

It takes a global village to raise a solar revolution



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# **COP21 - Paris Climate Summit**



"By 2035, the demand for energy investment will reach nearly \$50 trillion – and much of that will be in clean energy."



- John Kerry

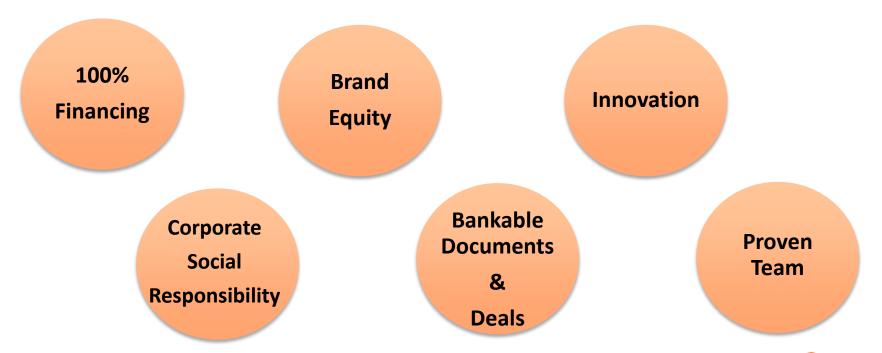
In the aftermath of the Paris Climate Summit:

What are the implications of the global economic shift towards renewable energy, and how does Gigawatt Global fit into the new paradigm?

# The Gigawatt Global Advantage



The Gigawatt Global Advantage consists of six elements, all leading to the de-risking of complex commercial scale solar power plants in new markets and getting successfully to the finish line, especially when others have failed or are challenged.





## Mission, Vision & Goals

Gigawatt Global develops, operates and owns renewable energy projects, delivering electricity to underserved populations worldwide.

### Vision

- Develop clean, renewable energy projects in emerging markets
- Empower developing country populations with sustainable power
- Reach grid parity through economies of scale, smart financing and flexible use of technologies

### Goals

- Install 750 MW of solar energy generating capacity by 2018
- Secure more than 1,000 MW of solar energy under development by 2020



## **History**



**Arava Power** established the solar power industry in Israel. In 2011 Arava Power built the first commercial-scale solar field in the country. Arava Power is a separate Israeli company whose mandate is to build solar projects only in Israel.

## GIGAWATT GLOBAL

**Gigawatt Global (GWG)** is a separate US-owned, Dutch corporation established by the founders of Arava Power to address the global energy markets.



**Energiya Global Capital** is the Jerusalem-based service company of Gigawatt Global (GWG) and is responsible for market research and project pre-development.



## Leadership

## **Founders and Advisors**



#### **Howie Rodenstein**

Chairman; Board, Global Sun Partners (Arava); Cofounder & former CFO of Adheris, Inc.; MBA Harvard Partner; Senior Financial Advisor



### Jeffrey Langberg

Partner; Senior Financial Advisor



#### **Donald Rabinovitch**

Partner/Advisor; Former Co-founder, President & CEO, AFP Imaging; MBA George Washington University



#### Sari Miller

Advisor; Angel Investor,: LeapFrog Investments; Grassroots Business Fund: MBA Wharton



#### **Ed Hofland**

Co-founder; Chairman & Co-founder of Arava Power; Chairman of AlgaTech



#### **David Rosenblatt**

Co-founder; Co-founder, Arava Power; former Managing Director, BlackRock; MBA Harvard

## Management



#### **Yosef Abramowitz**

Co-founder, President & CEO; Co-founder, Arava Power; named a solar pioneer by CNN



#### **Weldon Turner**

COO; former Director at Credit Suisse; former VP at Salomon Brothers



#### **Julian Sinclair**

VP Research; former economist UK government; BA Oxford, MPA Harvard



### **Michael Fichtenberg**

VP Finance; former Deputy CFO, Arava Power



#### Chana Gluck

Company Legal Counsel; formerly of Slaughter and May, LLP



#### **Joel Abrams**

Country Director, Nigeria; Managing Director, NSCP; Partner at Ibex Capital Partners LLP



### **Partners**























































## **Global Track Record & Credibility**

#### **New solar markets**

- Founding team pioneered Israel domestic industry
- Built first-ever utility solar field in Sub-Saharan East Africa (Rwanda)
- Developed largest pipeline of solar projects in West Africa (Nigeria)
- Secured new markets in Southeastern United States
- Addressing energy needs in the Middle East with solar solutions

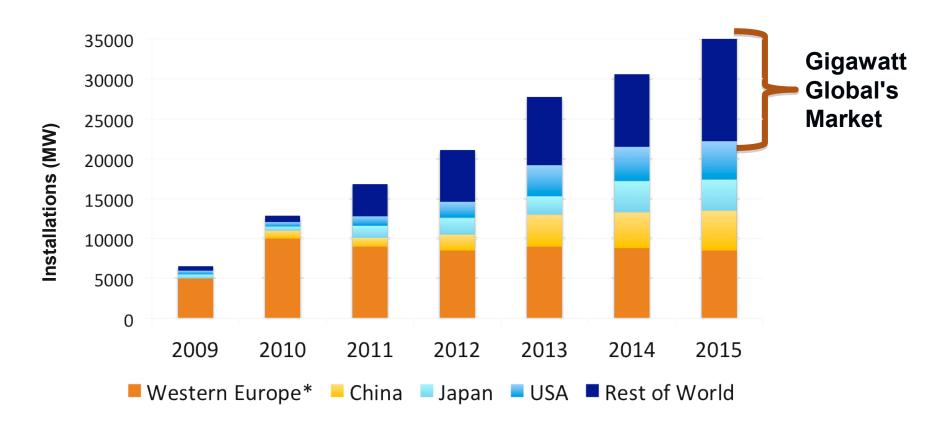
### Strategic Relations at Highest Levels of Business, Finance and Government

- Project finance partnership with Norfund and The World Bank
- Grants awarded by OPIC and EEP (UK, Finnish & Austrian Governments)
- Partner of US Government's Power Africa and Beyond the Grid Initiatives
- MOUs negotiated at President/Prime Minister level
- Partnership under negotiation with General Electric
- Legal advisers Norton Rose, Loyens & Loeff and Amb. Stuart Eizenstat of Covington & Burling, LLP

# What is the Opportunity



## **Growth in Solar Photovoltaic (PV)**



McKinsey & Company \*\* estimates that there will be an additional 400-600 GW of solar PV installed by 2020 (compared to 100 GW cumulative total today) and that emerging markets will take a far larger share of this market.

\*\* McKinsey & Company report "Darkest Before Dawn" (2012)

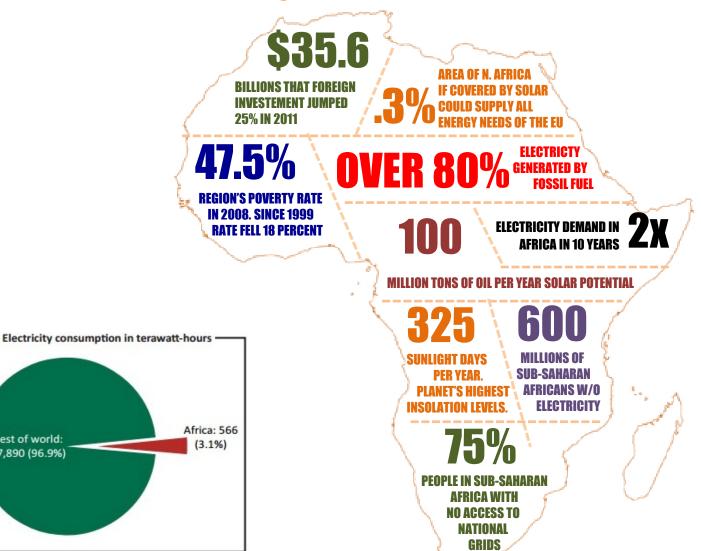


<sup>\*</sup> France, Germany, Italy and Spain

# What is the Opportunity



**Africa: A Case Study for Solar** 



Rest of world:

17,890 (96.9%)

# What We Do



## **Development Process**

### SITE CONTROL

Secure the right land for the right price

Grid survey and environmental studies

### **PERMITTING**

Navigate local permitting processes

#### **PPA**

Secure amount per kWh

Secure 20 year term of guaranteed payments

> Secure financial guarantees

## **ENGAGE EPC**

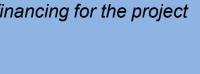
Secure internationally recognized (Tier 1) EPC (Engineering Procurement & Construction) company to design, build and maintain project

### **FINANCING**

Secure debt and equity financing for the project

#### **INTERCONNECT**

Build PV field and connect to grid







# What We Do



## Risk Mitigation

Political Risk Insurance	Covers	Amount
Overseas Private Investment Corporation (OPIC)	<ul> <li>Equity/Debt on:</li> <li>Currency Inconvertibility</li> <li>Expropriation</li> <li>Political Violence (terrorism, sabotage)</li> </ul>	<ul> <li>\$250 million</li> <li>20 years</li> <li>up to 90% of investment</li> <li>For equity: 270%</li> <li>90% initial investment</li> <li>180% future earnings</li> </ul>
Multilateral Investment Guarantee Agency (MIGA)	<ul> <li>Equity, shareholder loans, shareholder loan guarantees, and non-shareholder loans on:         <ul> <li>All coverage listed above</li> </ul> </li> <li>AND:</li> <li>breach of contract</li> <li>loss from non-honored contract</li> </ul>	<ul> <li>\$220 million</li> <li>15 years, extendable to 20</li> <li>For equity: 590%         <ul> <li>90% for initial investment</li> <li>500% future earnings</li> </ul> </li> </ul>

Partial Risk Guarantees (PRG) - The World Bank's PRG covers private lenders against the risk of a government or its agency's non-performance of contractual obligations in a private sector project. PRGs typically cover outstanding principal and accrued interest in full. NSCP's PRG means that if the off-taker defaults on a payment, the World Bank agrees to make the payment, up to twelve (12) times, and become a creditor of the utility. The Ministry of Finance of Nigeria has nominated NSCP to the World Bank's Partial Risk Guarantee.

# What We Have Done



Rwanda - Interconnected in 2014



## What is Next?



## **Nigeria**

### Need

■ **Population:** 174,000,000 – most populous nation in Africa

Energy Shortage: Only 6000 MW of currently installed capacity

■ Diesel: Heavy Dependency on Oil for Electricity Generation (64% oil)

■ Cost: Very High Cost of Electricity Generation (\$0.55+/kWh)

### **Project Details**

Size: 135 MW grid-connected

Location: Secured the Certificate of Occupancy for land in Bauchi State

Project Manager Joel Abrams - Director, Nigeria Solar Capital Partners; Ibex Capital

JV Partner: NSCP is a 50:50 joint venture between GWG and Industry Capital\*

EPC Short-listed four tier 1 EPC companies

Legal Counsel: Simon Norris, Trinity LLP- negotiated 1st Independent Power Producer PPA

with the Nigerian off-taker

<sup>\*</sup>Industry Capital is a California-based private equity fund with \$1.7 billion of assets under management, including 300 MW of solar PV farms in the US and large holdings in Nigeria

# What is Next?



## **Project Pipeline**

Regions	Megawatts
West Africa	500 MW
East Africa	200+ MW
Middle East	25 - 100 MW
United States	100 MW
Latin America	300 MW



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