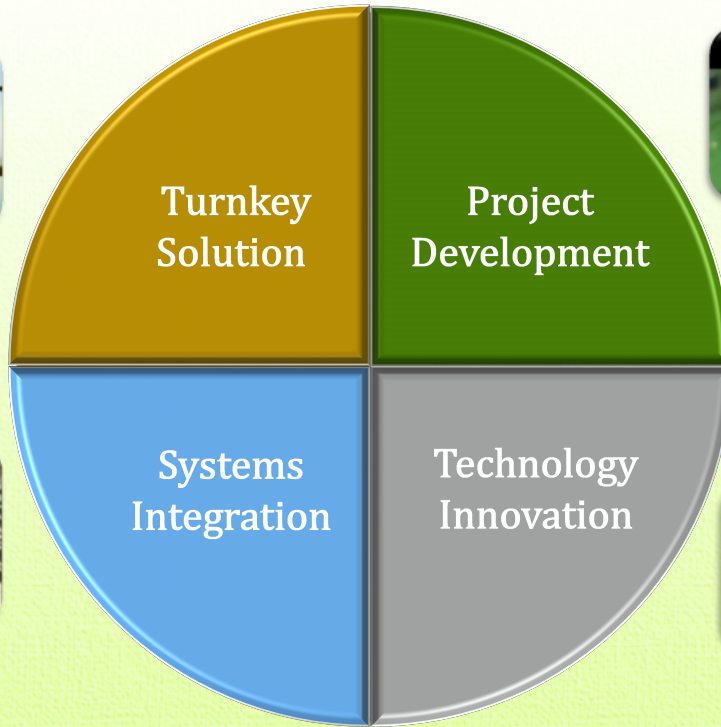


Green Energy Holdings Limited Profile



To create a **cleaner** and **brighter** future for the world



Green Energy Holdings (Pty) Limited

<http://greenenergyholdings-group.com/>

ABOUT US

Green Energy Holding Limited (“Green Energy”) is an integrated independent solar power producer, delivering affordable, rapidly deployable and sustainable source of clean energy in Africa. Its base office are in Johannesburg and Pretoria South Africa. A long term player, Green Energy Holdings develops, finance s, builds, owns, operates and maintains solar power plants, and already has an a number of Projects in Southern Africa. With an established base in South Africa, Green Energy Holdings is growing briskly with a project backlog and pipeline of more than 500MW under development

Green Energy Holdings focuses on utility scale Solar projects. We currently have projects in both the operational and construction phases as well as a large pipeline under development. Green Energy Holding drives the African strategy. develops and builds large solar photovoltaic utility projects across the globe. Green Energy has developed and secured an exciting pipeline of sustainable, quality energy investments thanks to the expertise of our team of seasoned energy investment professionals who believe in contributing to inclusive economic transformation

Green Energy consists of a team of industry leading professionals with expertise in every aspect of project development. Green Energy’s goal is to offer the opportunity to invest in solar photovoltaic plants providing all necessary services for individuals, corporations and investment funds, to identify, validate, finance, execute and operate solar photovoltaic projects.

Green Energy always ensures the best return on their investment, thanks to its integrated project planning, EPC, quality control , monitoring and O&M (operation and maintenance). Green Energy is an upstream and downstream vertically integrated company, present in all activities in the PV solar plant value chain including manufacturing of PV solar modules and other products. This integration allows Green Energy to provide a full range of highly competitive services from complete turnkey project solutions, to EPC contracting, design, engineering and testing and even our own in-house component design and manufacturing capability (PV Hardware).

INVESTMENT APPROACH IN AFRICA

Africa is a continent of vast untapped potential solar energy harbouring exciting investment opportunities, particularly in the energy sector. An influx of foreign investment into Africa is pointing towards a new era of growth and development and today the rate of return on this investment on the continent is higher than in any other developing region. Green Energy is focusing on the remarkable opportunities to build the energy sector into the cornerstone of Africa’s economic growth. South Africa generates about 34 Gigawatts of electricity annually but it is not enough!.

The total electricity generation of Africa is approximately 160 Gigawatts and it is estimated that by 2030, South Africa will need 85 Gigawatts of power and Africa 610 Gigawatts (International Renewable Energy Agency Report – 2015). The provision of sustainable energy attracts and promotes the industrialisation of a region or country and has a multiplier effect on its economy resulting in job creation and a reduction in poverty which is exponential – energy production being the fastest growing sector in the economy and will need investment in order to unlock its true potential

DEVELOPMENT

Green Energy develops and constructs solar power plants for long term ownership. We have track-record of developing and constructing projects close to 600 MW.

We identify areas that are suitable for the development of future projects and liaise with land owners to enter into contracts for the purpose of securing development rights for further feasibility studies. Green Energy undertakes an in depth analysis of the environmental opportunities and constraints for all potential projects. This allows for the early identification of environmental concerns that need to be addressed. If the potential impact is high, then specialist opinion is often sought to determine whether the project should continue.

Energy Resource Assessment: Accurate resource assessments are crucial to the successful development of solar and wind facilities. Green Energy's engineers perform computational analyses and gather onsite data to identify sites with excellent energy generation potential.

Green Energy acquires all the necessary permits. Renewable energy projects span several different government departments and municipal regulations and there are numerous permits that are required. We identify significant permit or policy risks and manage these in order to execute the projects within very restrictive time frames.

Through legal consultants Green Energy provides general legal support to the Green Energy as the project interface, responsible for coordinating research and studies, site identification, permitting and environmental impact assessments, regulatory requirements, ensuring the submission of compliant bids and financially closing successful projects.

FUNDING

Green Energy invests project developments funds for feasibility to bring the project bankability. For these projects to be bankable a lot of development funding is required.

Raising project finance capital: Green Energy acquires the financial resources by bringing together relevant stakeholders to raise debt, equity and any other funding.

Project funding is readily available with banks having a huge appetite for projects in the rest of the continent.

IMPLEMENTATION

Green Energy is involved in selecting the land, technological components, modules, inverters, structures and materials most appropriate to a specific project, all at highly competitive rates. The company provides a full end-to-end service package and guarantee the performance ratio of the plant.

Green Energy offers the client various configuration options and assists them in identifying the best solution. Based on previous experience they can additionally prepare all the necessary documentation to obtain project financing.

Green energy guarantees all the EPC work it performs and partners with expert local companies to enhance the delivery from a quality and time management point of view.

OPERATIONS & MAINTANANCE

Green Energy operates and maintains all of its power plants and to selected third party owned plants. Green Energy has an industrial approach to ownership of the power plants and operation and maintenance is key to secure control and maximise performance. Green Energy guarantees the performances and delivery of the power production for the plants it builds and operates. This is to ensure the right amount of power as planned during the feasibility stage is to be delivered.

LOCAL CONTENT

Local job creation during peak construction period for the projects in key in creating jobs and local entrepreneurship. Green Energy has a policy to employ and train young artisans in all the projects it builds. As a proud organisation headquartered in South Africa and with African interests, Green Energy aims to invests in its communities and works to establish a foundation for success and longstanding sustainability. Green Energy envisions this to be in the form of: skills training, access to reliable energy, education, health care and increased infrastructure and enterprise development.

VALUE CREATION

Green Energy has established a track record for delivering predictable and affordable supply of solar electricity. During 2017-2019, 3 new solar plants will be constructed in South Africa, Malawi and Botswana bringing innovation and values to all the stakeholders involved. Built under a number of programmes including bidding and own developments.

The three solar plants in will generate over 400 million kWh of electricity annually to serve the needs of about 200,000 households. These projects are a minimum 20 year power purchase arrangements. These are assets being created to benefit all our shareholders and investors.

Geer Energy aims to deliver value to its investors financially and to stakeholders and community through job creation and economic developments. African economies are growing at a faster rate and so are the needs to create jobs.

PARTNERSHIPS

Green Energy seeks investors from around the globe to be international partners and work together to develop funds and implement projects. Green Energy also focuses on local developers seeking an experienced and bankable international partner. Below you will find a summary of Green Energy's proven partnership approach for successful implementation of solar projects.

Highly experienced solar power producer (IPP) - With a focus on new and emerging markets. We possess broad international experience from successful development of more than 300 MW of solar PV plants across in Africa continents,

“One-stop shop” partner – With a flexible integrated business model Green Energy incorporates all aspects required to bring solar power to the market; business and project development, financing, construction, ownership and operations of solar power plants. This also makes the company independent of equipment supplier.

Financial track-record and unique partnership - Solid track record of raising more funding for projects in non-recourse finance through strategic partnerships with global, regional and DFI financiers.

A proven early mover – Green Energy has repeatedly demonstrated unique abilities as an early mover in new emerging markets. E.g: South Africa, Malawi, Swaziland ,Namibia and Botswana.

BENEFITS TO STAKEHOLDERS

Green Energy's vision is to improve its common future, Green Energy projects always seek to create benefits for all relevant stakeholders.

Some of the key benefits are as follows;

Social responsibility – We develop partnerships for improving the future of local communities close to our solar plants in the countries we operate.

Local content – Promote value creation and facilitate transfer of know-how by working with local suppliers and contractors, as well as hiring and training local workforces for execution and operation and maintenance.

Carbon finance – Successfully looking at registering a CDM Programme of Activities (PoA) with the aim of securing additional revenues from carbon reductions from all eligible projects.

OUR MARKET FOCUS

Green Energy is focused on developing Africa. Africa is where the opportunities because of its growth potential. Africa has abundant renewable energy resources.

Traditionally reliant on hydropower, the continent is increasingly turning to solar photovoltaics (PV) to bolster energy security and support rapid economic growth in a sustainable manner. Solar PV module prices have fallen by 80% since the end of 2009, and PV increasingly offers an economic solution for new electricity generation and for meeting energy service demands, both on- and off-grid.

New capacity additions of solar PV in Africa in 2014 exceeded 800 MW, more than doubling the continent's cumulative installed PV capacity. This was followed by additions of 750 MW in 2015. By 2030, there is a predicted doubling of the share of renewable energy globally. Africa could be home to more than 70 GW of solar PV capacity. Green Energy's focus is on South Africa, Southern Africa and Africa as a whole.

Related Services



We provide a full end-to-end service package and guarantee the performance ratio of the plant. Green Energy offers the client various configuration options and assists them in identifying the best solution. Based on previous experience we can additionally prepare all the necessary documentation to obtain project financing. Green energy guarantees all the EPC work it performs and partners with expert local companies to enhance the delivery from a quality and time management point of view.

Excellent commercial solar power plant requires excellent design and rigorous construction high quality. It also requires excellent Smart operation and maintenance management for up to 25 years.

We can realize excellent solar power plant, intelligent management, intelligent operation and maintenance of power stations.

Related Services



The importance of Solar power plant operates & maintains is self-evident. Smart operates & maintains takes the fine monitoring system as the core, relies on the wisdom management platform to access all kinds of data of Solar power station, and carries out intelligent management and analysis through modern Internet of Things technology and big data analysis technology to quickly solve the problem of poor power station and ensure the reliable operates & maintains of the power station. Achieve seamless operation and maintenance docking, and realize intelligent operation and maintenance through a smart management platform to ensure safe and efficient operation of the power station for 25 years.

Green Energy operates and maintains all of its power plants and to selected third party owned plants. Green Energy has an industrial approach to ownership of the power plants and operation and maintenance is key to secure control and maximize performance.

We firmly believe that intelligent operation and management is to ensure the long-term value of commercial solar power plants.

Related Services

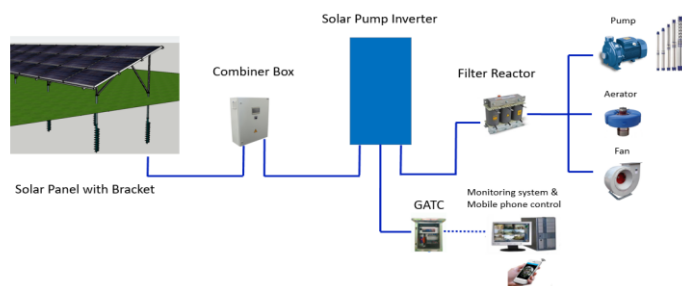


We have been dedicated to developing water pumping solutions with solar energy technology. A superb product solution only by solar energy is designed to the applications of 0.75~150HP water pumping systems. No battery needed brings environmental friendly. With solar energy brings environmental sustainability. Our product provides fresh water with solar energy which will be able to bring more welfare to your life.

Application Fields: irrigation water pumping, livestock water pumping, drink water pumping (for communities or utilities) esp. at off-grid area.

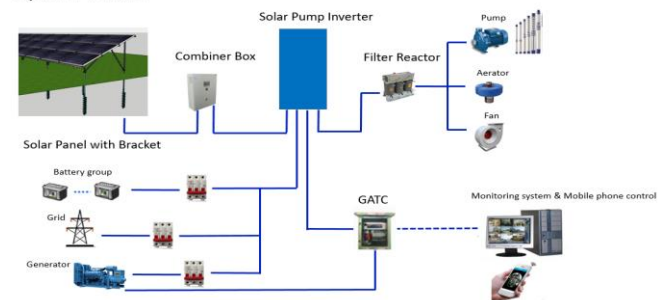
Solar Water Pumping System (I)

- Solar power only



Solar Water Pumping System (II)

- Hybrid +GATC





Micro-grid planning and application:

Micro-grid overview

The micro-grid system is a Power generation and distribution system that can achieve self-control, protection and management according to the predetermined target. It can be combined with the external grid to run the micro-grid that forms the Internet, or it can independently operate the self-constructed independent micro-grid. The energy storage system is an indispensable unit in the micro-grid, which realizes the internal power balance of the micro-grid, provides stable power for the load, improves the reliability of power consumption, and realizes seamless switching between on-grid and off-grid.

Application

1. It is suitable for areas where the external power grid is often unstable (such as hospitals, factories, buildings, industrial plants), The networked micro-grid is applied to multi-functional complementary, Spontaneous self-use .
2. It is suitable for independent micro-grid such as off-grid areas and islands. We can supply 5~1000kW (Or larger) independent solar photovoltaic energy storage equipment.

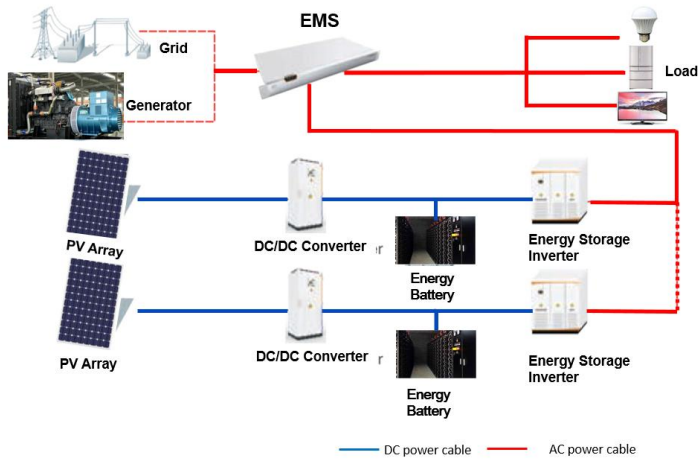
Features advantage

1. We have the best solar photovoltaic energy storage system design, advanced energy conversion technology and world-class lithium battery energy storage technology.
2. Modular design and flexible configuration. Can be expanded at any time according to demand
3. With on-grid and off-grid seamless switching function.
4. Supports on-grid priority, micro-grid priority and parallel operation mode to save fuel.

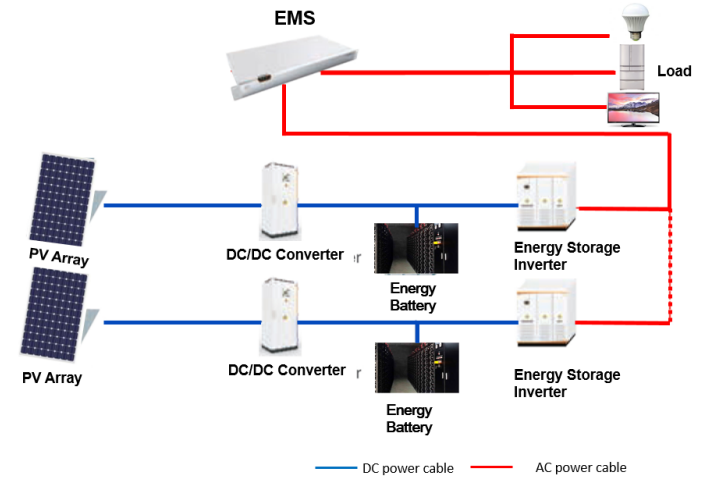
Related Services



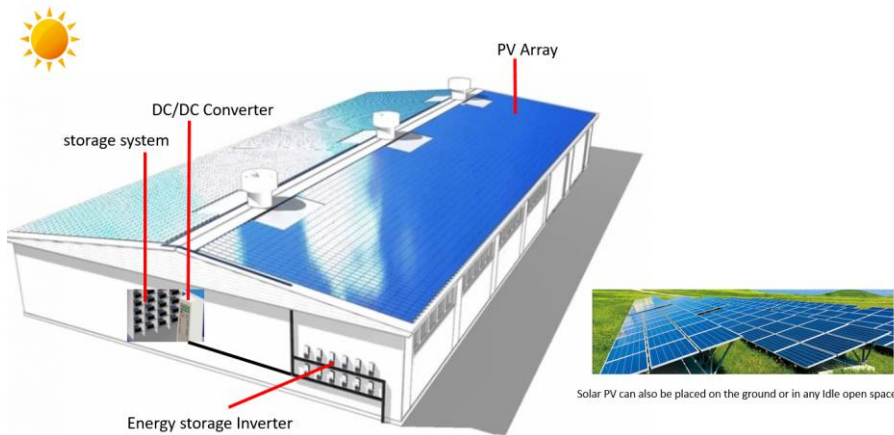
A Type --- On-grid System Structure Diagram



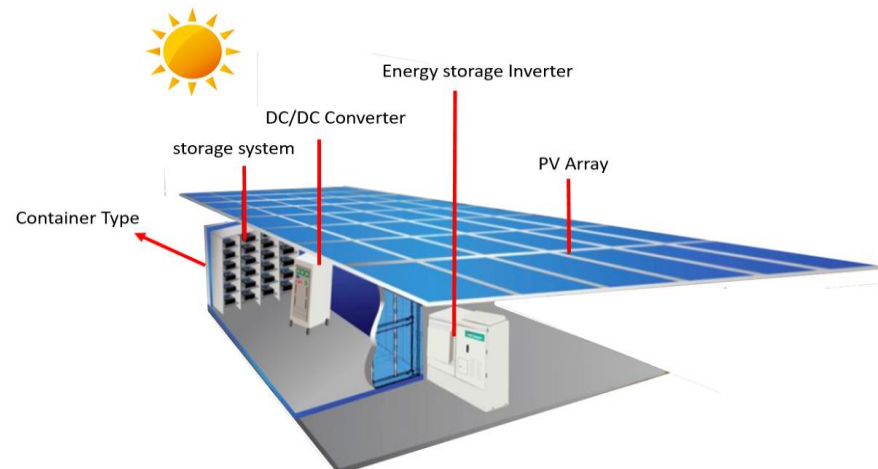
B Type --- Off-grid System Structure Diagram



A Type --- On-grid Setting Schematic diagram



B Type --- Off-grid Setting Schematic diagram



PROJECTS UNDERTAKEN

SOUTH AFRICA

Development, funding, construction and operations of a portfolio of 200MW -300MW solar PV Projects under an IPP programme including manufacturing of solar PV modules in Ekurhuleni Metropolitan



PROJECTS UNDERTAKEN

Swaziland



Sikhuphe Power Station 30 MW Solar Generating Project. Undertaking development by Green Energy Holdings group of Swazi Green Power. Its Site locates bear by the King Mswati III international airport.



PROJECTS UNDERTAKEN

MALAWI



Green Energy Holdings Consortium undertaking development and Implement
Which Its one of be selected
The qualified of obtain the Malawi Electricity Supply Corporation
(ESCOM)international bids for supply of 80 MW Solar Photovoltaic Power
Projects .

which obtained the tender of international bid project.



PROJECTS UNDERTAKEN

BOTSWANA



GEH EPC Consortium be selected qualified and short list of Botswana Power Corporations (BPC) of 100 MW bid projects .Tender NO 2158/17



Please contact details team of the Green Energy Holdings EPC consortium .

<http://greenenergyholdings-group.com/>



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