Company's solar glass facility</li> </ul>
Low Carbon Intensity	<ul> <li>Expected to be &gt;50% lower in carbon intensity relative to current Asian supply due to the use of renewable hydroelectricity, integrated silica sand supply and close proximity to customers</li> </ul>
	Significantly lower supply chain carbon footprint relative to offshore manufacturers
Positive Community Impact	Expected to create 600 jobs during the 24-month construction and commissioning period
	Once operational, >300 full-time employment opportunities in surrounding communities
Strong FEED Study Economics	<ul> <li>Attractive project IRR over 25% and NPV10 of +\$800 million for Phase 1 (based on current glass pricing)</li> </ul>
	<ul> <li>Internally funded Phase 2 improves IRR to over 30% and NPV10 to +\$1,500 million by leveraging investment in common infrastructure</li> </ul>
Experienced Management Team	<ul> <li>Decades of experience in a variety of fields (startup management, operation optimization, capital markets, project management, engineering and silica sand exploitation)</li> </ul>
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## Disclaimer

#### General

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#### **Technical Disclosure**

Technical information contained in this Presentation that relate to the silica sand resource has been extracted or summarized based on the information contained in the independent Technical Report and Mineral Resource update of Wanipigow Sand Quarry dated October 14, 2021, reviewed and approved by Roy Eccles, P. Geol. of APEX Geoscience Ltd., who is independent of the Company and a "qualified person" under National Instrument 43-101 - *Standards of Disclosure for Mineral Projects*. Readers are cautioned not to solely rely on the summary of this information but should read the Technical Report in its entirety which is available for review on the Company's profile on SEDAR at www.sedar.com.

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A number of factors, risks and uncertainties could cause results to differ materially from those anticipated and described herein including, among others: the effects of competition and pricing pressures; effects of fluctuations in the price of glass products and raw materials input costs; risks related to indebtedness and liquidity, including the Company's capital requirements; supply chain risks; risks related to interest rate fluctuations and foreign exchange rate fluctuations; changes in general economic, financial, market and business conditions in the markets in which the Company operates; the Company's ability to obtain, maintain and renew required permits, licenses and approvals from regulatory authorities; the stringent requirements of and potential changes to applicable legislation, regulations and standards; the ability of the Company to comply with unexpected costs of government regulations; liabilities resulting from the Company's operations; the results of litigation or regulatory proceedings that may be brought against the Company; uninsured and underinsured losses; risks related to the transportation of the Company's products, including potential rail line interruptions or a reduction in rail car availability; the geographic and customer concentration of the Company; the ability of the Company to retain and attract qualified management and staff in the markets in which the Company operates: labor disputes and work stoppages and risks related to employee health and safety: general risks associated with the glass manufacturing and sand quarry industries, loss of markets, consumer and business spending and borrowing trends; limited, unfavorable, or a lack of access to capital markets; uncertainties inherent in estimating quantities of products; processing problems; the use and suitability of the Company's accounting estimates and judgments; and the other risk factors outlined in CPS's most recent Management's Discussion and Analysis which is available on SEDAR at www.sedar.com. Although the Company has attempted to identify important factors that cause actual actions, events or results to differ materially from those described in its forward-looking statements, there may be other factors that cause actual actions, events or results not to be as anticipated, estimated or intended. There can be no assurance that forward-looking statements will materialize or prove to be accurate, as actual results and future events could differ materially from those anticipated in such statements. The forward-looking statements contained in this Presentation are expressly qualified by this cautionary statement. Readers should not place undue reliance on forward-looking statements. These statements speak only as of the date of this Presentation. Except as may be required by law, the Company expressly disclaims any intention or obligation to revise or update any forward-looking statements or information whether as a result of new information, future events or otherwise. Any financial outlook and future-oriented financial information contained in this Presentation regarding prospective financial performance, financial position, cash flows, EBITDA or net debt projections are based on assumptions about future events, including economic conditions and proposed courses of action based on management's assessment of the relevant information that is currently available. Projected operational information contains forward-looking information and is based on a number of material assumptions and factors, as are set out above. These projections may also be considered to contain future oriented financial information or a financial outlook. The actual results of the Company's operations for any period will likely vary from the amounts set forth in these projections and such variations may be material. Actual results will vary from projected results. Readers are cautioned that any such financial outlook and futureoriented financial information contained herein should not be used for purposes other than those for which it is disclosed herein. The forward-looking information and statements contained in this document speak only as of the date hereof and the Company does not assume any obligation to publicly update or revise them to reflect new events or circumstances, except as may be required pursuant to applicable laws



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#### Currency

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#### Internal Financial Modeling

Certain information contained in this Presentation including the information presented on slides 4 and 13 is derived from internal financial modeling based on: capital and operating cost details from the FEED study; current solar glass price data from Singapore Solar Exchange and PV InfoLink; and logistics quotes for delivery costs of solar glass to North American locations. Implicit in forward-looking information in respect of the EBTIDA projections contained in this Presentation are certain current assumptions, including, among others, that the Company will continue to execute on its strategy of developing manufacturing capacity for solar glass, attracting customers and end-users, realize operational efficiencies from its integrated sand quarry, and extract procurement and cost synergies on time and on budget. Additional assumptions including for the construction of the facility will be obtained, the project will receive final investment decision approval from the CPS board and the ultimate construction of the facility will proceed as scheduled and on budget, markets for solar glass and access to end markets. See also "Forward Looking Information" above.