

# AFRICA GREEN ENERGY TECHNOLOGIES

Company Profile





# **ABOUT US:**

Africa Green Energy Technologies (AGET) is a private company established in 2011 in Cape Town, South Africa, with associate offices in London and New York. Our team consists of highly experienced engineers, scientists, consultants, international partners and Investors. With our leading innovative green technology solutions, AGET is specialised in the development of renewable energy, water purification, agriculture and infrastructure related projects.

#### Mission:

Our mission at AGET is to provide our clients with efficient, cost-effective sustainable energy and clean water production solutions, that are both economically and environmentally beneficial.





# AREAS OF EXPERTISE:

# **Energy Projects**

Solar power, Wind power, Biogas plants, Biomass plants, Cool Surface Paints, Green Hydrogen power.





# **Water Projects**

Waste water treatment plants, Seawater Desalination Plants, Water Purification plants.



# PRODUCTS & SERVICES



# **Solar Power**

AGET is focused on providing innovative and efficient solar technology, such as our **Agrivoltaics and Solar tracker systems**, with the contributions of our scientists and international partners AGET is able to supply affordable and reliable sustainable solar energy to our clients.



# Green Hydrogen

We're leveraging our proven **Hydrogen fuel cell technology,** to generate carbon-free electricity. We offer complete installation services for our systems by our Engineering, Procurement and Construction (EPC) team.





# **SOLAR POWER**

#### **Dual Axis Solar Tracking Technology:**

AGET in partnership with Mechatron Solar Inc. based in California USA aims to bring Mechatron dual axis solar tracking technology to the African green energy market.

Mechatron solar trackers include: gearless azimuth trackers and gearless dual-axis trackers, which are designed to maximize performance with a lower operations and maintenance cost than other commercially available tracking systems. They have been successfully tested under different climate conditions, rate structures constitute the best available solution for photovoltaic plant installation.

Our flagship M18KD tracker is designed to maximize performance in any climate and terrain condition, ranging from open desert to heavy snow including geographically constrained sites.

Mechatron's trackers incorporate gearless, hydraulic motion drives that enable extremely high rotational accuracy, enhanced by an advanced astronomical algorithm software platform.







# **SOLAR POWER**

#### Agrivoltaic solar power solution:

Climate change is shedding light on the vulnerabilities of our food, energy and water systems, as well as the importance of building innovative solutions and flexibility in our energy and food production methods.

Agri PV or **Agrivoltaics consists of integrating PV modules above the crops** in order to enhance climate resilience and allow sustainable food and energy production on one single piece of land. While in the past it was a question of either food or solar energy production on farmland, **Agri PV can combine the two successfully, as well as achieve greater efficiency in both activities.** 

AGET aims to combine utility scale solar PV electricity generation projects with Agrivoltaic solutions. These solutions offer the following benefits over conventional utility scale projects:

- Increased access to clean electricity in remote areas
- Increased crop yields
- Allows existing agricultural activities to continue with minimal interference to the ecology
- Facilitates introduction of new crops in regions where macroclimatic conditions don't allow cultivation
- Provides Shelter for livestock
- Water harvesting and enhanced water management





# **GREEN HYDROGEN**

Green Hydrogen can access several value streams, which range from providing electricity grid services, to industry, agriculture and transport use. The value chain can be split into 4 categories: Production, Storage, Distribution and Consumption.

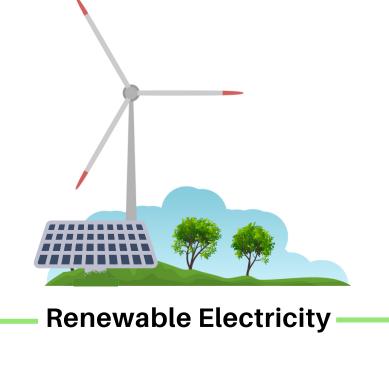
#### Benefits of Hydrogen fuel cells:

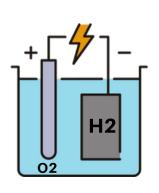
- Reduced greenhouse gas emissions
- High Reliability
- Flexibility in installation and operation
- Development of renewable energy resources
- Reduced demand for foreign oil
- Improved environmental quality

#### **Applications of Green Hydrogen:**

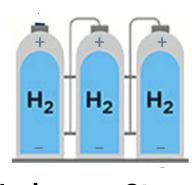
- Electricity
- Heating and Cooling
- Portable and Emergency Backup Power Generation
- Ammonia, fertilisers and other Chemical Industry applications
- Petroleum refining
- Transportation(buses, trains, ships, trucks)
- Warehouse Logistics, Material handling and stationary
- Global Distribution

#### **Hydrogen Production Process:**

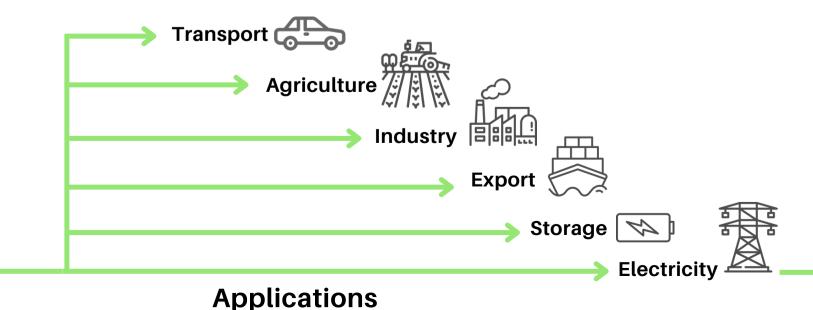




**Electrolyzer** 



Hydrogen Storage innovation





# **GREEN HYDROGEN**





AGET's R&D programme involves the development of novel Polymer Electrolyte Membrane (PEM) electrolyser electrode assemblies and systems. It utilises existing intellectual property that has been developed by our scientest Dr Shiro Tanaka, one of the world's leading experts in hydrogen- and battery-related electrochemical applications.

# The Green Hydrogen Production facility will have the following dedicated installations:

- 600 MW Solar PV Array with Single Axis Tracking
- 600 MW Wind Turbine Complex
- 6.8 ML/day Sea Water Desalination Facility
- 1 GW Polymer Electrolyte Membrane Electrolyser
- Power Transmission lines and infrastructure (Substations, etc)
- Hydrogen conversion facility to convert hydrogen to the required form (I.e. Liquid Organic Hydrogen Carrier, methanol, etc)
- Hydrogen will be transported via truck, rail, or pipeline to customers in Senegal and neighbouring countries



# OTHER PROJECTS & SERVICES

Water purification and recycling systems are able to recycle up to 90% of water usage in industrial and domestic contexts. Desalination and waste water treatment facilities will be constructed at an economically viable production scale, and containerised solutions will be considered to allow assembly offsite and rapid deployment.

#### **Wastewater treatment Plants**

The wastewater treatment facilities convert wastewater into potable water that can be discharged back into the environment and safely used for consumption, agriculture and industry.



## **Desalination**

Our Desalination process uses reverse osmosis (RO) technology to remove salt and other contaminants and impurities from seawater to produce potable water.





# OTHER PROJECTS & SERVICES

# **Biogas plants**

Our biogas plants facilities convert biodegradable waste into sustainable energy and biofertilizer for agriculture.



# **Biomass plants**

The Biomass plants use organic waste materials such as agricultural and forestry residues, as well as waste from industry and farms as fuel to generate renewable energy.





# BENEFITS TO OUR CLIENTS:



#### **Innovative Green Technology and Specialist Team:**

Our teams expertise and experience in management and science combined with our sustainable technology solutions, gives our clients the opportunity to become leading players at the forefront of the GreenTech market.



#### **Socio Economic and Financial Benefits:**

Renewable energy and water purification services are crucial to human well-being and to a country's economic development.



#### **Job Creation:**

Development of renewable energy technologies and infrastructure has the potential to create a substantial number of new jobs.



# \$

#### **Reducing Carbon Emissions and Air Pollution:**

Governments and corporate entities can dramatically reduce their carbon footprint by using renewable energy sources to power industry and agricultural activities.

#### **Increased Energy Access and Lower Energy Costs:**

Making renewable energy more accessible improves energy efficiency and can help stabilize electricity prices and volatility.





#### AGET contributes to 7 of the 17 UN Goals.

6 CLEAN WATER AND SANITATION



Our Wastewater and Desalination projects ensures the availability of clean water, for domestic, agricultural and industry utilization in water stressed countries.

7 AFFORDABLE AND CLEAN ENERGY



We are focused on providing access to affordable, reliable, renewable energy. Reducing the lack of access to electricity and lowering fossil fuel consumption.

B DECENT WORK AND ECONOMIC GROWTH



Through the development of our projects we promote sustainable economic growth and productive employment.

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



Our innovative green technology and sustainable infrastructure, fosters renewable production within the energy industry. SUSTAINABLE CITIES AND COMMUNITIES



We are actively making communities safer and more sustainable, through the provision of renewable electricity and clean drinking water.

13 CLIMATE ACTION



We are taking action towards climate change solutions, in preparation for an inevitable future and the economic impact it will have on developing countries.

7 PARTNERSHIPS FOR THE GOALS

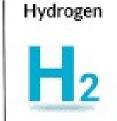


Through our strong partnerships with governments and companies, we continuously strive towards a unified goal, for a more enriched and sustainable Africa.













# **OUR PARTNERS:**

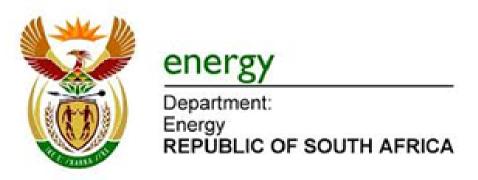














# **CONTACT US:**

# info@agetholdings.com

A . I .	•
<b>Anthea</b>	

Ms. Anthea Lewis
Chairperson
Cape Town, South Africa

### **Pavel Parks**

Mr. Pavel Parks
CEO
Cape Town, South Africa

## Dr. Fawzy Basardien

Mr. Fawzy Basardien Managing Partner Cape Town, South Africa

## Cobus van der Merwe

Mr. Cobus van der Merwe Managing Partner Cape Town, South Africa

#### **Dr Shiro Tanaka**

Mr. Kumar Wijayaraja Managing Partner Tokyo, Japan

## **Alassane Seck**

Mr. Alassane Seck Managing Partner New York, USA

## Kumar Wijayaraja

Mr. Kumar Wijayaraja Managing Partner London, UK