
Clean Climate
Technologies Inc.
CERTIFIED
Aboriginal Business
Canadian Council for
Aboriginal Business

Charlotte Connor, BGS

Clean Climate Technologies – President
charlotte@cleanclimatetech.ca
Ph: 604-240-7061

Clean Climate Technologies Inc.

Charlotte Connor is a Clean Technology Entrepreneur with extensive experience leading global technology companies. She has developed a deep understanding of innovative energy solutions and market needs. As an advocate for decarbonization at both Federal and Provincial levels, Charlotte is committed to driving policy changes that support sustainable energy systems.

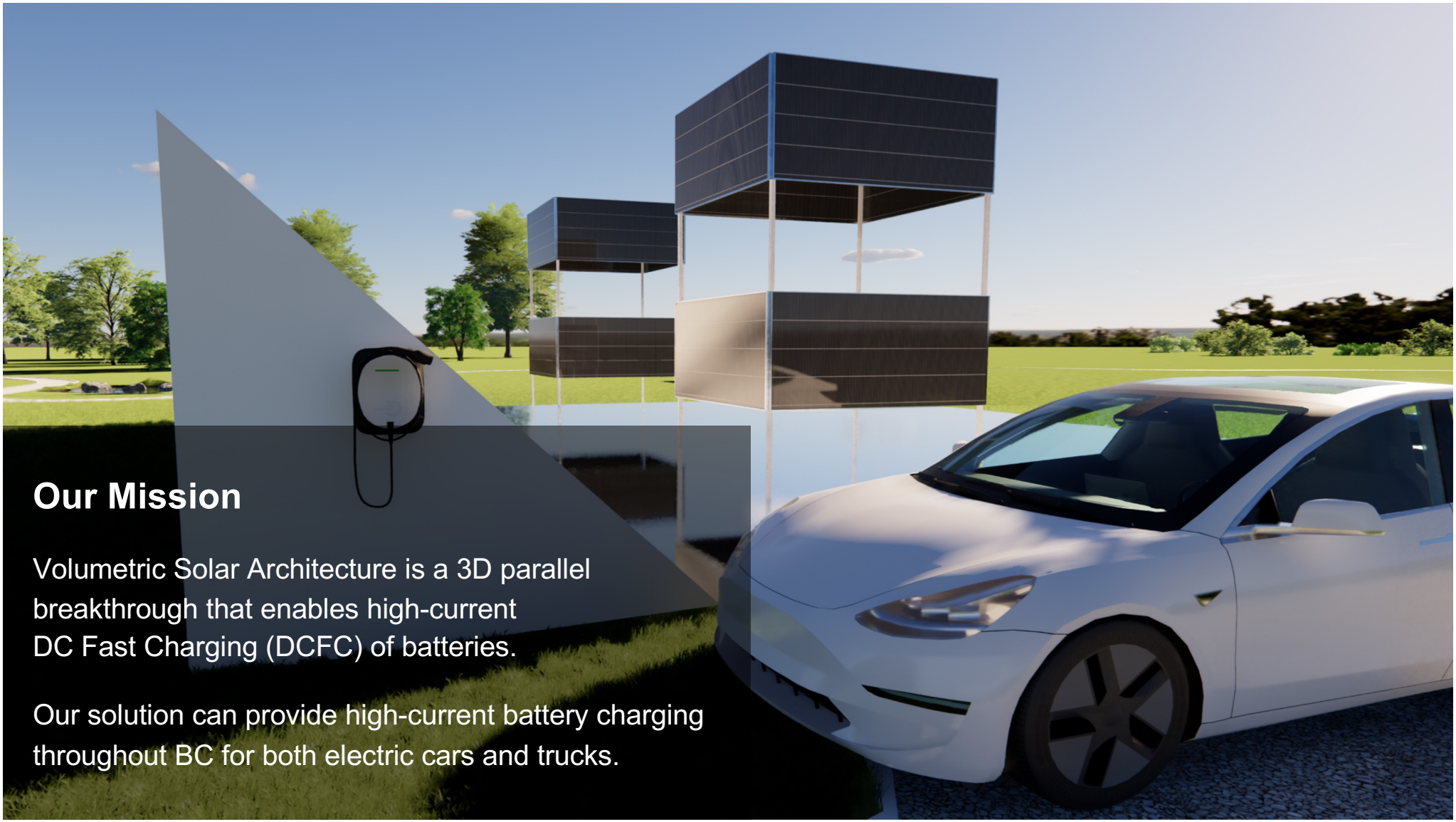
Additionally, as an Indigenous leader, Charlotte actively champions economic development opportunities for First Nations and Indigenous communities, including implementing solar towers and battery storage systems to deliver reliable, off-grid, and grid-connectable energy solutions.

https://www.linkedin.com/in/charlotte-connor-59862a1/

Volumetric Solar

BC Truck Charging Network

volumetric.solar



Our Mission

Volumetric Solar Architecture is a 3D parallel breakthrough that enables high-current DC Fast Charging (DCFC) of batteries.

Our solution can provide high-current battery charging throughout BC for both electric cars and trucks.

Mission Lead: Electrical Engineering and IP

Volumetric Solar

Utility Patent Applications

- SYSTEMS AND METHODS FOR SOLAR POWER AND VOLTAGE DENSITY

Industrial Design Patent Applications

- BIFACIAL SOLAR PANEL ARRAY WITH MIRROR SHEETS
- SOLAR PANEL BIFACIAL MIRROR REFLECTORS
- SOLAR PANEL BIFACIAL TOWER SPACED
- SOLAR PANEL BIFACIAL TOWER
- SOLAR PANEL BIFACIAL CUBE

Copyrights and DC Circuit Designs

- VOLUMETRIC SOLAR ARCHITECTURE AND ENGINEERING

Aleks Milojkovic, P.Eng
Professional Electrical Engineer
Volumetric Solar CEO

amvantage
Microgrid EPC

Project Partners

Volumetric Solar

Adam Gant
Finance and Real Estate

REAfe Advisory

Charlotte Connor
Indigenous Economic Development

Clean Climate Technologies Inc.

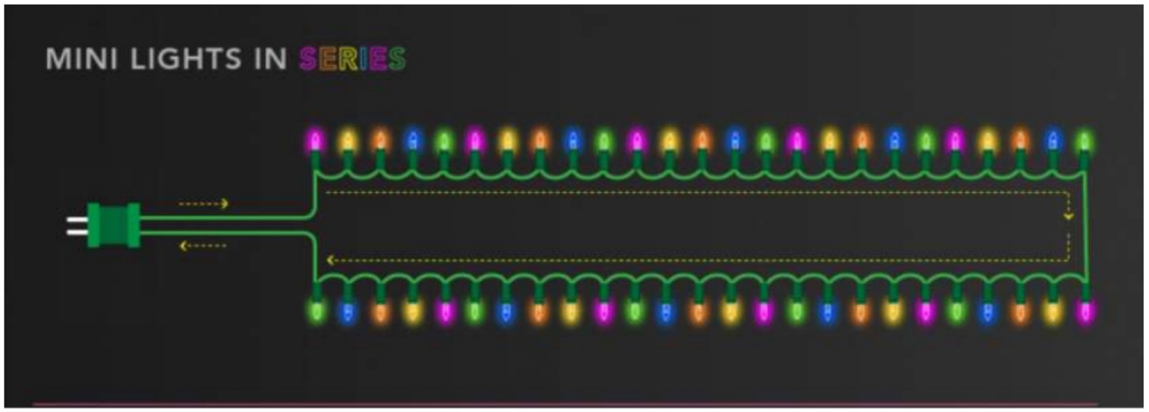
Jeff Lew
ECUBE CEO

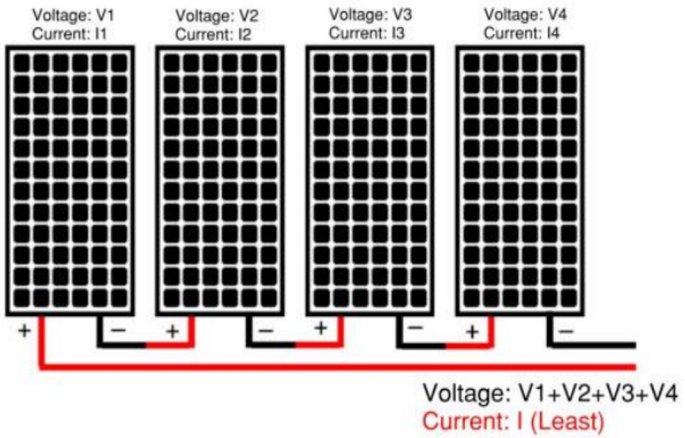
EQUBE POWER

We have assembled a world class team of finance, community and technology support partners.

Fundamental problem with Solar? **Series Wiring**

Volumetric Solar





Series wiring is always single point of failure

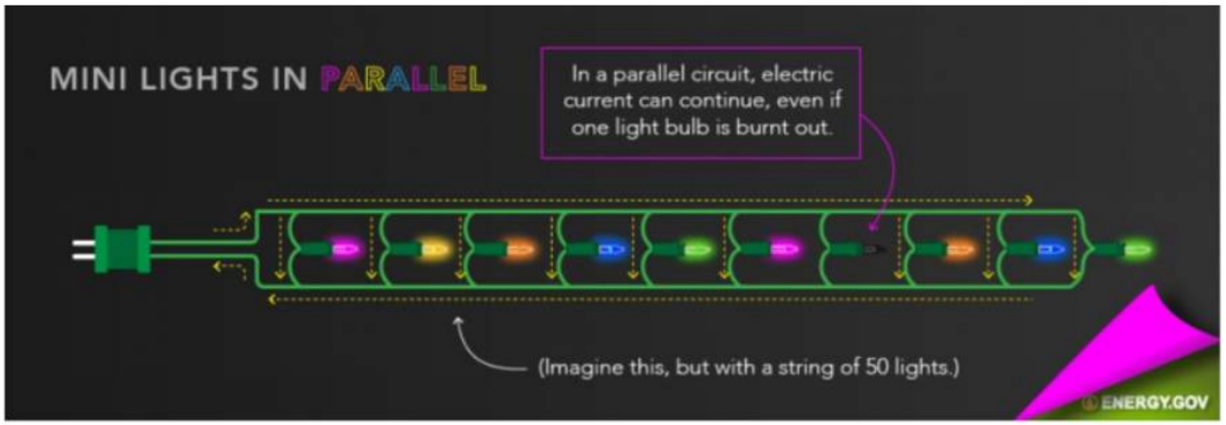
Series wiring results in minimum string current.

Series wiring limits all installations to flat 2D.

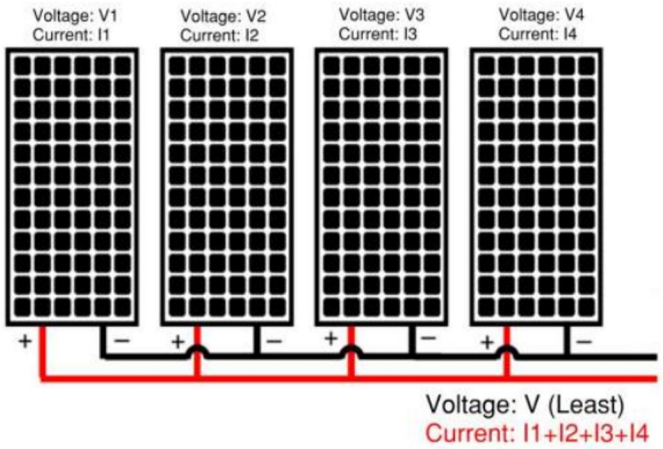
Series losing out on individual reflection gains.

Fundamental solution for Solar? **Parallel Wiring**

Volumetric Solar



Parallel wiring <u>adds all currents together automatically</u>.



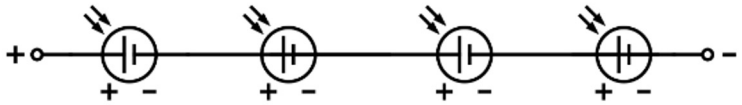
Parallel wiring is <u>more reliable than series wiring.</u>

Volumetric Solar: Generates High Current for Charging

Volumetric Solar

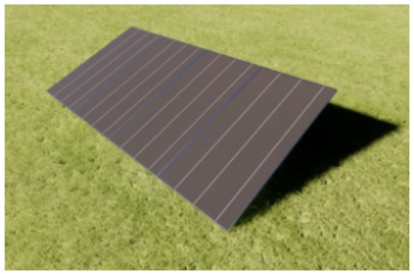
Power
=
DC Voltage
x
DC Current

Solar Panels Wired in DC Series

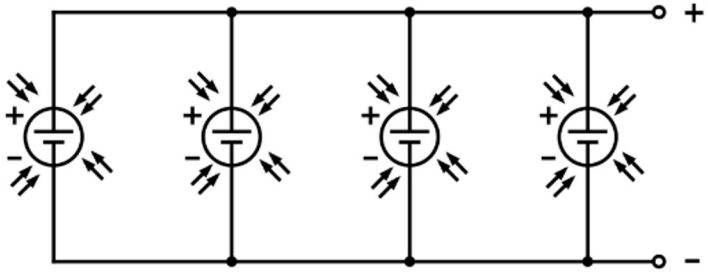


Maximum Voltage
Minimum Current

Solar Architecture 2D

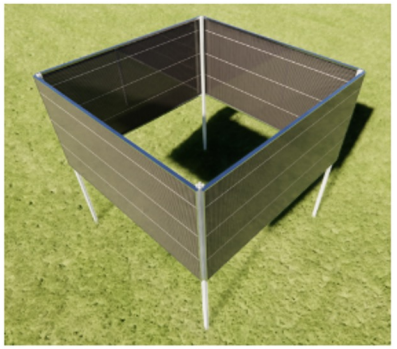


Volumetric Solar Architecture Wired in DC Parallel



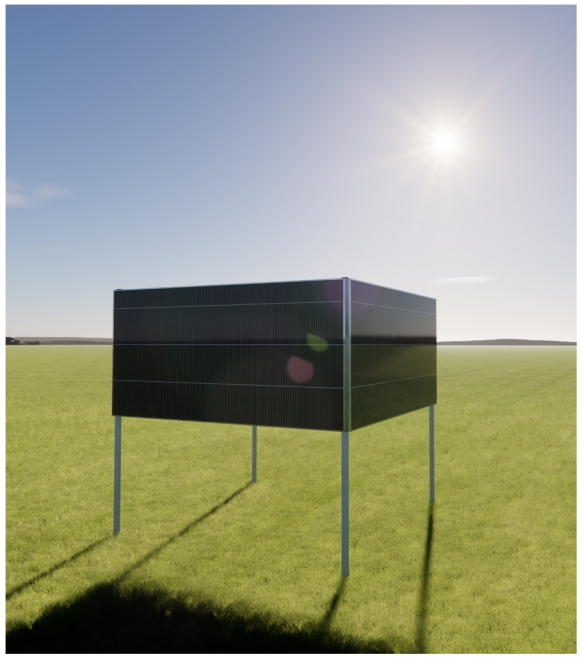
Maximum Current
Minimum Voltage

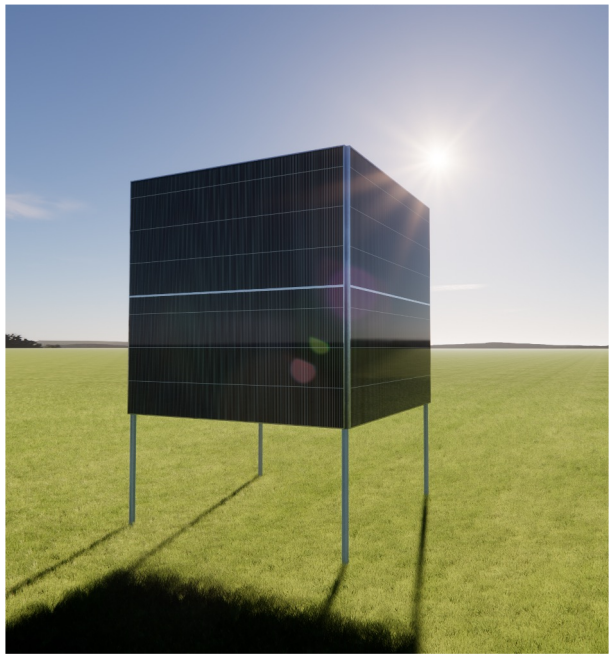
Volumetric Solar Architecture 3D

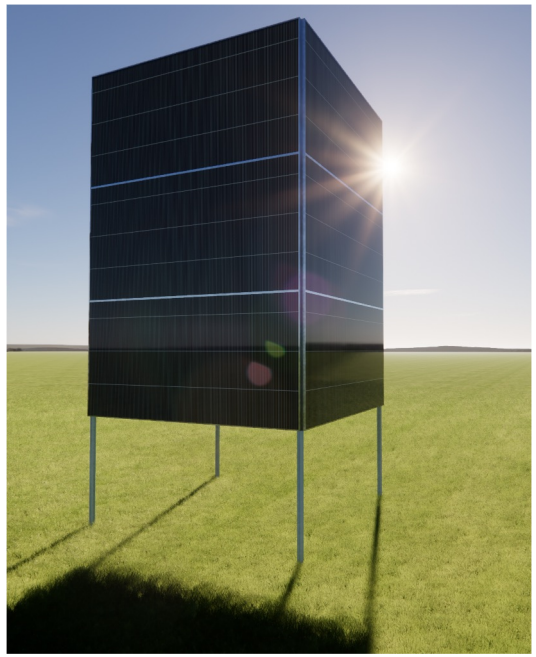


Volumetric Solar: Stackable Higher Current Density

Volumetric Solar







Higher 3D Solar Current Density

4x1

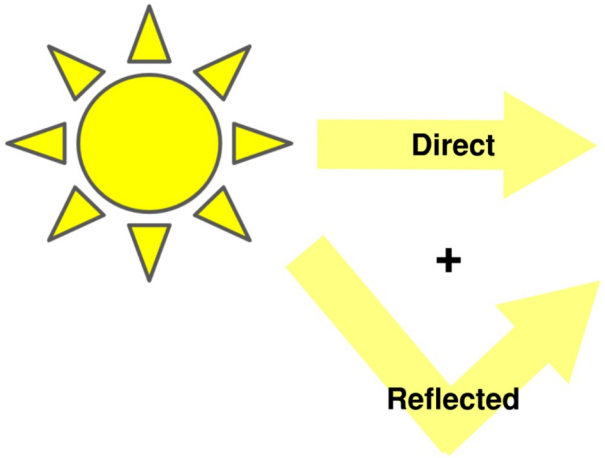
4x2

4x3

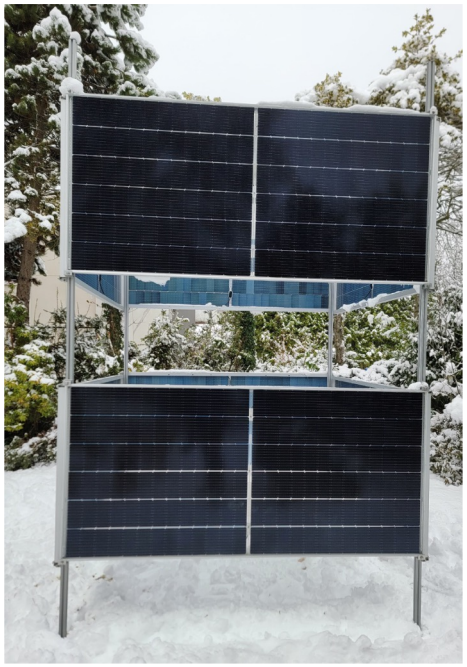
Minimum 2D Land Area

Volumetric Solar: Reflected Sunlight for More Current

Volumetric Solar

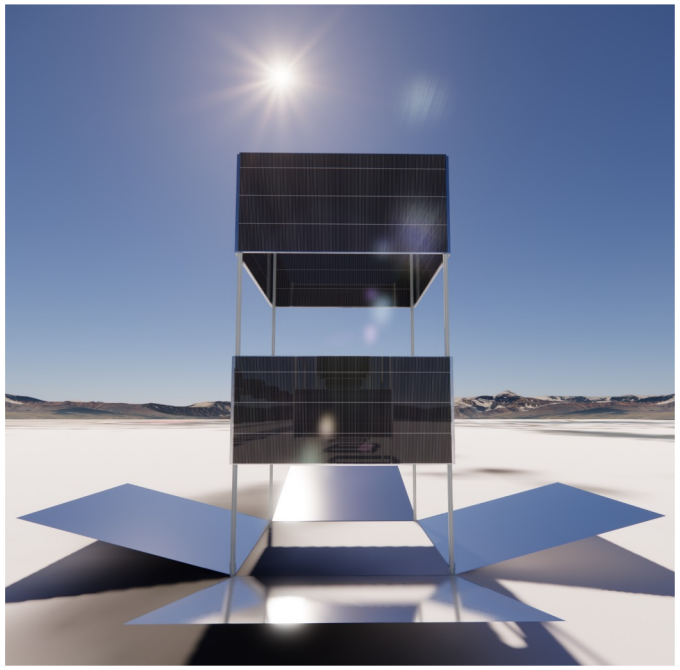


Albedo is the fraction of sunlight that is reflected by any surface.
It is measured on a scale from 0 to 1.



Sheds snow in winter

+



Reflection boost in all seasons

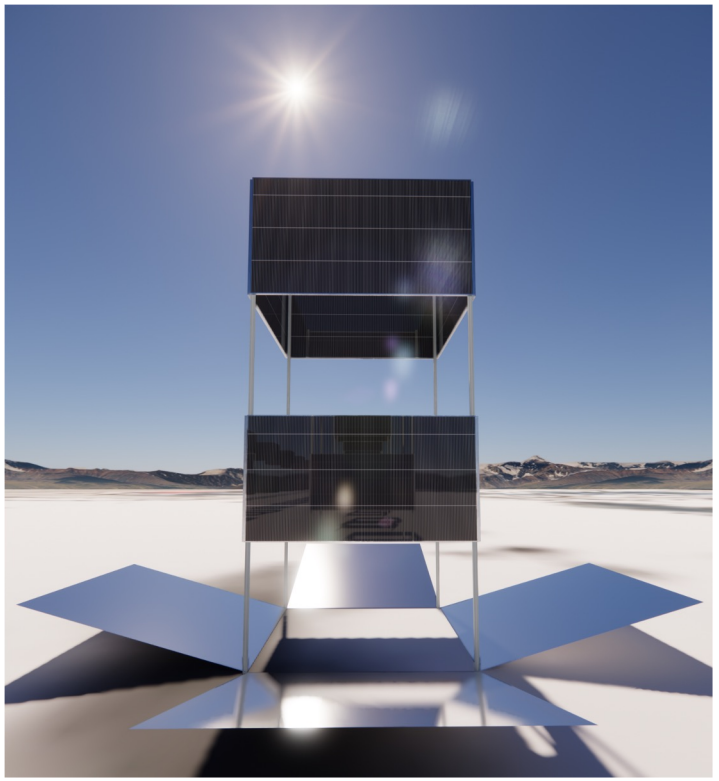
Volumetric Solar: Unique 3D Parallel Improvements

Volumetric Solar

Flat Series Arrays

Concentrated Solar Tower

- Bifacial Panels
- Vertical Cubes
- Parallel Wiring
- Reflection Boost
- Minimum Land

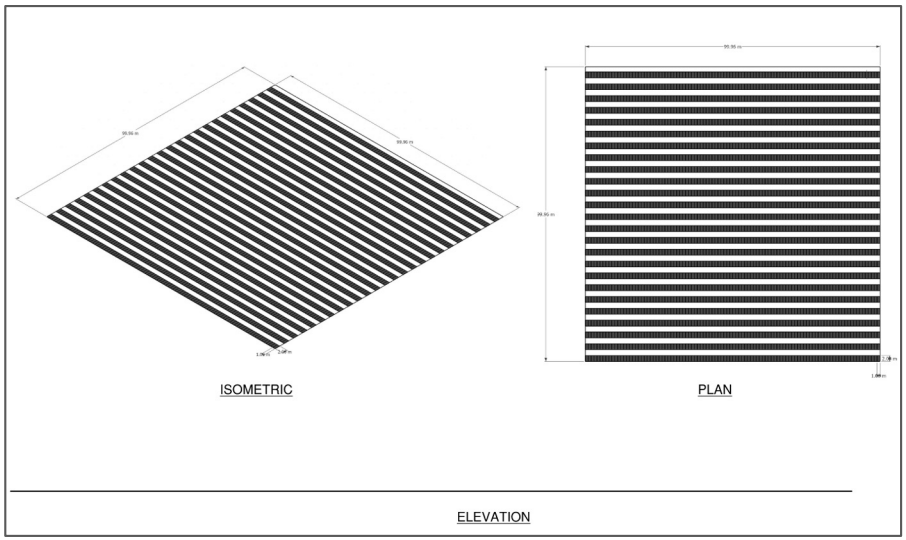


Volumetric Solar
3D Parallel + Reflection

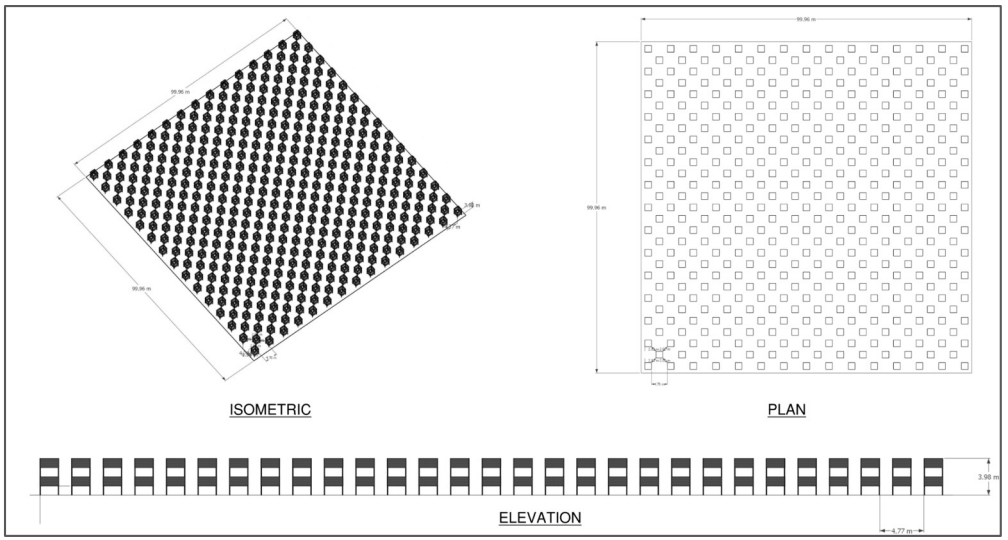
Solar Power Density

Volumetric Solar: Higher Power Density With Less Land

Volumetric Solar



1 Hectare: Flat Series Array
2500 Monofacial Panels



1 Hectare: Volumetric Solar 4x2
3368 Bifacial Panels

2D Solar Farm → Higher Power Density → **3D Solar Forest**

Global Need: DC Fast Charging (DCFC) for Vehicles

Volumetric Solar

EV infrastructure build-out driven by global decarbonization and electrification push

CO_2	Transportation: a major emission source	›	Transportation is accounting for **27%-29% of total greenhouse gas emissions**[1]
	Increased regulation globally	›	**Societal push towards emission targets accelerating shift to EVs**
	Lower cost through better technology	›	Strong improvements in battery technology and EV infrastructure **increasing EVs competitiveness vs. ICEs in terms of total cost of ownership**
	Rising demand for EVs	›	**~130 mn new EVs** expected from 2021E to 2030E[2]
$	Significant EV infrastructure investments	›	**~$590 bn** investment **in EV charging infrastructure** by 2040E required to meet global emissions targets[3]

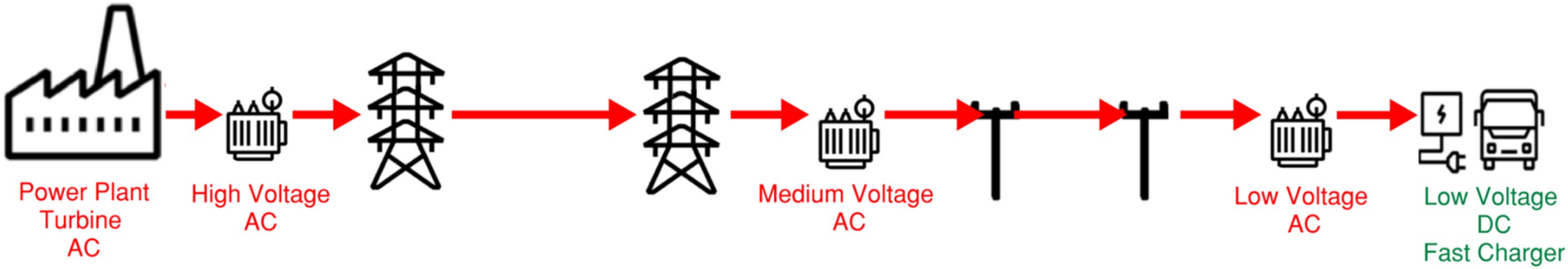
Source: BloombergNEF, Roland Berger

Note:

1. Based on the United States and Europe (Roland Berger assessment)
2. Vehicle types scope: scope includes light vehicles, trucks, and buses (PHEV for light vehicles); geographic scope: scope includes 18 ABB E-mobility core countries (Belgium, Canada, China, Denmark, Finland, France, Germany, Italy, India, Japan, Luxembourg, Netherlands, Norway, Singapore, Spain, Sweden, UK, USA)
3. Includes investment into hardware and installation (BloombergNEF economic transition scenario)

Global Problem: AC Grid Limits and Delays for DCFC

Volumetric Solar



The AC utility grid capacity cannot keep up with increasing DCFC power demand.

World wide AC transformer supply shortage.

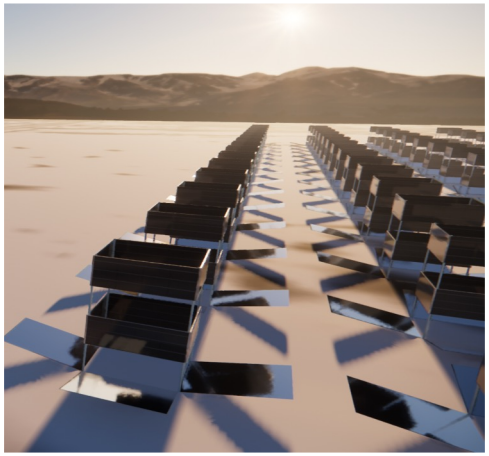
Utility AC upgrades are expensive and slow.

Our Solution: Volumetric Solar Charging for Trucks

Volumetric Solar

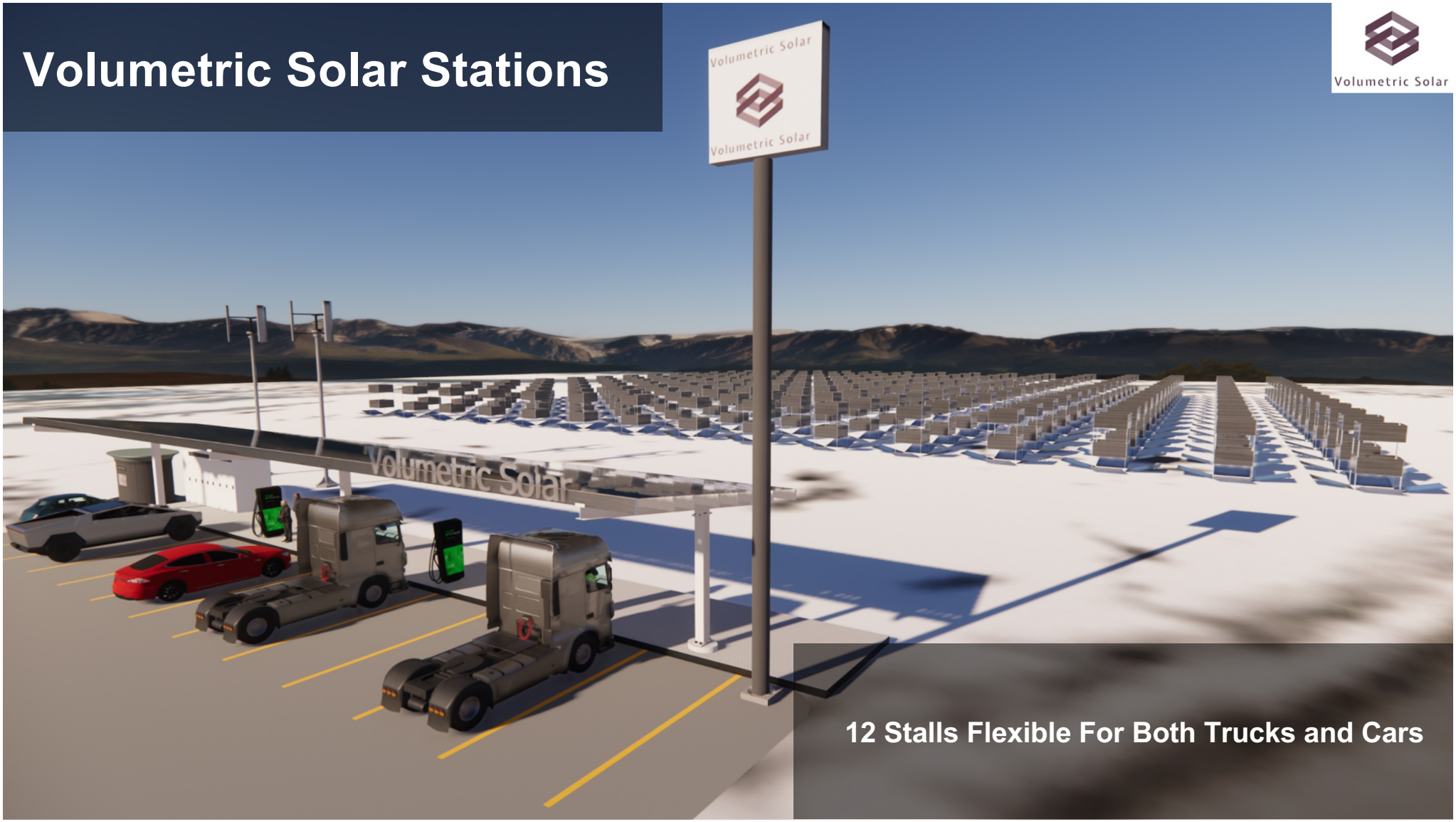
Customers:
Electric Trucks
Ultra Charging
400-800+ kW

Volumetric Solar DC High-Current Battery Charging



Ultra Chargers With Integrated Batteries and AC Grid Backup

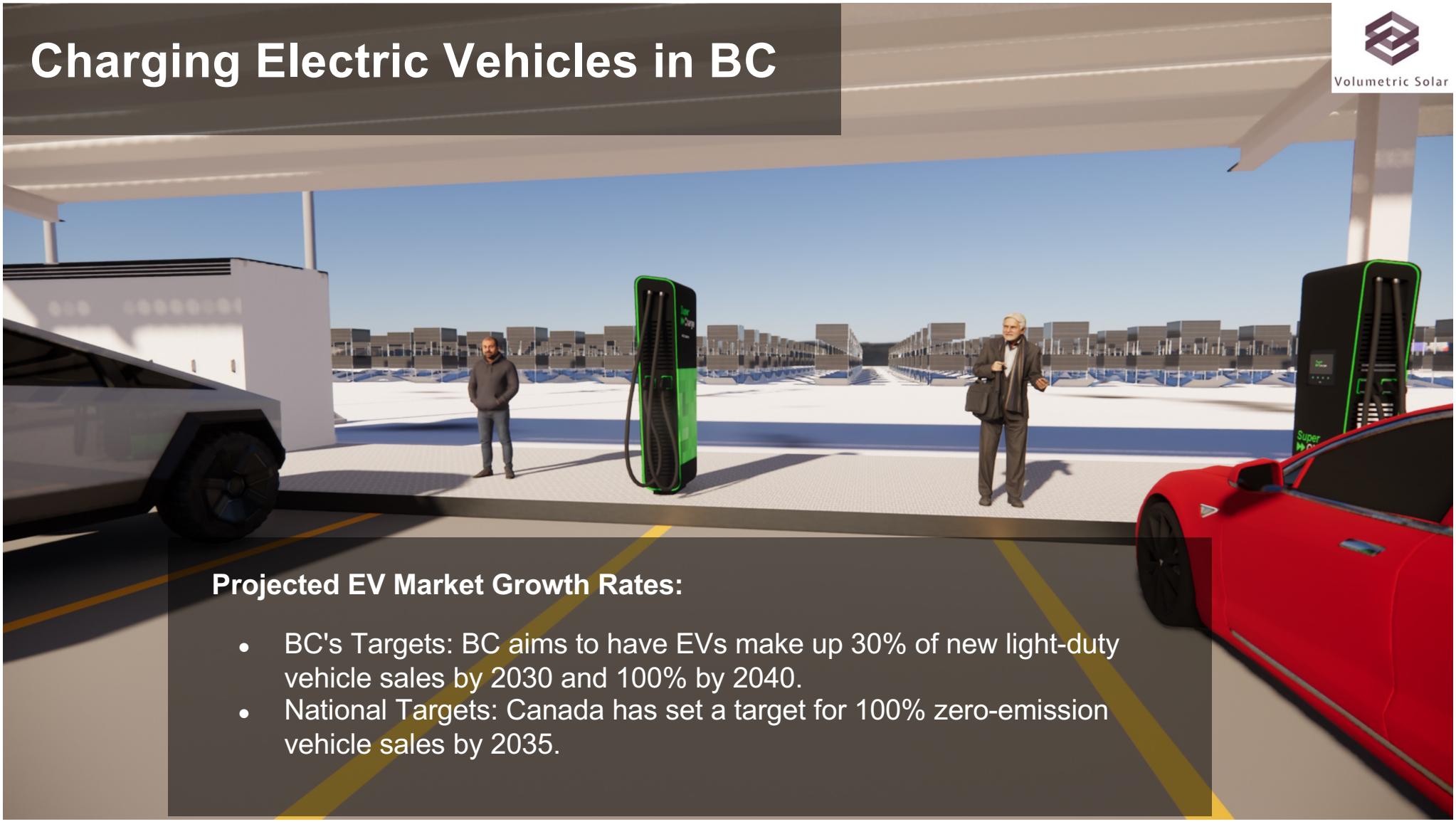
Volumetric Solar Stations



12 Stalls Flexible For Both Trucks and Cars

Charging Electric Vehicles in BC

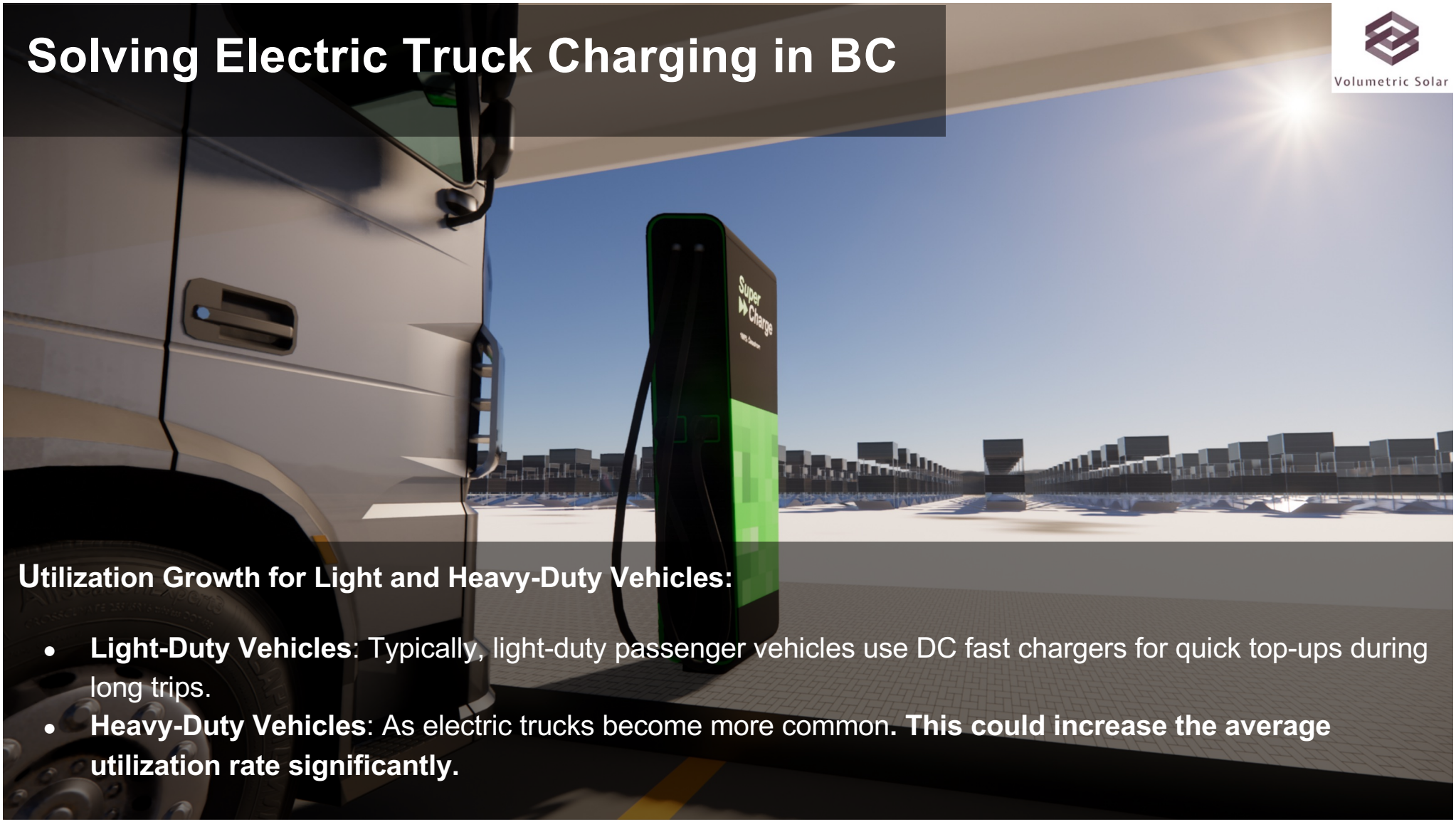
Volumetric Solar



Projected EV Market Growth Rates:

- BC's Targets: BC aims to have EVs make up 30% of new light-duty vehicle sales by 2030 and 100% by 2040.
- National Targets: Canada has set a target for 100% zero-emission vehicle sales by 2035.

Solving Electric Truck Charging in BC

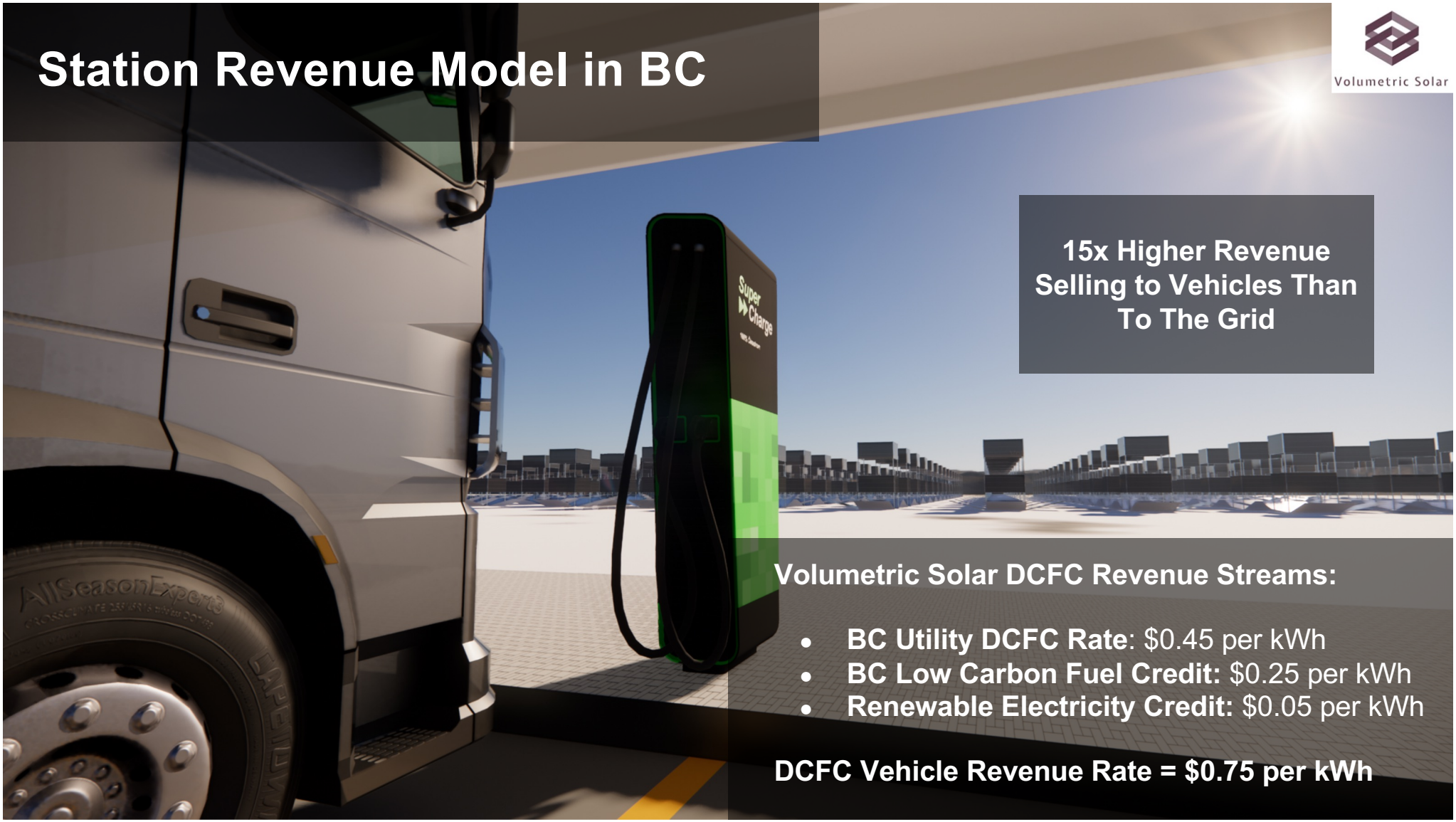


Volumetric Solar

Utilization Growth for Light and Heavy-Duty Vehicles:

- **Light-Duty Vehicles**: Typically, light-duty passenger vehicles use DC fast chargers for quick top-ups during long trips.
- **Heavy-Duty Vehicles**: As electric trucks become more common**. This could increase the average utilization rate significantly.**

Station Revenue Model in BC



Volumetric Solar

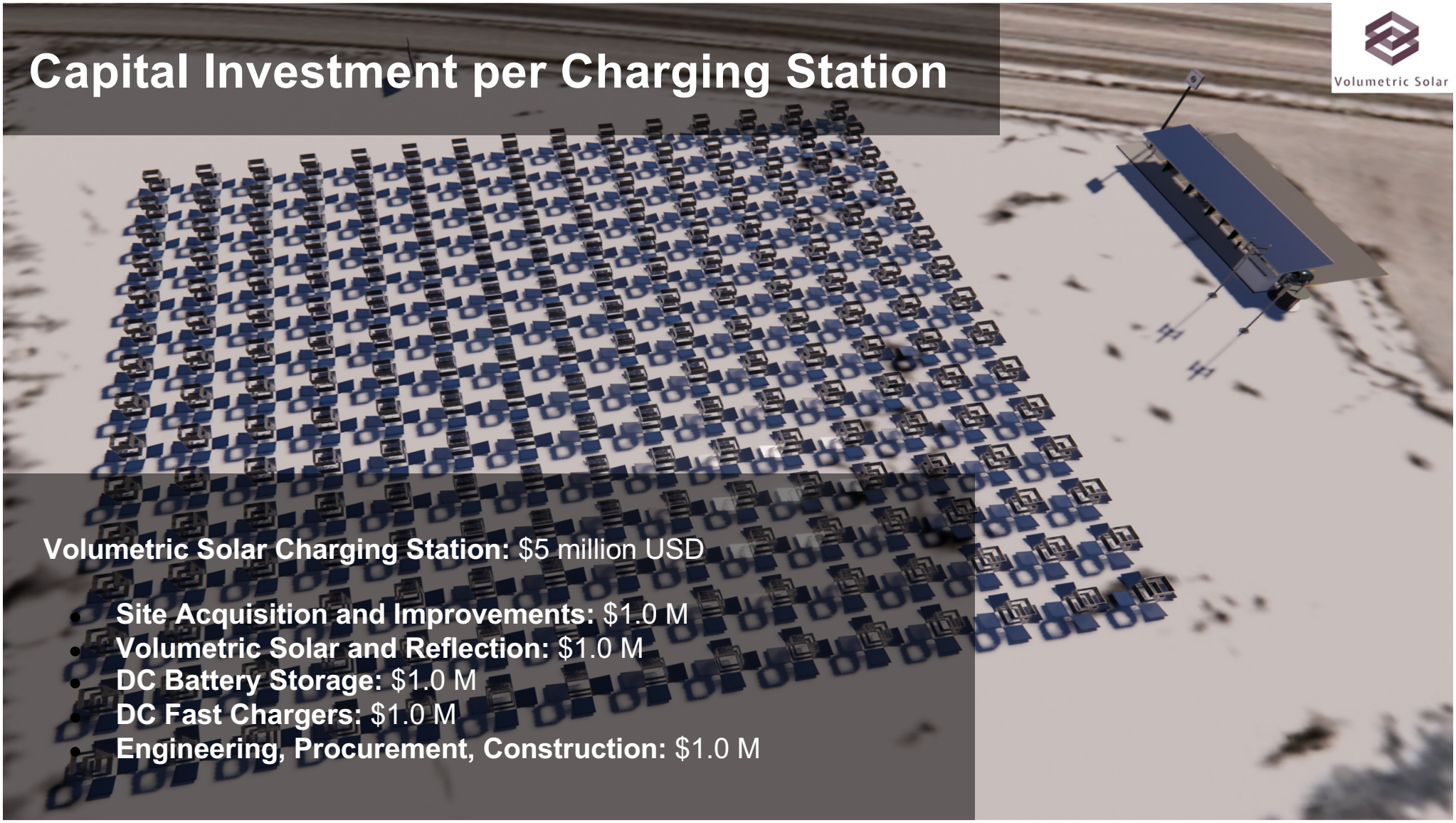
15x Higher Revenue Selling to Vehicles Than To The Grid

Volumetric Solar DCFC Revenue Streams:

- **BC Utility DCFC Rate**: $0.45 per kWh
- **BC Low Carbon Fuel Credit:** $0.25 per kWh
- **Renewable Electricity Credit:** $0.05 per kWh

DCFC Vehicle Revenue Rate = $0.75 per kWh

Capital Investment per Charging Station

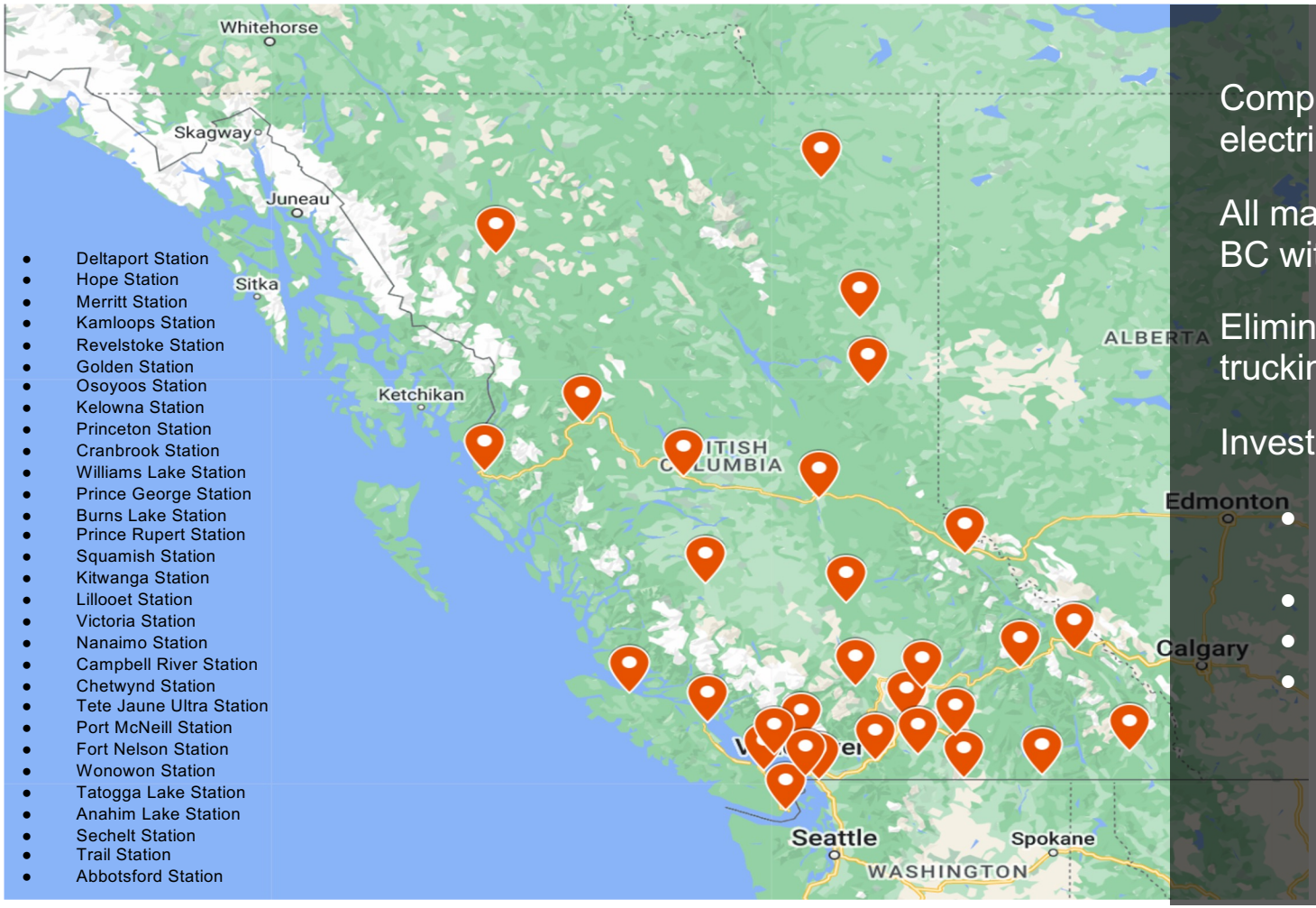


Volumetric Solar Charging Station: $5 million USD

- **Site Acquisition and Improvements:** $1.0 M
- **Volumetric Solar and Reflection:** $1.0 M
- **DC Battery Storage:** $1.0 M
- **DC Fast Chargers:** $1.0 M
- **Engineering, Procurement, Construction:** $1.0 M

Volumetric Solar: BC Provincial Network

Volumetric Solar



- Deltaport Station
- Hope Station
- Merritt Station
- Kamloops Station
- Revelstoke Station
- Golden Station
- Osoyoos Station
- Kelowna Station
- Princeton Station
- Cranbrook Station
- Williams Lake Station
- Prince George Station
- Burns Lake Station
- Prince Rupert Station
- Squamish Station
- Kitwanga Station
- Lillooet Station
- Victoria Station
- Nanaimo Station
- Campbell River Station
- Chetwynd Station
- Tete Jaune Ultra Station
- Port McNeill Station
- Fort Nelson Station
- Wonowon Station
- Tatogga Lake Station
- Anahim Lake Station
- Sechelt Station
- Trail Station
- Abbotsford Station

Complete BC station network for electric truck charging.

All major ports and highways in BC with ~250 km spacing.

Eliminate range anxiety for electric trucking fleets.

Investment Summary:

- Capital Budget Per Station: $5M USD
- Quantity of Stations: 30
- Total Capital: $150M USD
- Investor Returns: Negotiable Debt and/or Equity

Solar + Storage + Charging: Government Incentives

Volumetric Solar

Business Tax Credits: Federal

Government Program	Source	Amount
Investment Tax Credit	Federal	30%
Accelerated capital cost allowance (CCA)	Federal	75%

Federal tax credits enable your business to expense the full cost of this proposal for bottom-line tax benefits.

Business Revenues: Low Carbon Fuel Credits

Credit	Source	Revenue	Cost
Volumetric Solar: Electric Vehicle Charging per kWh	Renewable and Low Carbon Fuels	$0.25	$0
BC Hydro: Electric Vehicle Charging per kWh	Renewable and Low Carbon Fuels	$0.25	$0.12
Volumetric Solar Renewable Electricity Credits per kWh	REC Market Price	$0.05	$0

BC fuel credits enable your business to generate fuel credits which can be sold for return on investment revenues.

BC Provincial: No PST (7%) on Solar Equipment and Cabling

Business Rebates: BC Hydro

Government Program	Source	Amount
Solar Power Rebate	BC Hydro	$25,000-75,000
Battery Storage Rebate	BC Hydro	$25,000-75,000
Electric Vehicle Chargers: Workplace	BC Hydro	$14,000
Electric Vehicle Ready Fleet: Professional Planning	BC Hydro	$10,000
Commercial Energy Storage Incentive	BC Hydro	$10,000 per kW (80%-100%)

BC Hydro rebates enable your business to offset the purchase price of this proposal for post-project cash back.

Station scope is aligned to maximize all available government and utility incentives for maximum investor ROI.

BC Hydro Commercial Storage incentive program will pay for 80-100% of battery costs for demand response.

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