



## **CORPORATE PRESENTATION**

October 2019



**Proud Partner of:**



# CLEAN ENERGY FOCUS WITH EXTENSIVE PROJECT EXPERIENCE

Expertise in finance and development of projects across a range of Clean Energy Technologies

## Utility-Scale Grid Connected Power Plants



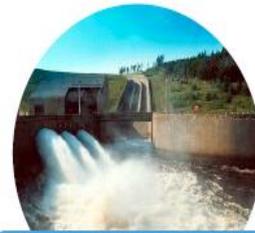
SOLAR



WIND



GEOTHERMAL



SMALL HYDRO



BIOMASS/WTE



CHP & GAS

## Off-Grid Distributed Generation and Energy Efficiency



SOLAR HOME SYSTEMS



PICO SOLAR LIGHTING



ROOFTOP SOLAR



MINI GRIDS



MICRO HYDRO



ENERGY EFFICIENCY

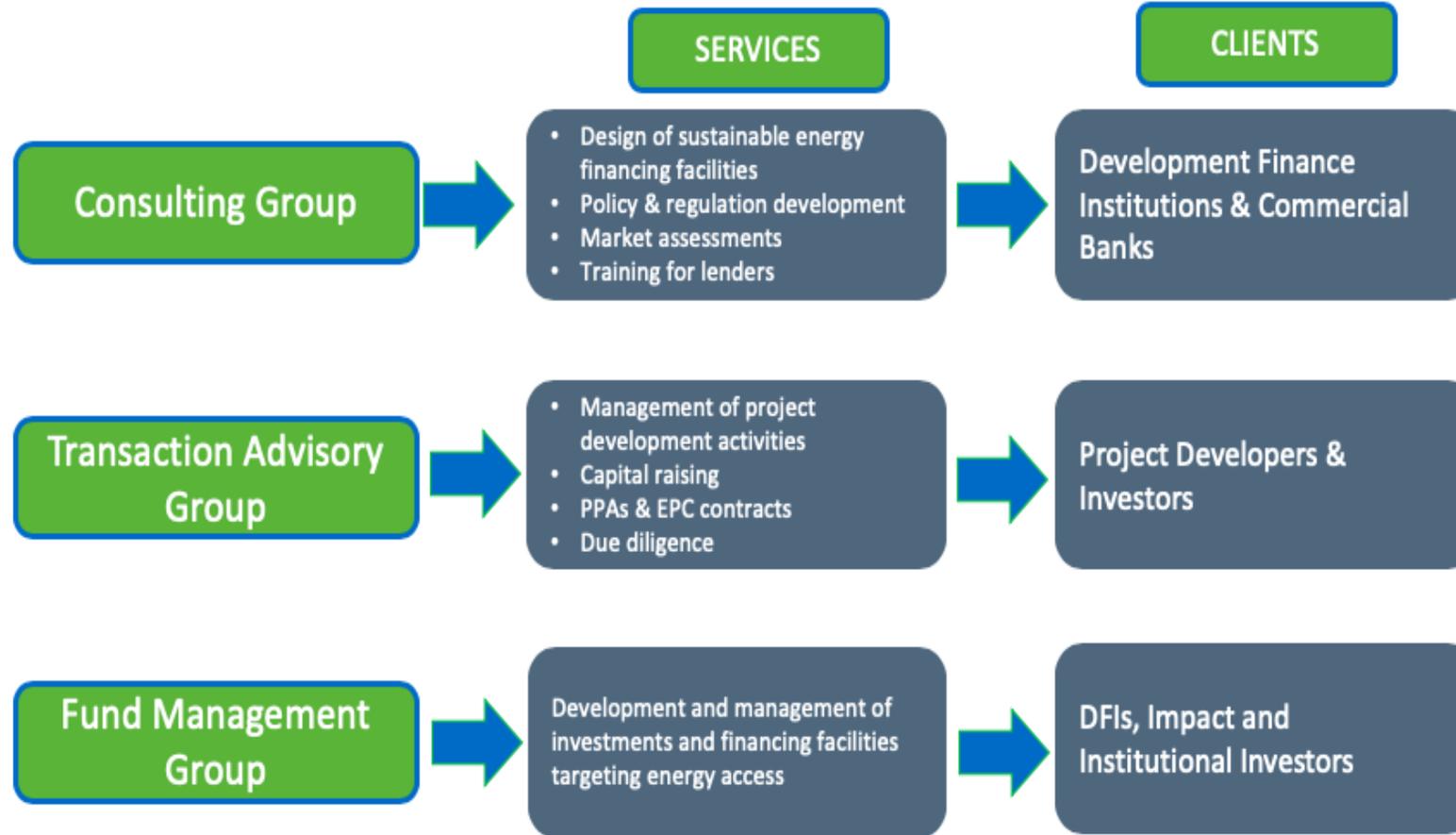
# GLOBAL PRESENCE WITH EMERGING MARKETS FOCUS



Represented in 13 countries in EUROPE, the AMERICAS and AFRICA  
Successfully executed projects across five continents & experience in more than 80 countries globally since 1994

# SERVICES

GreenMax supports the development and financing of clean energy projects in emerging markets through three activity groups



# HISTORY OF INNOVATION

In the late 1980s to the early 1990s GreenMax principals played a key role in originating new approaches to facilitate energy efficiency and distributed generation investments in the Northeast USA. We created one of the first ESCOs in New York, implemented the first portfolio of on-site cogeneration projects, the first Energy Performance Contracts for Public Housing Authorities and Diocesan properties and the first sale of “negawatts” under long-term verifiable contracts selling the saved kwh from motor and lighting retrofits at large institutional properties. Moreover, we brought electric and gas utilities, residential real estate companies and community trusts into the financing of these projects.

First Demand Side Management bidding contract to sell “negawatts” to an electric utility in the USA, 12MW of energy efficient lighting and motor retrofits installed at 4 major NYC hospitals and 14 NYC commercial office buildings under long term delivery contract to Con Edison, financed with \$15M subordinated loan from Massachusetts electric utility subsidiary, EUA Cogenex in 1993

First Energy Performance Contract for a Catholic Diocese in the USA, lighting retrofits in 17 parishes in Brooklyn and Queens 1992, financed with \$900K loan from Brooklyn Union Gas Company and \$300K loan from the NY Community Foundation

First portfolio of distributed generation projects financed by an investor-owned utility, the USA, installations of 21 60KW Tecogen gas fired cogeneration systems selling hot water and electricity to 14 different health care facilities in NYC financed with \$2M subordinated loan credit line from Massachusetts electric utility subsidiary, EUA Cogenex in 1992-94.

First Energy Performance Contract for a public housing authority in the USA, thermostatic valves, boiler and building envelope improvements installed at the Ipswich and New Bedford, MA Authority properties, financed with \$800K subordinated loan from the Beacon Companies in 1993.

# HISTORY OF INNOVATION

During the late 1990s through the mid-2000s in Eastern Europe the GreenMax team designed and helped launch and manage the first DFI funded sustainable energy financing vehicles to partner with local FIs. Through the IFC sustainable energy guarantee programs more than Euro 400 million in direct energy efficiency and small scale renewable energy investments were financed by more than a dozen commercial lenders in 5 countries. We helped to create a whole industry for financing of energy efficiency improvements in multifamily blockhouse apartment buildings by commercial banks – a market segment which in the late 1990s in Eastern Europe's new democracies bears striking similarities to some of the off grid financing challenges we face today in Africa. We initiated receivables financing for ESCOs and brought the EBRD into partnership with local municipalities and small ESCOs in the West Balkans to finance public street lighting improvements.

First municipal ESCO street lighting modernization projects in the West Balkans for Croatian cities of Vrbovec, Novigrad, Podbablje, Ludbreg and Pozega, \$10M EBRD financing in 2017

First commercial lending for multifamily energy efficiency investments in Eastern Europe; Raiffeisen Bank Hungary 1999 with IFC guarantee support.

First commercial financing of lowest income category of subsidized multifamily blockhouses in Hungary; \$3 million Erste Bank loan with guarantee support from Dutch International Guarantees on Housing, 2007.

First commercial financing of a conversion of coal fired district heating boilers to straw burning in Slovakia, Reconstruction of DH in Snina by Tenergo company (\$ 2.8m loan from PKB bank)

First large-scale financing of municipal ESCO projects in Eastern Europe, OTP Bank with Caminus ESCO, \$37M facility with IFC guarantee 2006, expanded to \$250M in 2007.

First financing of energy efficiency projects through ESCO forfaiting in Eastern Europe; Ceska Sporitelna forfaiting of Siemens Building Services \$1.2 M in EPC contract receivables from Delta Bakery installations throughout Czech Republic with IFC guarantee 2004.

First commercial financing of an industrial boiler conversion from coal to straw burning in Czech Republic, \$750,000 to Fitmin Vitamins production factory, by Ceska Sporitelna Bank, with IFC guarantee, 2005

First DFI sustainable energy loan guarantee facility - Hungary Energy Efficiency Commercial Financing Program, IFC, 1998 with \$10M guarantee authority, grew to \$70M in 2000 and \$210M for Slovakia, Czech Republic, Lithuania, Latvia and Estonia in 2001.

# HISTORY OF INNOVATION

**Since 2005 we have been applying our financing innovation experience honed over many years to both on grid and off grid investment challenges in Africa. We have taken our skills honed implementing DFI and donor funded instruments to facilitate commercial bank engagement in clean energy investments. Our forte is the design and application of risk mitigation tools and TA interventions to secure lender participation.**

First commercial financing of a utility scale solar PV project in Sierra Leone; Solar Era Holdings 5MW Phase 1 project in Bo Township, 100% equity ~\$8.7M to be provided by rAREH and construction to commence in September 2018. Now working on refinancing of the Phase 1 project on COD for SEH and rAREH

First publicly financed geothermal steam supply to private IPPs in Africa, GDC, Menengai, Kenya – financial close of 35MW Quantum IPP anticipated by Q4 2018, utilizing a strong GoK guarantee of steam supply and an AfDB PRG,

First financing of village wide clustered installations of Solar Home Systems in Uganda, town of Rwenkanja, 88 systems installed by Solar Energy Uganda Ltd., \$450K grant funding from the USA ADF and \$250K concessional loan from E&Co, 2006.

First privately financed greenfield geothermal project in Africa -- Akiira Geothermal, Kenya – over \$40M in equity from Centum and Frontier committed in 2015, further equity raise this year ongoing, production well drilling and power plant construction financing arranged with Stanbic in 2017 underwritten by a Munich Re insurance cover for dry well, permanent debt financing announced by EIB in 2018, subject to CPs

First commercial financing of a bagasse fired cogeneration power plant in East Africa 1<sup>st</sup> Phase 16MW plant at Madhvani International's Kakira Sugar Works, 2007 utilizing a combination of DFI and ECA financing in a waterfall structure,

# EUROPE EXPERIENCE

## Experience in:

- Albania
- Armenia
- Bosnia & Herzegovina
- Bulgaria
- Croatia
- Czech Republic
- Estonia
- FYROM
- Georgia
- Greece
- Hungary
- Italy
- Kosovo
- Latvia
- Lithuania
- Moldova
- Montenegro
- Poland
- Romania
- Russia
- Serbia
- Slovakia
- Spain
- Turkey
- Ukraine



# CONSULTING: FINANCING FACILITY DESIGN, FINANCIAL PRODUCT LAUNCH & TA

## European Projects



**Credit Facility for Municipal Building EE**



**Train Hungary Credit Dept. for RES**



**Launched EE Guarantee Fund**



**CZECH REP: Design RES credit line for SMEs**



**Launched Block House EE credit lines**



**HUNGARY: Launched Block House EE Financing Facility**



**MONTENEGRO: Launched EE Credit Line at Opportunity Bank**



**ESTONIA: Launched Block House EE Financing Facility**



**BOSNIA: Business plan for District Heating Company**



**TURKEY: Framework Contract for Early Stage Geothermal TA**



**CROATIA, BOSNIA: Municipal ESCO project pipeline development**



**MACEDONIA, KOSOVO: Municipal ESCO project pipeline development**



**SERBIA: Development of Highway street lighting project in ESCO model**



**Lessons learned from EE Finance in Europe**



**BOSNIA: Design of EE Loan Facility with Partner MFI**

# CONSULTING: FINANCING FACILITY DESIGN, FINANCIAL PRODUCT LAUNCH & TA

## European Projects



International Finance Corporation

**EASTERN EUROPE: Best Practices for Multifamily EE Finance**



International Finance Corporation

**CEE: Design & TA for Regional EE Loan Guarantee Fund**



International Finance Corporation

**EASTERN EUROPE: Quasi Equity RE Facility for SMEs**



International Finance Corporation

**RUSSIA: Blockhouse EE Financing Mechanisms**



European Investment Bank

**Market Study Business Plan and Design of the SEE Green for Growth Fund**



European Investment Bank

**POLAND: ESCO financing analysis for Warsaw Technical University**



WORLD BANK GROUP

**EASTERN EUROPE & CAUCASUS: Design GeoFund Investment Window**



WORLD BANK GROUP

**POLAND: Design & TA for EE Loan Guarantee Fund**



WORLD BANK GROUP

**POLAND: Low Income Multifamily EE Financing Mechanisms**



WORLD BANK GROUP

**KOSOVO: Design of Building EE Financing Mechanisms**



WORLD BANK GROUP

**UKRAINE: Design of Municipal EE Financing Mechanisms**



ALLIANCE TO SAVE ENERGY

**ARMENIA: Design of Multifamily EE Financing Mechanisms**



DUTCH INTERNATIONAL GUARANTEES FOR HOUSING  
DIGH

**ROMANIA, HUNGARY & UKRAINE: Block House EE Finance Facilities**

# GREENMAX IN ACTION

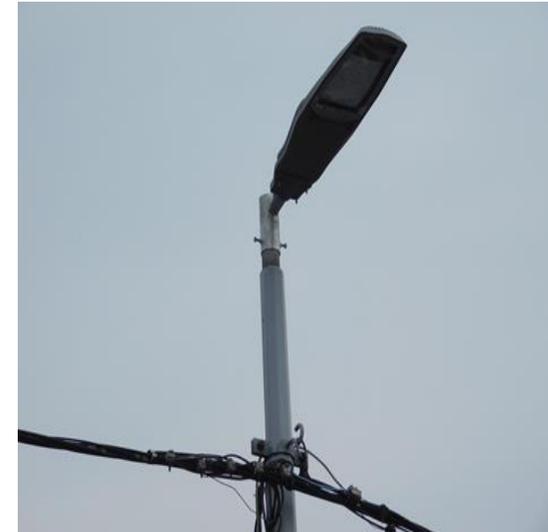
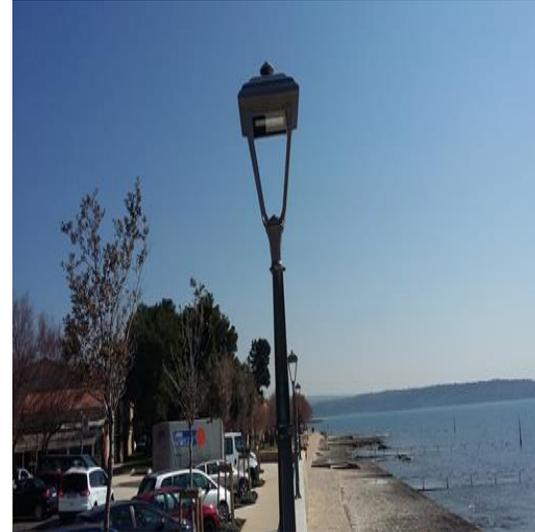
## European Projects



**European Bank**  
for Reconstruction and Development

### ESCO Pipeline Preparation in Croatia and Bosnia & Herzegovina

- GreenMax was retained by ERBD to develop and implement a pipeline of municipal ESCO projects in the West Balkans, including public street lighting retrofits in Croatia and hospital heating system upgrades in Bosnia & Herzegovina.
- The team prepared a model Energy Performance Contract and tender documentation that has been shared with all key stakeholders, local authorities, ESCOs, and local Financial Institutions in each country.



New LED lamps in the Croatian cities of Novigrad and Vrbovec. GreenMax organized the installation of high efficiency street lighting in five Croatian cities.

# GREENMAX IN ACTION

DUTCH INTERNATIONAL GUARANTEES FOR HOUSING

**DIgH**

**Credit Enhancement Fund for  
Blockhouse Energy Efficiency  
Investments in Hungary**

**Renovations included exterior wall and roof insulation, new modern heat exchangers and thermostatic controllers on apartment radiators. Energy savings of 20-50% were achieved in most buildings and more than Euro 300 million in investment was facilitated.**



# TRANSACTION ADVISORY: PROJECT IDENTIFICATION & DUE DILIGENCE

## European Projects



 <p><b>BULGARIA &amp; ITALY: Solar PV</b></p>	 <p><b>BULGARIA &amp; ITALY: Solar PV</b></p>	 <p><b>BULGARIA: Solar PV</b></p>	 <p><b>BULGARIA: Solar PV</b></p>	 <p><b>BULGARIA: Solar PV</b></p>	 <p><b>Entry to CEE solar market</b></p>
 <p><b>ESTONIA: Wind</b></p>	 <p><b>POLAND: Wind</b></p>	 <p><b>ITALY: Solar PV</b></p>	 <p><b>ITALY: Solar PV</b></p>	 <p><b>ITALY: Solar PV</b></p>	<p><b>SOLAR ENERGY PARTNERS Limited</b></p> <p>Solar Infrastructure Investment Specialists</p> <p><b>ITALY: Solar PV</b></p>
 <p><b>ITALY: Solar PV</b></p>	 <p><b>ROMANIA: Solar PV</b></p>	 <p><b>ROMANIA: Solar PV</b></p>	 <p><b>ROMANIA: Solar PV</b></p>	 <p><b>ROMANIA: Solar PV</b></p>	 <p><b>GREECE: Solar PV</b></p>

# GREENMAX IN ACTION



Above and right: Libocany Weir Small Hydroelectric Power Plant in Czech Republic during construction.



## Central Europe Energy Efficiency Loan Guarantee Facility

GreenMax advised IFC on the debt financing.



Above and right: Harvesting of straw to fuel new biomass process boilers at the FitMin vitamin factory in Czech Republic.



# TRANSACTION ADVISORY: PROJECT IDENTIFICATION & DUE DILIGENCE

## European Projects



**M.R.POWER**  
RENEWABLE ENERGY COMPANY

**BOSNIA & HERZEGOVINA : Small Hydro**

**MARTIFER**  
GROUP

**BULGARIA: Wind**

**RNK CAPITAL LLC**

**CEE: Landfill gas & carbon trades**

**MIDEUROPA**  
PARTNERS

**CEE: Wind**

**IBERDROLA**  
RENOVABLES

**CZECH REP & SLOVAKIA: Wind**

**enfinity**  
energy for life

**HUNGARY: Wind**

**neo energia**

**POLAND: Wind**

**ENERGY INVESTORS FUNDS**

**POLAND: CHP**

**GLOBAL ENVIRONMENT FUND**

**POLAND: CHP**

**ELLAKTOR**

**POLAND: Wind**

**rpGLOBAL**  
RENEWABLE POWER

**POLAND: Wind**

**Krokus PE**

**POLAND: Bio-Pellet Plant**

**ROYALTON PARTNERS**

**RE sector investments**

**Electricom**

**ROMANIA: Wind**

**CET**

**ROMANIA: Wind**

**European Bank**  
for Reconstruction and Development

**POLAND: BOT Power Company**

**FERSA**  
Fersa Energias Renovables, S. A.

**BALTIC REGION: Wind**

**FERSA**  
Fersa Energias Renovables, S. A.

**TURKEY: Acquisition of wind projects**

**Transmark Renewables**

**TURKEY: Geothermal**

# GREENMAX IN ACTION

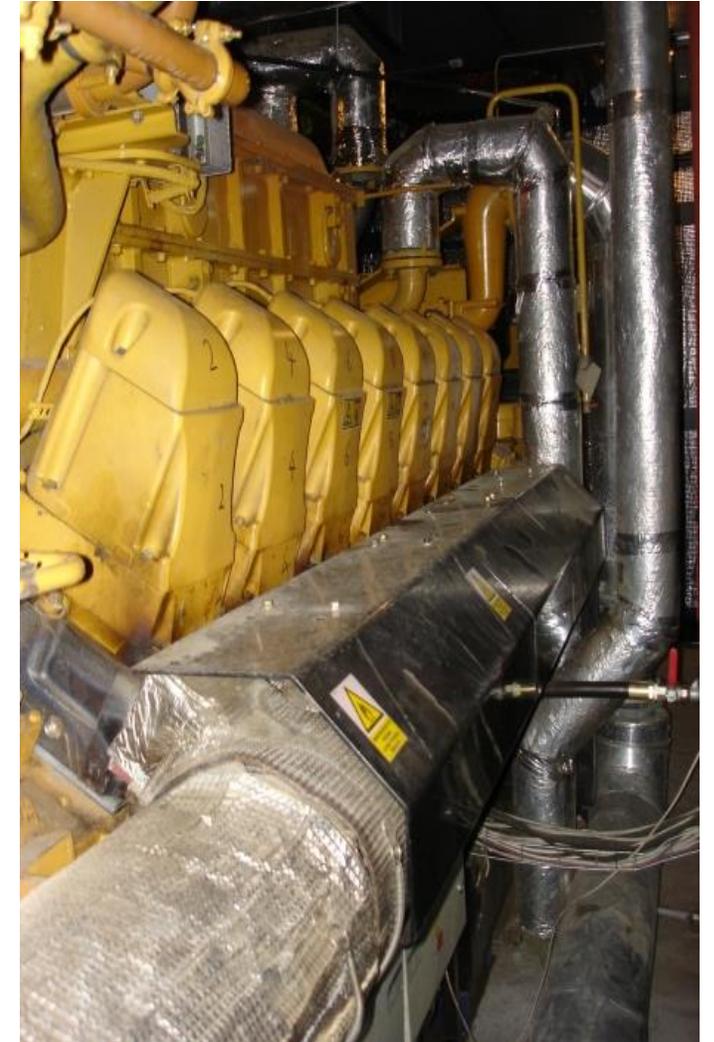


## Central Europe Energy Efficiency Loan Guarantee Facility

GreenMax advised IFC on the debt financing.



Above: Fuel switch (natural gas to wood chips) in heat supply company Termonova in Nova Dubnica (\$3.8 m loan from Dexia bank which purchased PKB)



Right: Steam from the wood chip boilers below powers a new turbine to make electricity for Snina, where previously coal was used to produce only heat for the town, now clean burning wood chips make both heat and electricity.

# GREENMAX IN ACTION

**SOLAR ENERGY PARTNERS Ltd.**

**Acquisition of Solar PV Plant in Italy**

**GreenMax advised the buyer of the completed power plant.**



Installation of the 40 MW Ternavasso solar PV plant in Italy.

# TRANSACTION ADVISORY: CAPITAL RAISING

## European Projects



**CZECH REP:  
6 MW  
SVEP wind  
farm**



**CZECH REP:  
FITMIN  
Company  
Biomass Boilers**



**CZECH REP:  
2 MW  
Libocany Weir  
Small Hydro**



**CZECH REP: BOSS  
Company wood  
gasification  
boilers**



**CZECH REP:  
Forfeiting of  
ESCO  
Receivables**



**SLOVAKIA:  
District  
Heating**



**SLOVAKIA:  
District  
Heating**



**Trade Credit  
Financing for  
90 MW SOMA  
wind farm**



**UKRAINE:  
USTDA Project  
Development  
Grant for RDF  
pellet facility**

# GREENMAX IN ACTION

## European Projects



GreenMax advised IFC on its very first renewable energy project financing.



Installation of the first tower of the 6 MW SVEP wind farm in Czech Republic.

## Transmark Renewables

GreenMax advised the owner, Transmark Renewables, on securing an investment partner.

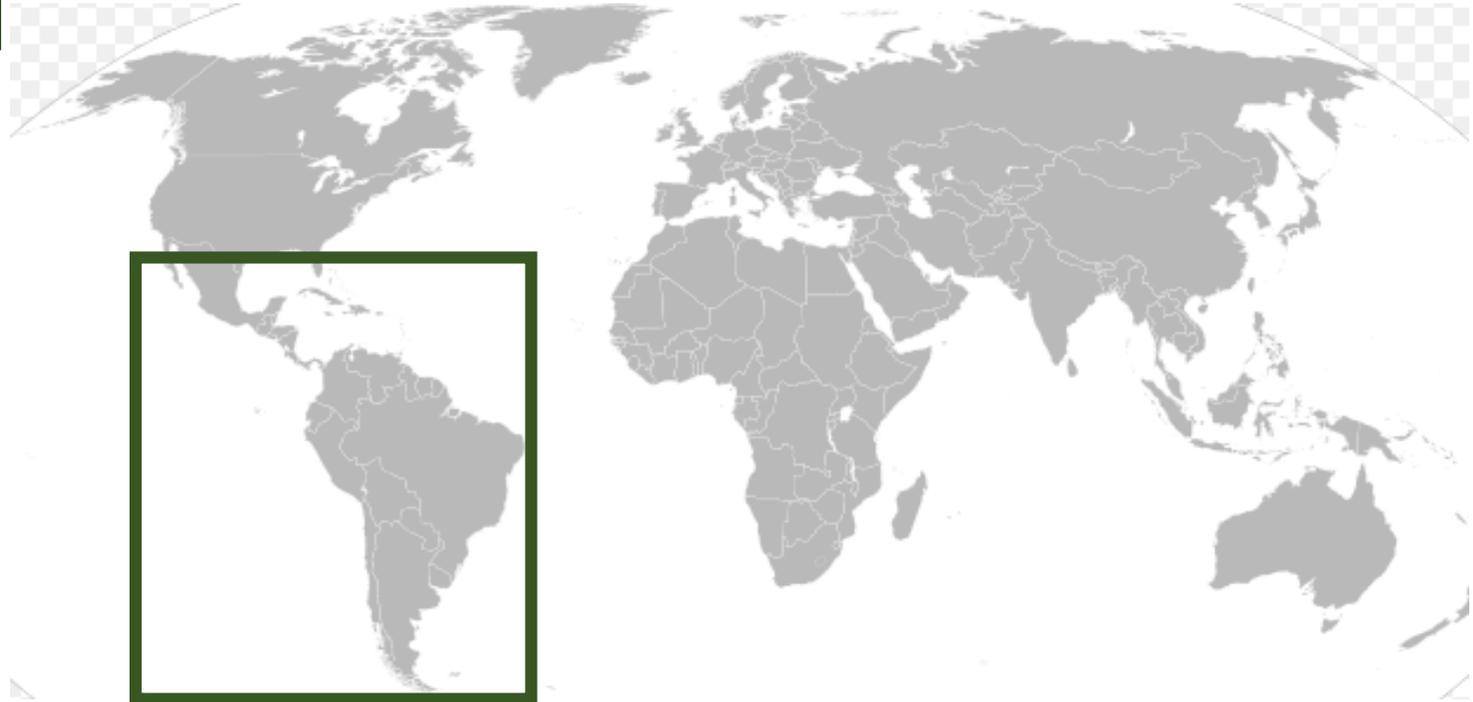


Drilling operations at the Kocakoy Geothermal development site in Turkey.

# LATIN AMERICA & CARIBBEAN EXPERIENCE

## Experience in:

- Argentina
- Barbados
- Bolivia
- Brazil
- Chile
- Colombia
- Costa Rica
- Dominica
- Dominican Rep
- Ecuador
- El Salvador
- Guyana
- Guatemala
- Haiti
- Honduras
- Jamaica
- Mexico
- Nicaragua
- Paraguay
- Peru
- Panama
- St. Kitts & Nevis
- Uruguay



# CONSULTING: MARKET ASSESSMENTS & FINANCING FACILITY DESIGN

## Latin American Projects



**DOMINICA:**  
TA to NDFD to launch a green finance loan facility for households and SMEs



**CHILE:**  
Design of Renewable Energy Self Supply and Energy Efficiency Financing Facility



**CHILE:**  
Renewable Energy & Energy Efficiency Training and Technical Support to project developers and ESCOs



**ANDEAN REGION:**  
Geothermal Market Assessment and Financial Advisory in Chile and Peru



**ARGENTINA:**  
Design of the National Energy Efficiency Fund



**REGIONAL**  
2019 Update to the RISE data base for 18 countries in South and Central America



**ANDEAN REGION:**  
Waste to Energy Market Assessment for Chile and Colombia



**EASTERN CARIBBEAN:**  
Geothermal Market Assessment for St. Kitts & Nevis, Dominica, Montserrat



**DOMINICAN REP:**  
Wind Energy Market Assessment and Project Due Diligence



**COLOMBIA:**  
Design of the Sustainable Energy Fund "FENOGE"



**COLOMBIA:**  
Design of Capital Markets Instruments for Financing Renewable Energy

# GREENMAX IN ACTION

Latin  
American  
Projects



## Chile Renewable Energy Self Supply and Energy Efficiency Fund



GreenMax President, Clifford J. Aron, leads a seminar in Santiago, Chile on launching the Renewable Energy Self Supply and Energy Efficiency Fund with local ESCOs, project developers and commercial bankers in attendance.

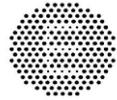


# TRANSACTION ADVISORY: CAPITAL RAISING

## Latin American Projects



**PANAMA & DOMINICAN REPUBLIC:**  
Assessment of wind project investment opportunities



**L ENERGIA**

**CHILE:**  
Capital Raising for Project Development & Implementation of 30MW pipeline of solar PV projects



**CHILE:**  
Codelco Copper Industrial Heat Recovery Project Grant Funding

**ORMUZ**

**HONDURAS:**  
Capital Raising for Project Development and Implementation of 10 MW pipeline of solar PV on Roatan and other Islands



**COLOMBIA:**  
Grant funding for planning of pilot agricultural waste to energy project in Antioquia



**COLOMBIA:**  
Capital Raising for Project Development & Implementation of 200MW wind project

# GREENMAX IN ACTION

## Latin American Projects



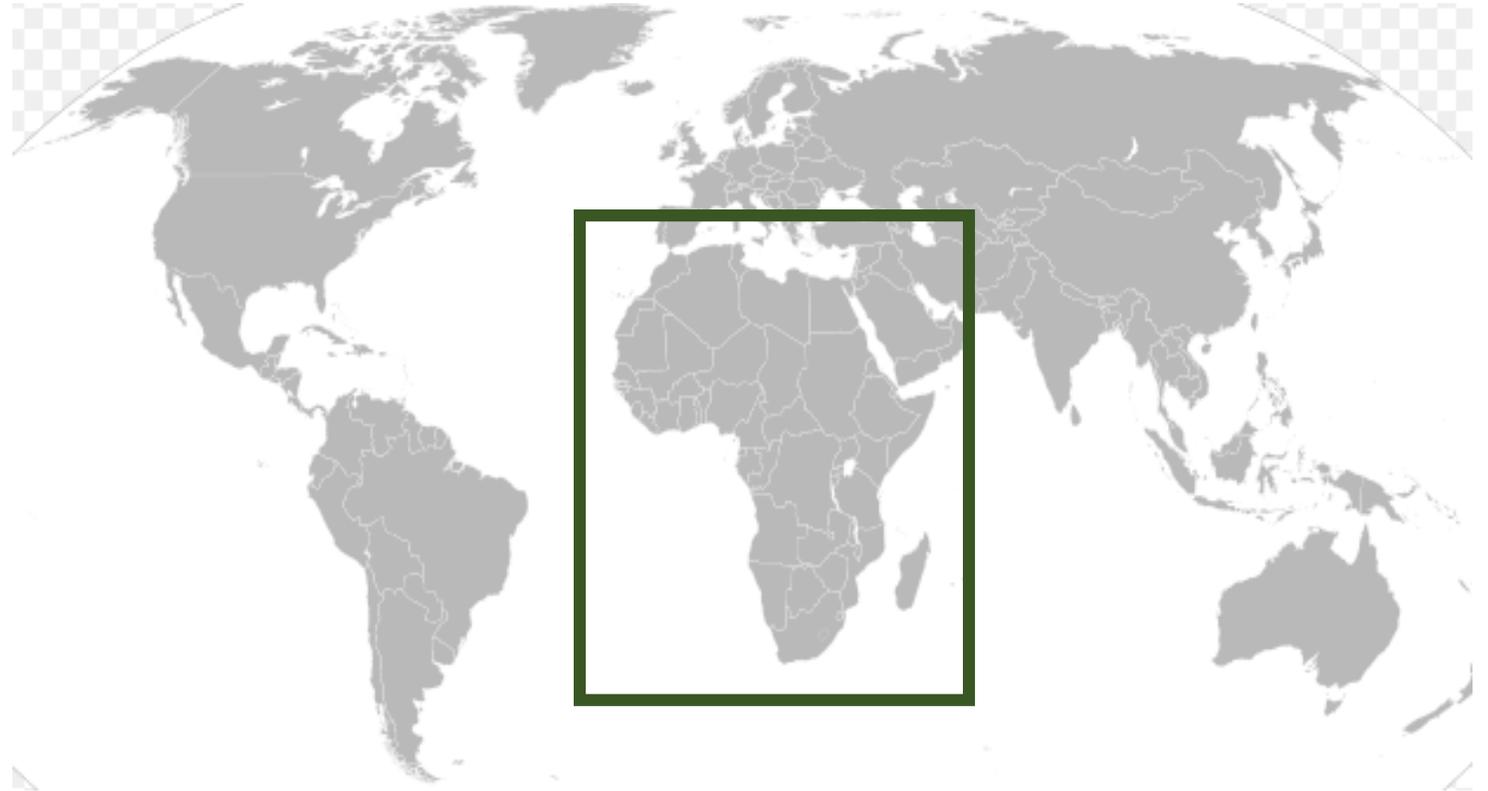
GreenMax secured grant funding from the US Trade & Development Agency to prepare the investment in extensive heat recovery systems for the copper smelters at Codelco in Chile, the world's largest copper producer. The recovered heat will produce approximately 40,000 lb./hr. of steam, enough to generate 15 MW of "free" electricity.



# AFRICA AND MIDDLE EAST EXPERIENCE

## Experience in:

- Angola
- Benin
- Burundi
- Cameroon
- Cape Verde
- Central African Rep
- Chad
- Egypt
- Eritrea
- Ethiopia
- Gambia
- Ghana
- Guinea
- Guinea Bissau
- Jordan
- Kenya
- Liberia
- Malawi
- Mali
- Mauritania
- Morocco
- Nigeria
- Namibia
- Rwanda
- Senegal
- Sierra Leone
- Somalia
- Somaliland
- Sudan
- South Sudan
- Tanzania
- Togo
- Uganda
- Yemen
- Zambia
- Zimbabwe



# FUND MANAGEMENT

## Financing for Distributed Generation Projects in Africa

### GreenStreet Africa

- Arranges low interest, long-term 95-100% project financing in amounts as high as \$1 billion, for distributed energy portfolios in qualifying countries in Africa, deploying the unique financing structure of a private placement bond issue underwritten by a major international investment bank, used to raise funding for the project and secured for repayment by a third party insurer, such as US OPIC, World Bank MIGA or private sureties.
- GreenStreet Africa's investment in the development of each portfolio is repaid from the proceeds of these bond and local currency financings.
- To support the development of these transactions, GreenStreet Africa is establishing the GreenStreet Africa Blended Finance Vehicle to target clean energy solutions for publicly owned and private C&I facilities in Africa.



### Pilot Project in Nigeria

- The Gov't of Nigeria is seeking to bring electricity to rural populations and rural institutions such as schools, health centers, administrative buildings and rural businesses.
- The Rural Electrification Fund (REF) has focused on the following initial targeted assets to be organized and financed with the GreenStreet Africa Blended Finance Vehicle:

Nigerian Public Facilities	Aggregate Capital Cost	kW Size, Unit Cost Assumptions
50 Public Schools	\$25.00 MM	200-250kW, \$0.5 MM each
28 Polytechnic Schools	\$140.00 MM	1-3 MW, \$5.0 MM each
22 Federal Colleges of Education	\$35.00 MM	1-2 MW, \$1.6 MM each

# FUND MANAGEMENT

## The Problem

Local lending for Energy in Sub Saharan Africa is not scaling up quickly enough due to the perception of significant credit risks (consumer credit, forex risks, wariness of business models/collateral values). This is particularly true for expansion of off grid finance outside of asset based lending for PAYG portfolios in East Africa. Increased application of First Loss Facilities could help mitigate these perceptions but to date only a limited amount of philanthropic and donor funds have been deployed in this way and these have been placed largely on an ad hoc basis. In order to better leverage concessional funding and “crowd in” other sources of capital to fund first loss instruments, there needs to be a common understanding among lenders and investors about *what risks first loss facilities should cover and is it possible to reach a level of pricing to allow the facilities to be more widely used and*

## G4A's Solution

The Green 4 Access First Loss Facility partnership will establish a common, blended finance platform for First Loss Facilities to support Energy Access lending. Through methodical, industry-wide data collection and analysis, the partnership will design and offer first loss products that help local and international lenders to perceive off grid lending as sufficiently de-risked, while also aiming to allow the fund's investors to achieve commensurate returns that make the products sustainable. To be initially capitalized at up to \$50 MM, G4A will seek to create a tiered fund structure in order to blend existing philanthropic and donor sources with capital from impact investors, DFIs and others.



# GREENMAX IN ACTION

## Africa Projects



## GreenStreet Africa



GreenMax President, Clifford J. Aron, participating on panels at AIX Energy conferences in Nairobi and London to present the GreenStreet Africa financing initiative.

# CONSULTING: MARKET ASSESSMENTS

## African Projects



**TANZANIA:**  
Market Intelligence Report for Lighting Africa launch



**EAST AFRICA:**  
Geothermal Market & Finance Assessment



**KENYA:** Market Assessment for GDC's JDA business model



**UGANDA:**  
Review of Rural Electrification Cooperatives Strategy



**REGIONAL:**  
Regulatory Indicators for Sustainable Energy (RISE) Surveys in 13 countries



**ECOWAS:**  
Market Study for Design of Off Grid Financing Tools in 19 countries



**ZAMBIA:**  
Rural community market studies for portfolio of 125 micro grids



**SOMALIA:**  
Assessment of Off Grid Enterprises for Technical + Grant Assistance



**TANANIA & UGANDA:**  
Energy Sector Definitional Mission to review projects



**KENYA, RWANDA, BURUNDI:**  
Energy Sector Mission to review projects



**KENYA & TANZANIA:**  
Energy Sector Mission to review projects

# GREENMAX IN ACTION

## African Projects



- RISE is a set of quantitative and qualitative indicators developed by the World Bank to help compare national policy and regulatory frameworks for sustainable energy.
- During 2015 GreenMax was appointed to carry out substantial data collection through a combination of desk research, interviews with government officials, and a range of public/private sector experts and key stakeholders covering the three SE4ALL pillars – renewable energy, energy efficiency and energy access – for select countries in Africa.
- GreenMax was responsible for data collection and report presentation in Angola, Benin, Central Africa Republic, Chad, Eritrea, Liberia, Malawi, Mauritania, Nigeria, Sierra Leone, Somalia, South Sudan and Sudan.
- During 2017 and 2019 GreenMax was assigned by the World Bank to update information for the above countries plus Rwanda and Kenya.

# GREENMAX IN ACTION

## African Projects



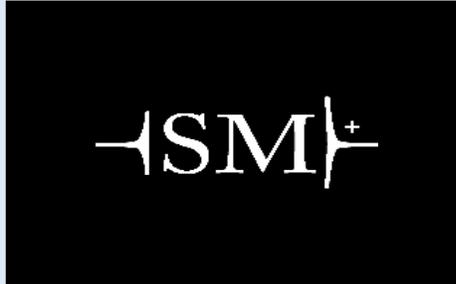
- The ECOWAS Center for Renewable Energy and Energy Efficiency (ECREEE) is launching a Regional Off-grid Electrification Project (ROGEP) focused on enhancing shared capacity, institutions and knowledge in order to jointly increase electricity access to households, businesses and communities throughout the region.
- As part of the first phase of ROGEP, an initial assessment of 19 markets across West Africa has been undertaken by GreenMax during 2018 in order to develop appropriate regional and national policy, regulatory and financing frameworks to promote stand-alone solar technologies and services and reinforce regional integration in the RE sector.



ECREEE + GreenMax Teams at the Kick-Off Meeting in Praia

# GREENMAX IN ACTION

## African Projects



- GreenMax was retained by USDA to execute a multidisciplinary assignment in Zambia to support development of a portfolio of 150 - 15KW standardized rural micro-grid projects throughout the country by the USA-S.A.-Zambian company Standard Microgrids.
- The TA involved a suite of services including GIS mapping of over 300 potential village sites, on the ground demand and ability to pay surveys in 120 villages, regulatory advisory on licensing for the micro grid locations and tariff approval for the SM innovative “Power Time” billing approach, tax advisory, financial modelling and marketing and promotional components.



GreenMax Senior field enumerator leads community focus group with village residents in Zambia for preparation of micro-grid installation by Standard Microgrid.

# TRANSACTION ADVISORY: UTILITY-SCALE

## African Projects



**KENYA:**  
Lead Transaction Advisor for Menengai Geothermal Prospect



**KENYA:**  
Design of the Joint Development Program



**GHANA:** Project Management & Financial Advisory for 100 MW Solar PV plant



**RWANDA:** Development support for 40MW Solar PV-HFO hybrid power plant



**SIERRA LEONE:** Capital Raise + Project Development support for 25 MW Solar PV-power plant

**Brio Integrated Power Limited**

**NIGERIA:** Development & Implementation Financing for 70 MW Natural Gas Power project in Lagos

**OSD Projects Limited**

**NIGERIA:** Development support for a 20 MW Natural Gas Power project in Ikeja Industrial Zone



**KENYA:** Development Planning & Concessional funding for geothermal power project



**KENYA:** Grant funding & development support for geothermal power project



**TANZANIA:** Advisory on geothermal business models for Tanzania Geothermal Development Co

# TRANSACTION ADVISORY: UTILITY-SCALE

## African Projects



**NIGERIA:**  
Project Development support for 60 MW WTE plant in Lagos



**Madhvani International**

**UGANDA:**  
Development Advisory for 30 MW Peat fired power plant in Kabale

**SB SPUMANTI**

**NIGERIA:**  
Development Support for 2 MW rooftop solar PV plant in Lagos



**KENYA:**  
Review of small hydro project development portfolio



**NIGERIA:**  
Capital raise to support 50MW solar project development in Jigawa State



**RWANDA:**  
Development advisory for 10 MW Rukarara & 27 MW Nyaborongo Hydro plants



**RWANDA:**  
Project Development Support for 2.4 MW Small Hydro plant



**KENYA:**  
Capital Raise + Development support for 25 MW Ngong Hills Wind Farm



**KENYA:**  
Capital raise to support hybrid 10 MW solar/15MW wind project in Ngong Hills

# GREENMAX IN ACTION

## African Projects



### Lead Transaction Advisor to Kenya GDC Menengai Geothermal Prospect

- GreenMax served as Lead Transaction Advisor from 2014 – 2018 to support the Geothermal Development Company with development of 460 MW at the Menengai Geothermal Prospect in Kenya.
- The GreenMax team was made up of financial, legal and technical specialists who prepared the Menengai project for investment and implementation.
- GreenMax was tasked with confirming the resource and environmental management plans, designing viable steam sales and electricity sales tariffs, advising on a workable organizational and financing structure and promoting the opportunity to private IPP investors.
- The first of 3 IPPs in Phase I, 35MW developed by Quantum Power East Africa reached financial close in 2018 and will break ground in Q1 2019



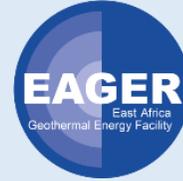
Above: Menengai Geothermal Prospect, Kenya

Below: GreenMax President, Clifford J. Aron (far right), with GreenMax project team members and GDC staff at Menengai.



# GREENMAX IN ACTION

## African Projects



### Capacity Building for Tanzania Geothermal Development Company

- **GreenMax is providing ongoing consulting services to the Adam Smith International led consortium that is implementing the DFID-funded East Africa Geothermal Energy Resource (EAGER) Facility to facilitate investment in geothermal power generation in Ethiopia, Kenya, Rwanda, Tanzania and Uganda.**
- **GreenMax provided capacity building for Tanzania's Geothermal Development Company (TGDC). The work included preparing key reports and documents on negotiating of concessions and PPAs, calculation and setting of cost reflective electricity and steam tariffs, and establishing PPP joint ventures with private investors.**
- **Our team has also prepared an annotated model PPA and a detailed matrix to guide PPA negotiations by illustrating different stakeholder positions on key issues.**
- **The capacity building was undertaken in the form of a series of workshops for TGDC on these topics including role-play in mock negotiations.**

# GREENMAX IN ACTION

## African Projects



### Solar Project Development Support in Ghana

- GreenMax was retained as financial advisor and project development manager to HEA for development and implementation of a 100 MW Solar PV project in Northwest Ghana.
- GreenMax assisted HEA with strategic and business planning services in order to help the firm secure financing for its project development activities and managed the project preparation process to ensure that HEA's project obtains a full set of bankable documents.
- The GreenMax also managed project preparation engagement of engineering and environmental consultants through a competitive solicitation process to carry out the feasibility, interconnection and environmental studies for the project.

Members of the GreenMax team with the Nyimbale and Sankana Communities in Ghana. A special traditional ceremony where prayers, chanting and sharing of traditional food and drinks were carried out in order to give permission to start surveying activities for the 100 MW Home Energy Africa Solar PV project.



# GREENMAX IN ACTION

## African Projects



GreenMax team members survey the land site for location of Kleen Energy's proposed 25 MW hybrid solar-wind project in Ngong Hills, Kenya, together with Kleen Energy Principal, Edward Mugo. The project will be Africa's first utility-scale solar-wind hybrid generation plant.

**GreenMax is advising on the project development and fundraising.**



GreenMax's technical study team and Home Energy Africa staff meet with community members reviewing a map of the 100 MW solar project area in Nyimbale-Sankana, Ghana.

**GreenMax has managed the project development process and secured a strategic investment partner.**

# TRANSACTION ADVISORY: UTILITY-SCALE

## African Projects



**KENYA:**  
Grant funding  
for TA at KTDA  
on small hydro  
development



**TANZANIA:**  
Grant funding  
for TA at  
EWURA on  
PPAs & tariffs  
for IPPs



**KENYA:**  
Grant funding  
for  
development of  
70 MW  
Geothermal  
project



**KENYA:**  
Grant funding  
for  
development  
of 10 MW  
Ngong Hills  
Solar Park



**RWANDA:**  
Grant Funding  
to develop a 5  
MW Small  
Hydro Project



**UGANDA:**  
Grant funding  
for TA at  
Ministry of  
Energy on  
Biofuels Plan



**UGANDA:**  
Grant Funding  
to develop  
23MW Bagasse  
Cogen at  
Kakira Sugar



**KENYA:**  
Grant funding  
for development  
of 40 MW solar  
PV project in  
Homa Hills



**KENYA:**  
Grant funding &  
development  
support for  
geothermal  
project

# GREENMAX IN ACTION

## African Projects



GreenMax President, Clifford J. Aron, and Deputy Director of Africa Transaction Advisory, Ifechukwude Uwajeh, with Solar Era Sierra Leone Managing Director, Sophie Johnson, after agreeing with local chiefs and landowning families on land use arrangements for the Solar Era 25 MW solar PV project to be constructed near Sierra Leone's second and third largest towns, Bo and Kenema.



Solar Era Sierra Leone Managing Director, Sophie Johnson, with responsAbility Renewable Energy Holding, CEO Jerome Niessen, sign the Heads of Terms for rAREH's investment in the the Solar Era 25 MW solar PV project.

**GreenMax is advising on the project development, grant funding and the capital raise.**

# TRANSACTION ADVISORY: UTILITY-SCALE

## African Projects



**NAMIBIA:**  
Grant funding  
& development  
support for  
geothermal  
project

### SAGALLA CITY SOLAR

**KENYA:**  
Grant funding  
& development  
support for  
10MW solar PV  
project



**GAMBIA:**  
Grant Funding  
for a 15 MW  
solar-hybrid  
project



**GHANA:**  
Capital raising  
for a 20 MW  
solar PV  
project



**KENYA:**  
Grant Funding  
to develop a 50  
MW wind  
project

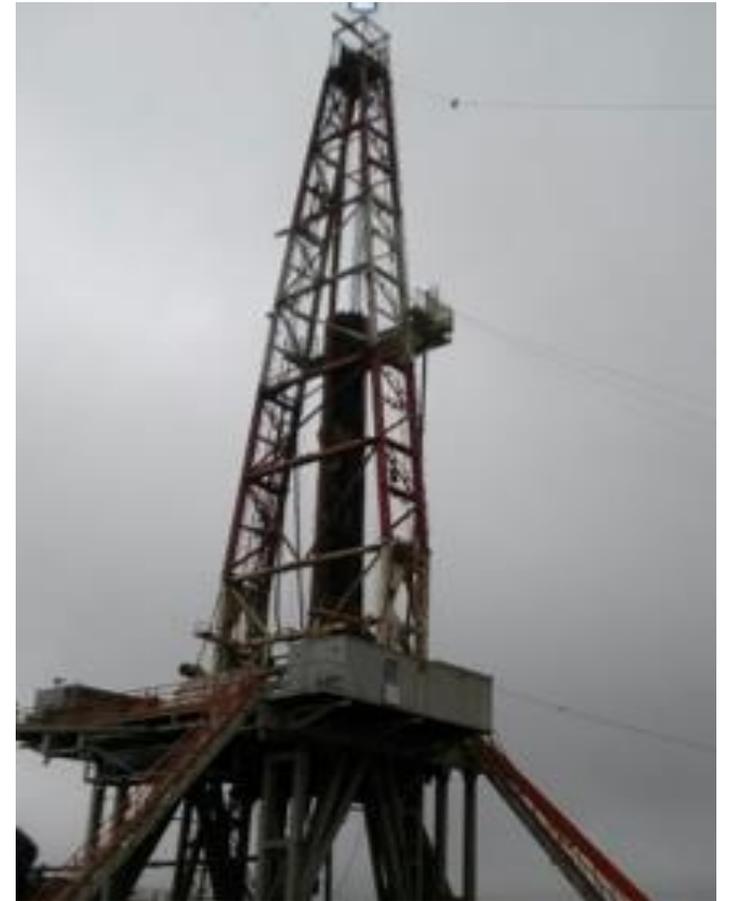
# GREENMAX IN ACTION

## African Projects



### Akiira Geothermal Power Project Grant Funding & Project Development Support

- Located next to the Olkaria field in Kenya, the Akiira Geothermal project will be implemented in two tranches of 70 MW each. Akiira is a landmark project in that it is the first greenfield geothermal project in Africa to be privately financed without government financial support in early stage exploration.
- GreenMax was retained to secure concessional funding for the development process of the project. To date, GreenMax team members have secured a \$1.2 M grant to support drilling from the Geothermal Risk Mitigation Facility, grant funding of nearly \$1 million from the U.S. OPIC Africa Clean Energy Facility to support final stages of project preparation including technical and legal work necessary to commence drilling, and approval for another \$1 million from USTDA to support the final feasibility study after test drilling.



Start up of drilling rig at well # 2 for the Akiira Geothermal project in Kenya.

GreenMax is supporting Akiira with fundraising for the project development stage.

# GREENMAX IN ACTION

## African Projects



Members of the GreenMax team with the Homa Hills Community in Kenya. A special community meeting was organized to explain the proposed 40 MW Quint Energy solar PV project and to start the land surveying activities.

**GreenMax advised the developer on the project development and fundraising.**

# TRANSACTION ADVISORY: OFF-GRID

## African Projects



 lynta  
Powering Nigeria with the sun

**NIGERIA:**  
Grant funding,  
capital raise +  
debt facility for  
home solar  
installer

 rensource

**NIGERIA:**  
Grant funding  
+ debt facility  
for home solar  
PayGo installer



**PAYGO ENERGY**

**KENYA:**  
Grant funding  
for pay-as-you-  
go supplier of  
LPG cooking  
gas

 solar  
era

**CAMEROON:**  
Grant funding &  
capital raise for  
development of  
solar minigrids  
for 30  
communities

 RUBITEC POWER  
RUBITEC SOLAR

**NIGERIA:**  
Grant funding &  
capital raise for  
development of  
solar minigrids  
for rural  
communities

 solar  
era

**NIGERIA:**  
Grant funding  
& capital raise  
for mini grids  
in Kwara State

 solar  
era

**SIERRA LEONE:**  
Grant funding  
for solar  
lantern and  
home solar  
systems

 Trust  
Synergy  
INFRASTRUCTURES LIMITED

**NIGERIA:**  
Grant funding  
& capital raise  
for mini grids  
in Jigawa State

**Solar Energy  
Uganda Ltd**

**UGANDA:**  
Working capital  
for first  
"Village Power"  
mini-grid  
installations in  
Uganda

 HAVENHILL  
Synergy

**NIGERIA:**  
Grant funding &  
capital raise for  
development of  
solar minigrids  
for rural  
communities

# TRANSACTION ADVISORY: OFF-GRID

## African Projects



**KENYA:**  
Grant funding,  
capital raise +  
debt facility for  
2MW self  
supply floating  
solar project



**BURUNDI:**  
Grant funding,  
capital raise +  
debt facility  
1MW self  
supply solar  
project



**GHANA:**  
Grant funding &  
capital raise for  
development of  
maize stover  
waste to energy  
project



**Africa:**  
Grant funding &  
capital raise for  
development of  
Pan African C&I  
Solar Platform



TOPSTEP

**NIGERIA:**  
Grant funding,  
capital raise +  
debt facility for  
Solar Powered  
Grain Mills



**KENYA:**  
Capital raise +  
debt facility for  
Solar EPC  
focused on  
C&I space



**NIGERIA:**  
Grant funding,  
Capital raise +  
debt facility for  
Community  
small hydro  
portfolio



**UGANDA:**  
Grant funding,  
Capital raise +  
debt facility for  
Off grid  
activities

# GREENMAX IN ACTION

## African Projects



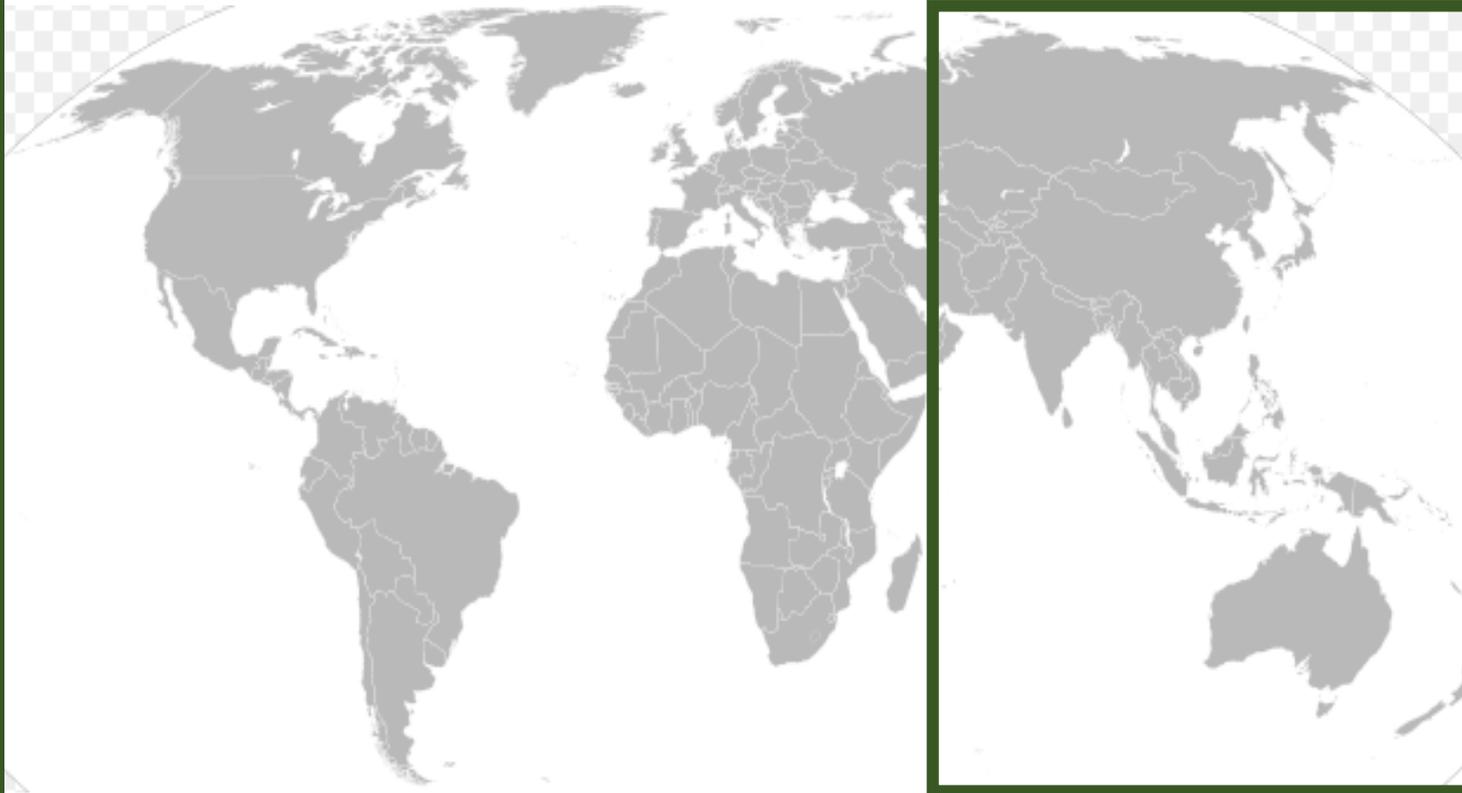
### Distributed Solar PV Project Development in Nigeria

- Solynta offers solar energy solutions to urban households and small businesses in Nigeria, including both Lease-to-Own and Pay-As-You-Go payment options.
- To date, Solynta has deployed over 300 solar systems across the country, with a total installed capacity of over 1 MW and currently has a strong pipeline of shovel-ready PAYG projects with a total capacity of over 10 MW.
- Solynta retained GreenMax to raise grants, equity and debt financing for the implementation of its pipeline of projects.
- Rensource aims to replace individual fossil-fuel generators across Nigeria on a large scale with distributed solar assets through a scalable PAYG business model that allows underserved consumers and small businesses in urban and peri-urban areas to buy reliable, clean and inexpensive power via a monthly subscription fee.
- Rensource retained GreenMax to raise concessional funds and arrange a debt facility to support growth of the company.

# ASIA & PACIFIC EXPERIENCE

## Experience in:

- Cambodia
- China
- Fiji
- India
- Indonesia
- Kiribati
- Kyrgyzstan
- Marshall Islands
- Micronesia
- Mongolia
- Nauru
- Niue
- Papua New Guinea
- Philippines
- Palau
- Tajikistan
- Thailand
- Tonga
- Vanuatu
- Vietnam



# CONSULTING: FINANCING FACILITY DESIGN, PROJECT DUE DILIGENCE

## Asia & Pacific Projects



**MONGOLIA:**  
Design of a  
new Green  
Investment  
Fund



**VANUATU:**  
Design of a  
new national  
fund to invest  
in rural  
electrification



**INDIA:**  
Due Diligence  
of five clean  
energy  
projects



**VIETNAM:**  
Wind sector  
market  
assessment



**PHILIPPINES:**  
Due Diligence  
on Rural  
Electrification  
Loan Fund



**CHINA:**  
Due Diligence  
on Smart Grid  
investment  
projects



**TAJKISTAN:**  
Due Diligence  
for  
Hydroelectric  
projects



**KYRGYZSTAN:**  
Grant Funding  
to 15MW  
solar-hybrid  
project



**SOUTH PACIFIC:**  
Due Diligence of  
distributed solar  
projects for 5  
island nations



**PAPUA NEW  
GUINEA:**  
Energy  
Efficiency for  
Municipalities

# GREENMAX IN ACTION



GreenMax team members Alexander LaBua (second from left) and Pavol Vajda (third from left) pictured with members of the Provincial Government of Hog Harbour village on the island of Espiritu Santo, Vanuatu, following a meeting with members of the community to discuss the introduction of a government-sponsored rural electrification program using solar home systems.



## Design of Sustainable Energy Finance Facilities in Mongolia and Vanuatu

- In Vanuatu, the GreenMax team supported design of the National Green Energy Fund to help the Government meet its rural electrification objectives. The team conducted fieldwork to solicit feedback directly from remote island communities to make recommendations to GGGI and the Government on appropriate off-grid solutions/business models and financial instruments for the NGEF to deploy.
- In Mongolia, the GreenMax team supported the Mongolian Banker's Association with preparation of a comprehensive business plan for the newly formed Mongolian Green Credit Fund, including provisions targeting renewable energy and energy efficiency improvements in Mongolia's residential off-grid ger market.



GreenMax team members John MacLean (far right) and Ioanna Bejan (second from left) pictured with Global Green Growth Institute staff in Ulan Bator, Mongolia.



# THE TEAM: PRINCIPALS



## **Clifford J. Aron, Founder & President**

Brooklyn, New York; Warsaw, Poland; Nairobi, Kenya

- 39 years experience in sustainable energy; 18+ years in emerging markets
- Advisor to WB, IFC, EBRD, EIB, KfW, USTDA, US OPIC
- Advisor to private investors and commercial banks
- Pioneer of ESCO industry in USA
- Founding President NY Energy Efficiency Council
- Director of Energy + Economic Development NYC
- Environmental lobbyist
- Congressional aide on EE policy

## **Jacek Kostrzewa, Co-Founder**

Warsaw, Poland

- 28+ years experience in sustainable energy
- Specialist in project finance, biofuels technology, wind energy, solar PV, CHP + EE policy and analysis
- Assignments for WB, IFC, EBRD, EFSE
- President of largest biofuels trader in Poland
- Manager, EC PHARE Multi-country Energy Program Unit in 13 East European countries
- Business Development Director, National Power, Poland
- Founder of the Polish Foundation for Energy Efficiency



# THE TEAM: REGIONAL MANAGEMENT

## **Dr. Albert Butare**

Manager, Africa  
Kigali, Rwanda



- 20+ years of experience in renewable energy
- Former Energy Minister of Rwanda
- CEO of Africa Energy Services Group Ltd.
- Vice Chancellor of the Academic Deputy of the Kigali Institute Science and Technology (KIST)
- Expertise in high-level public sector policy, project development and implementation including engineering

## **Cemal Parlak**

Manager, Turkey and the Caucasus  
Istanbul, Turkey



- Worked in development and financing of energy projects in Turkey for eight years
- Worked across range of clean energy technologies
- Expertise in strategic advisory for energy efficient upgrades in large industrial facilities
- Has developed bankable reports for financing of sustainable energy investments in the industrial sector

## **Dr. Vedran Uran**

Manager, West Balkans  
Zagreb, Croatia



- 10 years of experience in RE and EE with finance and engineering experience
- Prepared and updated country energy profiles of various Eastern European countries
- Managed the first comprehensive ESCO project in Eastern Europe
- Published over 40 scientific, professional articles in the fields of RE, EE, energy policy and economics

## **Andres Roi Riedel**

Manager, Latin America and Caribbean  
Santiago de Chile



- Director of ROI & ASOC
- Served as President of WBCO S.A; Former Chairman of the ULI Chile Country Council; Chairman of the ULI South America Council
- Former General Director of the development of Parque Bicentenario in Vitacura, Santiago
- Directed several urban and real estate studies
- Expert in advisory on RE and EE projects and investments, architecture, urban design, urban & regional planning and real estate analysis

# THE TEAM: SENIOR MANAGEMENT

## Valerio Cecchi

Transaction Advisory, Latin America  
Santiago de Chile



- 35 years of experience; one of the most accomplished leaders in Latin America's renewable energy sector
- 10-year tenure as President of Enel Green Power Latin America
- Grew EGP to operating more than 35 renewable energy plants in 8 countries with more than 700 MW
- Managed Suez Lyonnaise des Faux's activities in Argentina
- Fluent in English, Spanish, French and Portuguese.

## Ifechukwude Uwajeh

Transaction Advisory, West Africa  
Lagos, Nigeria



- 10 years of experience; 7 in Nigerian energy sector
- Negotiated Power Purchase Agreements (PPA) and Tariffs with Nigerian Bulk Electricity Trading (NBET) for IPP 300MW coal + 400MW gas power plants
- Arranged Partial Risk Guarantee (PRG) and senior debt and export credit insurance for a coal power project.
- Negotiated FIDIC based EPC contract (worth over US\$600mn) and Operations and Maintenance contracts.
- Negotiated Gas Sale and Aggregation Agreements (GSAAs) with the Gas Aggregation Company of Nigeria (GACN) and International Oil Companies (IOCs).

## Hezy Ram

Geothermal Practice Leader  
Tel Aviv, Israel



- 35 years of experience in corporate and project development in the renewable energy sector
- Pioneer of geothermal projects in the USA, Central America and Africa
- Involved in the development and construction of 15 Power plants, over 500 MW of renewable energy projects, and has raised approximately \$2 Billion in project financing
- Executive VP of Ormat Technologies, Founder of Ram Power
- Developer of 72 MW San Jacinto geothermal project in Nicaragua and 70 MW Akiira Geothermal Project in Kenya

## Stephen Casey

Chief Financial Officer  
Brooklyn, New York



- 19 years of senior-level experience: CFO for Ocuco, a software development company, Finance Director for EMEA Corporate, Director of IMS MAXIMS Plc. Corporate Finance Director for an Ireland-based Internet company
- Developed international tax structure and due diligence for acquisitions
- Certified Public Accountant, a Fellow of the Chartered Certified Accountants in the UK and an Associate of the Institute of Taxation in Ireland
- L.L.M. in International Commercial Law; Advanced Diploma in Corporate Finance; and an M.B.A. in Finance

# THE TEAM: SENIOR MANAGEMENT

## William Cavers

Fund Management Practice Leader  
Brooklyn, NY



- 30-year career in Energy and infrastructure investments and credit/risk analysis
- Principal in Power and Energy fund at TCW
- Co-Lead Underwriter at U.S. Department of Energy on two \$1.2 billion solar project loan guarantees
- Led BrightSource Energy's effort to raise non-recourse loans for two 500 MW concentrating solar plants
- Senior Project Finance Officer for TD Bank/TD Securities,
- Associate Director of the Infrastructure and Specialized Funds Group of Macquarie Securities,
- Vice President and Transaction Manager at GE Energy Financial Services
- B.A. in Political Science MA International Relations from the Fletcher School of Law & Diplomacy; M.B.A. in Finance from the Ross School of Business at University of Michigan.

## Alexander LaBua

Manager, Consulting Group  
Brooklyn, NY



- 8 years of experience in the clean energy sector
- Leads GreenMax's Consulting Group business development and operations
- Manages large scale donor funded multi-country assignments in Africa and Asia
- Led GGGI project to select target countries for National Green Energy Funds
- Managed design of the Vanuatu National Green Energy Fund
- Supervised data collection for World Bank RISE program in 17 African countries
- Project Coordinator of Market Assessment in 19 West African countries for the World Bank-ECREEE Regional Off-Grid Electrification Project (ROGEP)
- M.A. Sustainable Energy Management & Policy, Columbia University – School of International and Public Affairs



Thank You!

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