

ENERGY PARTNERSHIP

AKWIDAA DEVELOPMENT PROJECT
GHANA, WEST AFRICA

Akwidaa:
a small fishing
village in Ghana,
stands at the
crossroads of
rural poverty
and the global
economy.

Harnessing it's
abundance of
renewable
energy can drive
local economic
growth and
development.



Empowering Sustainability

Akwidaa Community Energy Partnership

The Akwidaa Development Project (ADP) is a U.S. 501(c)3 non-profit organization formed to assist the community of Akwidaa in Ghana in developing it's local economy and infrastructure.

ADP founders have been living and working in Akwidaa since 1988, and have been asked by the local elders to help bring electricity to the community to provide power to the local school and health clinic.

Recognizing the value of renewable energy in driving local community growth, ADP has structured a Community Energy Partnership to meet this need.

The focus of this Partnership is to balance renewable energy technologies with local support and participation, so that the donated equipment becomes part of the community's own efforts to provide clean electricity and related services.

Through the help of ADP's Donors, Technical Partners and Akwidaa's local leaders, the first Renewable Energy Systems will be installed at the local School and Health Clinic to engage local participants and provide much-needed services, including clean water generation, electric lighting and Internet connectivity.

ADP invites donors, sponsors and volunteers to join the Community Energy Partnership and provide the resources and enthusiasm that will ensure the success of this joint effort.

Internships and exchange programs will be available to students and professionals who wish to visit Akwidaa in Ghana, as well as host the visits of students and professionals from Akwidaa to the USA.

Please contact ADP for more information on how you can become part of this effort and make a difference in the lives of those who call Akwidaa home.

Building Capacity: Community Energy Cooperatives

We live in the midst of small revolutions taking place every day around the world - led by non-celebrities and unknown heroes who strive to work miracles within their own communities. Contrary to the belief that Africa lacks leadership and expertise, there are millions of change agents of all ages living in small communities who continually seek to improve their conditions and prospects whenever the opportunity arises.

Akwidaa, like many small communities, stands at the crossroads of rural poverty and globalization. Imbued with talent, intelligence and a willingness to work toward the common good, they possess all the essential ingredients for sustainable growth and development. In Akwidaa, Poverty is measured only by its conventional indicators, and not by the extraordinary desires and abilities of its members.

Renewable Energy is inherently empowering, and has the potential to magnify these community qualities and energize local economies. There is nothing that communities cannot learn if given an opportunity, and no technology has greater impact than when it becomes their own.

The Akwidaa Development Project is organized to introduce Renewable Energy technologies from the “inside out” with an emphasis on local training and support in order to transfer skills and build capacity for future growth and development.

“The energy of the future is already here - it’s all around us waiting to be harnessed to power the imagination and aspirations of millions of people who live, work and contribute toward growth and prosperity within their own, local communities.”

In addition, the availability of electricity can also be organized as a service-model in the form of a local Energy Cooperative, in which community members become “prosumers” - both producing and consuming electricity within their community.

The advantages of this include fair-pricing models, consensus-building, and greater resource transparency with collective accountability. Those who cannot afford to pay initially can still be served in order for their productivity to increase which can improve their economic circumstances.

“Energy for All” becomes the goal when energy is seen as a Service rather than as a Commodity, and when electricity is used as a catalyst for growth rather than a burden of debt.

The Akwidaa Energy Cooperative will become a model for thousands of other small communities in Ghana and across Africa - sparking one small revolution after another that leads toward energy independence and sustainable economic growth.

A band of local change-agents preparing to start a small revolution of their own in Akwidaa.



Smart Energy Solutions

Integration is the key to unlocking the potential of Renewable Energy

While the world is experiencing a renewable energy revolution, most small communities in developing countries still struggle to afford the high cost and complexity associated with Wind and Solar technologies.

In addition, Wind and Solar are not “stand-alone” solutions, since the sun only shines during the day, and the wind does not follow predictable patterns. By integrating Wind and Solar together, the strengths of each one are combined.

The Dyocore 1kW Microturbine is the first small wind turbine to integrate wind and solar production together into a single, plug-and-play appliance optimized for low-wind speeds common at the rooftop level. The solar film provides a daytime energy boost to the wind turbines when winds are usually lowest in the afternoons.

These Hybrid Wind+Solar Units are designed as the building blocks of local energy independence, to make the most out of available sun and wind resources.

In addition, multiple units can be clustered together to create 3kW, 5kW or even 20kW systems that can scale-up to meet the needs of each community.



The Dyocore 1kW Microturbine has been designed to meet the energy challenges of rural communities across Africa.

The first small wind turbine that features Solar Thin-Film integrated into the tail-fin, it provides electricity from both Solar and Wind in a single, easy-to-install system.

Weighing less than 40 pounds, these micro turbines can be mounted directly on rooftops, or clustered together on poles to create mini wind farms to power entire communities.

Starter Kits are designed to be simple and affordable, and include an integrated Battery Storage System that can store the electricity from the turbines until it's needed within the community.

By integrating Wind+Solar+Storage together, a steady and reliable supply of clean electricity can power communities without any connection to the utility grid.

These innovations, combined with reduced manufacturing and production costs, bring Renewable Energy within

reach of small communities and provide an opportunity for local residents to become trained in the installation and ongoing operation of their community energy systems.

Higher performance, greater reliability and lower costs are the benefits of Technology Integration, which can be delivered to communities of all sizes to help empower local economic growth and sustainable community development.



Ecolobue Water Generators use the sun's energy to condense humidity in the air to create clean drinking water.

Clean Drinking Water:

Turns out, the best water on Earth is in the air!

While creating electricity is valuable, it's what you can do with electricity that is most exciting! Unlike coal, diesel or natural gas, energy from the Sun is not only clean, but free.

With free energy from the Sun, the resource challenge of securing water becomes simple and cost-effective.

Most communities get their drinking water from a well in the ground, which may be polluted or scarce depending upon the time of year. But it turns out the best water on Earth isn't on Earth at all - but in the air all around us.

Ecolobue utilizes advanced technologies to condense and filter the humidity in the air to create clean drinking water using the free energy from the Sun. This changes the way communities think about water - no more long walks to refill water jugs, and no more contaminants or bacteria in the drinking water for children and patients.

Ecolobue Water Generators can produce from 30 to 5000 liters every day using electricity generated by wind and solar systems. Since the Sun is free, then producing clean water also becomes free once the renewable energy equipment is installed.

With the Sun's abundance, clean electricity and water can be available to every mother, father and child, every day of the year for generations to come.



**EDUCATION IS THE KEY
TO THE NEW GLOBAL ECONOMY,
CENTRAL TO DEVELOPMENT,
SOCIAL PROGRESS AND HUMAN FREEDOM**

**- KOFI A. ANNAN (Ghana)
Former U.N. Secretary General**

Information and Communication Technologies (ICTs) are transforming education across Africa, but lack of electricity keeps 80% of schools, including Akwidaa, in the dark.



Communications & Connectivity:

Knowledge-Sharing and Educational Exchange

Nowhere in the world is the Digital Divide so pronounced as in Africa. While most countries work to connect rural communities to the Internet, most African countries can't even provide communities with basic electricity.

For education, the power of Renewable Energy is measured not in volts and watts, but in what electricity can power in the hearts and minds of teachers and students. Clean energy from the Sun can bridge the Digital Divide in a single day, powering Computers and Communications that connect teachers and students to the global economy that awaits them.

While the technologies, tools and devices are important at first, we must remember that education is a human process, not a technological one. Human teachers are still the most effective agents of knowledge transfer and should be supported, not replaced, by technology. These systems are designed to support teachers in their critical roles by connecting them to other teachers around the world and giving them access to content and curriculum material that have real value within their schools and communities.

Traditional learning formats such as print and media-based learning are also supported via Internet-radio broadcasts and educational DVDs. These formats have the added benefit of reinforcing minority languages and local dialects as vehicles for educational transmission, while computer-based formats prepare students for the global opportunities ahead.

These tools also extend beyond the traditional classroom to provide continuing education to adults, and vocational training for workers in a full-range of interactive and traditional formats. The need for education does not stop at primary school, but continues on as communities reach out and connect to the world around them.

Knowledge Exchange: Pathways to Sharing

Knowledge transfer is at the heart of the Participation Age and is ushering in new models for Agriculture, Healthcare, Renewable Energy, Transportation and Financial Services that are taking root in the developing world.

School-based communications systems open the door to students, teachers and professionals who want to share their knowledge and skills but cannot physically travel to Akwidaa. Through video-conferencing using Skype and other free tools, these individuals can schedule workshops and clinics to share expertise and strategies to local community participants.

But the door swings both ways - enabling community members to share cultural knowledge with others around the world, giving outsiders an "inside view" of life in an African community. This bridges not only the Digital Divide, but the Cultural Divide as well, fostering respect and understanding between the many branches of our human family.

Renewable Energy Starter Kits

The Building-Blocks of Community Growth

12kW Wind+Solar+Storage System: \$30,000

- 10 x Microturbines w/Integrated Solar
- 12 x Deep-Cycle Gel Batteries
- 3 x Charge Controllers & Meters
- 3 x DC-to-AC Inverters & Cabling

Clean Water+Lighting Kit: \$10,000

- 5 x Air-to-Water Generators
- 3 x Water Filter Packs (1-year supply)
- 6 x Indoor Lighting System Packs
- 3 x Outdoor Lighting String Packs

Classroom Connectivity+Media Kit: \$10,000

- 3 x Laptop Computers + WiFi + Printer
- 3 x Digital Cameras/Media Devices
- Satellite Internet Dish & IP Router
- TV & Educational DVD Library

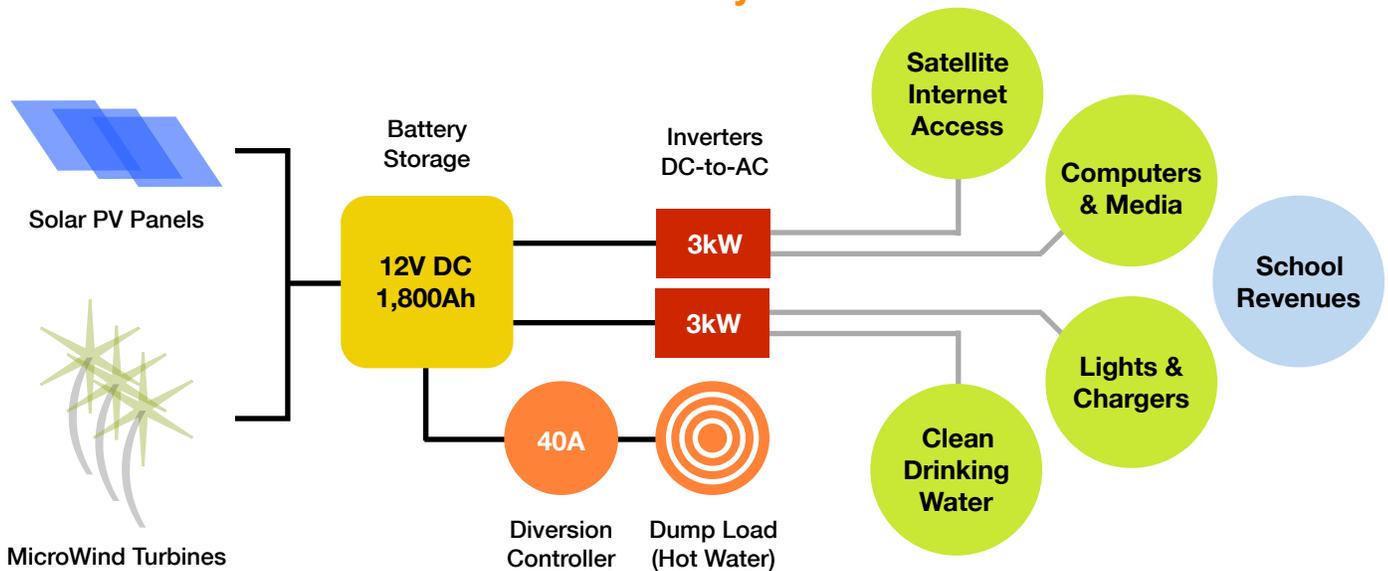
ADP Team Travel+Training+Logistics: \$30,000

- Installation & Local Technical Training
- Classroom & Community Program Development



Microturbine Clusters provide a starting-point for Community Energy Capacity and allow for local job creation and training.

Integrated School System: “Sun-to-Services” Model for Sustainability



Free energy from the Sun powers Water, Lighting and Communications - enabling the School to provide valuable services to the community, establishing revenues to sustain local School Programs.

Akwidaa's future is built upon the hopes and dreams of almost 1,000 children who are eager and willing to face the challenges ahead.

What role can you play in helping them succeed?



Shaping the Future

Donors, Sponsors and Partners

There are many ways to make a meaningful contribution toward a more sustainable future for the community of Akwidaa.

Donors play an important role of providing development funds to build local infrastructure. These funds can be donated to the ADP General Fund to accelerate the installation of equipment and technical training workshops.

Sponsors may choose one or more components to support with their time and money, providing not only the funds to build local

projects, but also the time to provide ongoing training and support by visiting Akwidaa or interacting via the Internet.

Partners take on a longer-term role by focusing their efforts on Community Programs that are driven by the Renewable Energy infrastructure put into place by Donors and Sponsors. Partners become the “feet on the ground” for Donors and Sponsors to strengthen relationships and provide continuity for local services and programs.

In addition, the gifts of time and knowledge can be as valuable as money, and students and professionals are encouraged to personally visit Akwidaa to become involved in local service and training programs that help build capacity.

No matter how you make your contribution, you will be welcomed into the community of Akwidaa as a friend, and your own life will be enriched as much as those who benefit from your help to shape a brighter future.

AKWIDAA DEVELOPMENT PROJECT:

P.O. BOX 282
GRASS VALLEY, CA
95945 USA

501(C)3 TAX ID#: 39-2073313

EMAIL: ADP@AKWIDAA.COM
WEB: WWW.AKWIDAA.COM