

## **ORENgE Printed Semiconductors**

Low-cost flexible printed semiconductors for zero carbon energy source

# ORENge

## **Executive Summary**

Introduction	<ul> <li>Delivers ultra-low cost, flexible, transparent, and recyclable semiconductor for photovoltaic applications using proprietary roll-to-roll printing process</li> <li>Our clean and sustainable semiconductor manufacture process results in the lowest carbon footprint energy source in the market</li> <li>ORENgE designs applications with its semiconductors delivering plug-and-play solutions for multiple markets including real estate, transportation and consumer products</li> </ul>
Disruptive Value Proposition	<ul> <li>ORENgE printed semiconductor offers to the market a better alternative for the client's onsite energy needs; kwh savings, and carbon footprint reduction</li> <li>Advantages include seamless integration, lower cost of effective energy, transparency, flexibility, low light capabilities, and infrared light absorption</li> <li>ORENgE printed semiconductor is safer, fully recyclable, highly efficient, durable and opens untapped markets for zero carbon photovoltaic power and energy savings</li> </ul>
Recent Milestones	<ul> <li>In 2023, ORENgE printed semiconductor has significantly advanced their commercial rollout progress</li> <li>Completed ORENgE system installation for the General Services Administration ("GSA") in their Washington, DC headquarters; subsequently have received numerous RFPs from other federal government agencies</li> <li>Installation for Brookfield and executed a Master Agreement for additional product deployment</li> <li>Completed ORENgE transportation installation for 300+ PepsiCo fleet trucks</li> <li>Additional client installs includes Cisco, ASHRAE, AT&amp;T, Ford, PLM and Thermoking</li> <li>Robust pipeline for 2024 with 10+ large commercial installations to be conducted in the next few months</li> <li>Further improved underlying performance specifications of the ORENgE semiconductors in 157% including outdoor and indoor applications</li> <li>Completed design and production rollout for ORENgE motorized shade for Q1'24 delivery with Mecho Electroshade</li> </ul>
Capital Raise	<ul> <li>The company is seeking to raise up to \$12.8MM for in growth-oriented capital to scale the platform to fulfill existing customer orders, meet expanding market demand, and fund corporate operations</li> <li>The Company welcomes creative financing solutions and anticipates subsequent investment opportunities in the short and medium term to drive GO-OPV's scaling and commercialization objectives</li> </ul>

[Confidential]



## Printing semiconductors for zero carbon energy transition

ORENgE delivers the most sophisticated ultra-low cost, flexible, transparent, and recyclable semiconductor for photovoltaic zero carbon solutions



### Introduction

- Delivers ultra-low cost, flexible, transparent, and recyclable semiconductor for photovoltaic applications using proprietary roll-to-roll printing process
- Our clean and sustainable semiconductor manufacture process results in the lowest carbon footprint energy source in the market
- ORENgE designs applications with its semiconductors delivering plug-and-play solutions for multiple markets including real estate, transportation and consumer products



### **Market Problem**

- Silicon semiconductors for photovoltaic presents considerable application limitations restricting consumer use for utility scale solar farms and residential rooftops
- Silicon semiconductor manufacture uses and produces acids, toxic metals and tremendous amounts of water. Harmful metals include arsenic, cadmium telluride, gallium arsenide, hexafluoroethane, hydrofluoric acid, lead, and polyvinyl fluoride, putting frontline workers and communities at risk when manufacturing and decommissioning solar installs



## **ORENgE Solution**

- ORENgE printed semiconductor offers to the market a better alternative for the client's onsite energy needs; kwh savings, and carbon footprint reduction
- Advantages include seamless integration, lower cost of effective energy, transparency, flexibility, low light capabilities, and infrared light absorption
- ORENgE printed semiconductor is safer, fully recyclable, highly efficient, durable and opens untapped markets for zero carbon photovoltaic power and energy savings



## Product portfolio covering multiple addressable markets

ORENgE developed three lines of products to cover multiple industries targeting expansion for the use of its printed semiconductors and application technology



## **1. Printed Semiconductors**

- Energy source material used in the production of application products
- ORENgE offers today two types of fullerene semiconductors
- Starting 2025 we expect to launch non-fullerenes and perovskite materials for additional efficiency and cost reduction
- Client base includes glass manufacturers, auto makers and consumer products brands



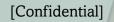
## 2. Indoor Applications

- Automated shades; and low voltage BIPV systems used to power DC equipment networks for lighting, sensors, cameras and lot. Besides energy, printed semiconductor offers heat reduction and glare control for malls, office buildings, and residential; units.
- Products can be sold through distributors, direct sales, and long-term contracts
- Eligible for IRA benefit for 30% ITC and 10% domestic supplier through 2030



## 3. Outdoor Applications

- Trucking/RV energy systems for battery support and operational resilience
- Portable panels for military and off grid product applications
- Medium to large scale Distributed Energy Resources (DERs) for telnet and rooftops
- Client base includes fleet operators, distribution centers, retail companies, large solar distributors, and consumer brands





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**Brookfield** Properties







**Brookfield** Properties







[Confidential]

## **Net Zero Carbon Semi Printed Shades**

First motorized printed semi dual PV shade system with net zero power and heat gain reduction







## **ORENgE General Services Administration Rollout**

Additional to Project Indiantown, ORENgE was granted on January 17<sup>th</sup>, 2024, additional installations for the U.S. Department of Transportation





### January 17, 2024

#### Biden-Harris Administration Announces More Than \$104 Million to Advance Net-Zero Projects at Federal Facilities

#### Funding from Bipartisan Infrastructure Law Supports Energy Conservation Measures at 31 Facilities, Saving Taxpayers \$29 Million in the First Year and Drastically Reducing the Federal Carbon Footprint

ARLINGTON, Virginia — As part of the Biden-Harris Administration's Investing in America agenda, the U.S. Department of Energy (DOE) today announced \$104 million for energy conservation and clean energy projects at 31 Federal facilities—the latest step in President Biden's strategy to reestablish the Federal Government as a sustainability leader. The funding announced today, from DOE's Assisting Federal Facilities with Energy Conservation Technologies (AFFECT) program, represents the first of three disbursements from the historic \$250 million in funding for the program in President Biden's Bipartisan Infrastructure Law. AFFECT, established in 1992, helps agencies cut energy consumption—and taxpayers save money—through building electrification, geothermal heat pumps, on-site solar generation, and battery energy storage among other initiatives. The projects announced for funding today align with President Biden's December 2021 Executive Order that calls for a 65% reduction in greenhouse-gas emissions from Federal operations by 2030, 100% zero-emission vehicle acquisitions by 2035, and a net-zero building portfolio by 2045.

### U.S. Department of Transportation

#### U.S. Department of Transportation Headquarters (Washington, D.C.)

This project will implement three energy conservation measures (ECMs) to assist the U.S. Department of Transportation Headquarters (DOT HQ) in achieving LEED platinum status, aligning with sustainability goals and net-zero energy targets. The proposed ECMs include LED light installation, occupancy sensor implementation in low-occupancy areas, and the application of photovoltaic (PV) film on south-facing windows, providing solar electricity generation and shading benefits. These measures aim to reduce energy consumption by 2.8 GWh/year, achieve total savings of 8,679 MMBtu/year, and contribute to the attainment of LEED Platinum certification for DOT HQ, with an estimated annual savings of \$473,030 for the federal government and relatively short payback periods for the initiatives, emphasizing high impacts for low investment.

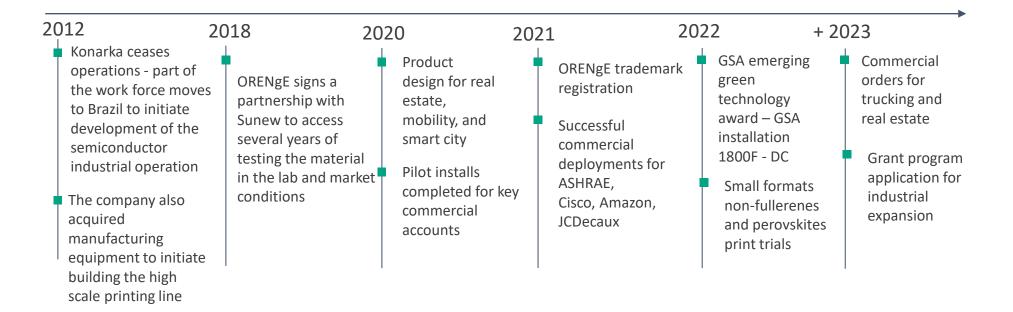


## **ORENgE Competitive Landscape**



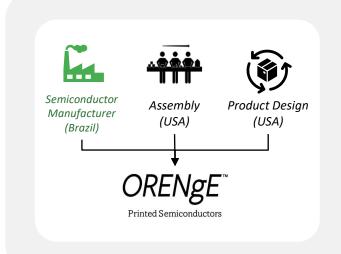
The company positioned itself as the product application market leader focusing on the client especially for real estate and transportation

- ORENgE uses large format roll to roll printing and vertical DC low voltage power structure to deliver end to end solutions to Clients servicing low light and infrared (indoor) and high intensity light (outdoor) applications
- Prior large format semiconductor roll to roll printers Konarka, and Asca have ceased operations. ORENgE has been able to secure IP from both previous printers. Heliatek is a current large format vacuum printer that has not entered the commercial market with over \$400MM invested due to cost. China has no scaled large format printers
- The additional printed semiconductor market is small format printers that have no ability currently to enter the large format print business including Ambient, Dracula, and Ephishine. China has vast capabilities to compete in small format printing and is the primary reason for not entering this market
- ORENgE has a superior advantage on capacity and cost to enter the small format business, although the offset is price compression because of the potential overcrowded marketplace moving forward



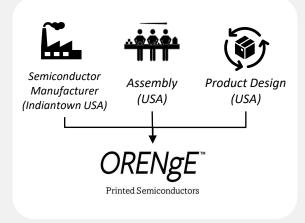


Manufacturing ORENgE low-cost flexible printed semiconductors in the US, will allow the company to establish 100% vertical operation in covering industrial scale manufacturing, product design, and client servicing



### **Business Model 2024 – 2026**

- 1. ORENgE designs the semiconductor films and application technology sourced primarily with US materials
- 2. Exclusive partner in Brazil manufactures the film and sends the printed semiconductor material back to US
- 3. Product assembly is completed in the US
- 4. Final products are sold to distributors, direct, sale or long-term contracts with installation by the Company or third party



### **Business Model 2027 & beyond**

- ORENgE is currently in process to build the first flexible semiconductor print line in the US located in Indiantown (FL). This will provide the company significant cost savings per watt, improved performance and increased scale
- 2. Increased scale will allow ORENgE to launch strategic products such as medium and large-scale Distributed Energy Resources (DER)
- 3. Company can expand its assembly line and commercial structure to accelerate market adoption to increase product sales and long-term contract portfolio





## Financial Projections (Equity Proceeds Allocation)

Total Equity Investment (\*)

\$12,800,000

#### Equity Proceeds Allocation - 2024

Item	Classification	Amount	Notes
Working capital for Product Sale	Products Cash Flow	\$856,152	BIPV and Shades market deployment
ESA Cost of Investment	ESA InfraCo Cash Flow	\$152,554	Investment in equipment for the first ESA Contracts
Assembly Line	CAPEX Assembly	\$300,000	Assembly line in Florida with capacity for over 300.000 panels
Administrative	General and Administrative Expenses	\$199,955	Budget to build the company's operation in the new headquarters
Corporate Payroll	General and Administrative Expenses	\$992,000	Group of 8 executives and staff members responsible for the company's operations
Industrial Payroll	General and Administrative Expenses	\$32,000	Team of 2 assembly staff members
Industrial Expansion	Project Management Indiantown	\$1,100,000	Project buildup for industrial expansion
	TOTAL =	\$3,632,661	

Equity Proceeds Allocation - 2025

Item	Classification	Amount	Notes
Working capital for Product Sale	Products Cash Flow	\$2,532,008	Trucking market deployment and BIP/shades rollout
ESA Cost of Investment	ESA InfraCo Cash Flow	\$757,276	Investment in equipment for additional ESA Contracts
Administrative	General and Administrative Expenses	\$441,572	Budget to expand the company's operation
Corporate Payroll	General and Administrative Expenses	\$2,796,000	Group of 12 executives and staff responsible to expand the company's operations
Industrial Payroll	General and Administrative Expenses	\$768,000	Team of 13 assembly staff members
Industrial Expansion	Project Management Indiantown	\$1,800,000	Project buildup for industrial expansion
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*TOTAL* = \$9,094,855

(\*) Capital for the ESA Take or Pay contracts will be raised as incremental debt under a SPV structure. The company will seek the level based on pre-approved debt lines according to the client's risk profile



Printed Semiconductors

Equity Investment

ESA Financing

Total Investment Opportunity (USD/mm)	\$120.0						
Founders Investment (2018)	\$7.6	Capital invested by the founders, Seed and Series A Inve			ries A Investo	rs	
Equity Investment (2024)	\$12.8	Series B Equity inve	Series B Equity investment for market rollout				
Grant Program (2024)	\$20.0	Subsidized funding for industrial and technology expansion					
ESA Debt (2025 - 2028)	\$79.6	Debt capital funding for 5-year ESA Contracts					
Series B Equity Round (USD/mm)							
Pre-money valuation	\$50.4	Seed Round at \$5m	im // Series A	at \$30mm			
Pos-money valuation	\$83.2	Includes Series B ca	pital + subsid	lized funding			
Investor Equity Stake	20.2%						
ESA Debt Returns 5-year Contracts							
Unlevered Cumulative MOIC	1.67 x						
Levered Cumulative MOIC	4.42 x	Working Capital Facility Cost @ 13%					
Unlevered Cumulative IRR	25.1%						
Levered Cumulative IRR	24.8%	Working Capital Fac	cility Cost @	13%			
Financials (USD/mm)			2024E	2025E	2026E	2027E	2028E
Gross Sales			\$4.8	\$17.6	\$41.4	\$104.8	\$178.1
Gross profit			\$1.3	\$6.0	\$17.3	\$34.1	\$49.6
EBITDA			\$0.1	\$2.0	\$11.0	\$23.8	\$36.7
% Margin		2% 11% 26% 23% 219				21%	

\$0.0

\$0.8

\$0.0

\$4.8

\$0.0

\$32.2

\$0.0

\$41.7

\$12.8

\$0.0

2029E

\$350.6

\$98.6

\$82.7

24%

\$0.0

\$81.5

2030E

\$606.7

\$175.0

\$155.6

26%

\$0.0

\$153.1

2031E

\$1,088.0

\$331.3

\$306.4

28%

\$0.0

\$298.6

2032E

\$1,990.1

\$636.7

\$607.4

31%

\$0.0

\$582.8



Printed Semiconductors

Client:	Notes:	Volume	Commercial Status:	Comments:
HUD	4-panel BIPV system as direct sale (Jul/2024)	\$831,600	Purchase Offer Accepted	Commercial order with Honeywell in final execution phase
ORENgE Shades	2-panel Shade system as direct sale (Jul/2024)	\$1,176,986	Purchase Offer Accepted	Distribution Licensing agreement/press release in execution
DOT	4-panel BIPV system as direct sale (Oct/2024)	\$231,000	Purchase Offer Accepted	Installation contracts under execution
Brookfield (Finalized)	4-panel BIPV system as ESA sale (Jan/2024)	\$52,800	Purchase Offer Accepted	Installation concluded for master take-or-pay contract
	Total =	\$2,292,386		
Accepted Offers Pending	g Funding:			
Client:	Notes:	Volume	Commercial Status:	Comments:
Brookfield (Expansion)	4-panel BIPV system as ESA sale (Jul/2024)	\$132,000	Master contract in place	Pending Finance 5-year capital
ORENgE Shades	2-panel Shade system as direct sale (Ago/2024)	\$2,353,972	Master agreement in place	Pending Finance 5-year capital
	Total =	\$2,485,972		

lient:	Notes:	Volume	Commercial Status:	Comments:
lloomberg	4-panel BIPV system as ESA sale	\$132,000	Pilot install completed	Pending Finance 5-year capital
lines	4-panel BIPV system as ESA sale	\$52,800	First meeting scheduled	Pending Finance 5-year capital
T&T	4-panel BIPV system as ESA sale	\$264,000	Pilot install completed	Pending Finance 5-year capital
lisco	4-panel BIPV system as ESA sale	\$528,000	Pilot install WIP	Pending Finance 5-year capital
ord	4-panel BIPV system as ESA sale	\$2,640,000	Pilot install completed	Pending Finance 5-year capital
epsiCo	4-panel trucking system	\$320,000	Pilot install completed	Pending Finance
M	16-panel trucking system	\$560,000	Pilot install completed	Pending Finance
enasun	Single panel golf cart system	\$175,963	Distribution agreement in place	Pending Finance
dEx	4-panel trucking system	\$480,000	Pilot install completed with Ford	Pending Finance
5	4-panel trucking system	\$320,000	First meeting scheduled	Pending Finance
mas Bus	16-panel trucking system	\$5,600,000	First meeting scheduled	Pending Finance
rmoking	4-panel trucking system	\$1,600,000	Pilot install completed	Pending Finance
azon	4-panel trucking system	\$800,000	Product line sold out	Pending Finance
e Pacific	2-panel Shade system	470,794	Pilot install completed	Pending Finance 5-year capital
ka Outdoors	Single panel mobile system	281,541	Pilot install completed	Pending Finance
і Со-Ор	Single panel mobile system	422,312	Product line development	Pending Finance
non Properties	4-panel BIPV system as ESA sale	\$132,000	First meeting scheduled	Pending Finance 5-year capital
RE	4-panel BIPV system as ESA sale	\$5,280,000	Relantionship secured	Pending Finance 5-year capital
ple	Single panel mobile system	\$1,055,779	Relantionship secured	Pending Finance

Total = \$21,115,190

Total Project Revenue Total Project Cost	\$1,000,000 (600,000)						ORI	ENgE
Project Gross Margin	\$400,000	40.0%					Printed	Semiconductors
Fully Equity Funded ESA Contract							T Tinteu S	eniconductors
Unlevered Cumulative MOIC		1.67x						
Unlevered Cumulative IRR		25.1%						
Working Capital Facility Cost	-							
Working Capital Facility Size	-							
Cash Flow from Operations		Upfront	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Cash Receipts from ESA Contract		-	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$1,000,000
Cash Revenue		-	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	
Cash Flow from Investments								
ESA Material & Service Costs		(\$600,000)	-	-	-	-	-	(\$600,000)
Total Capital Investments		(\$600,000)	-	-	-	-	-	(\$600,000)
Free Cash Flow		(\$600,000)	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	
Aggregate Cash Return		-	\$200,000	\$400,000	\$600,000	\$800,000	\$1,000,000	\$1,000,000
Aggregate Net Cash Return		(\$600,000)	(\$400,000)	(\$200,000)	-	\$200,000	\$400,000	\$400,000
Cumulative MOIC		NA	0.33x	0.67x	1.00x	1.33x	1.67x	1.67x
Cumulative IRR		-	-	-	0%	16%	25%	25%

## **Management Team**



### **GO-OPV** Founders

#### Paul Frischer – CEO, Head of Product Development

- Global management and renewable energy senior executive with 25+ years of successful leadership experience in cross-border enterprise companies, financial technology, renewable energy, and ESG investing
- Led renewable energy initiatives at UBS, NFK, and Ledvac Capital

#### Felipe Travesso – CFO, Head of Operations

- Co-Founder of Sunew Filmes and partner at FIR Capital responsible for investments in renewable energy and printed organics
- Over 10 years of experience in investment banking focused on technology deployment, capital funding and project finance

### **Senior Advisors & Key Stakeholders**

#### David Gwozdz (O) DoubleClick Logistics / Mobility

- · Experienced leader with a demonstrated track record of scaling businesses, building exception teams, and generating revenue / shareholder returns
- Founding team and original salesman at DoubleClick: CEO in advanced security technology

Tim Cronin Outdoor / Retail



- Technology start-up specialist focused on sale, client service, and team building
- Member of founding teams at DoubleClick, Mojiva/Mocean Mobile, Wall US, and AAX

David Travesso *R&D / Materials* 

 30+ years of experience in the energy market. Executive Vice President of AES's energy group

 Co-founder and chairman of Sunew Filmes and ONINN technology center

· Design and marketing specialist with

25+ years of experience in graphic

design, communication, and

Responsible for leading product

design, sales, and marketing materials

marketing materials

ORENgE

**Robert Flippin** CBRE Real Estate

- Executive Vice President of CBRE's real estate brokerage group
- 30+ years of experiences in commercial real estate; involved in several of the largest and most noteworthy transactions in the NYmetro area



- 20+ years of experience in investment banking, project finance, market strategy, negotiations and investor relations
- Led international syndicates at IFC to finance long-tenor renewable and alternative energy projects



- Ph.D. and seasoned Chief Technology Officer in advanced chemicals and materials
- Expertise in technology creation, product and system commercialization. materials and modules design

#### Richard Macary Delos Sustainability

- Chief Strategy Officer at Delos, a company focused on health, wellness, and sustainability in the built environment
- In his current role, he provides Delos with senior level business strategy



**Julie Doppelt** 

Marketing

# Paul Frischer

+1 (203) 609-5101 pf@go-opv.com

## ORENgE<sup>™</sup> Printed Semiconductors

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# Felipe Travesso

+55 (31) 99231-1780 +1 (475) 292-4044 felipe@go-opv.com

R + perto

Faca + distante.

1' blade Facq + distante

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