



## **Our Efforts to promote Sustainable Cooking Energy in Tanzania**

**World Urban Forum 6**

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# Who We Are

***ARTI Energy is a collaboration between Appropriate Rural Technology Institute Tanzania (ARTI-TZ) and ARTI Energy Limited.***

***ARTI-TZ*** is a Tanzanian registered non-political, non-profit making organization, established in 2007, with the mission of serving Tanzania as an instrument of development through the dissemination and application of scientific knowledge and sustainable technologies for energy production, environmental protection, employment and income generating opportunities.

***ARTI Energy Limited*** is a commercial enterprise established in 2011 with the mission to identify quality renewable energy products and market them to the Tanzanian consumers with the support of quality sales and service.

***The synergy of these two organizations forms the spirit of ARTI Energy, socially conscious and dedicated to “Energy, Enterprise & Empowerment.”***



# *What We Believe*



- The energy needs in URBAN areas = Deforestation in Rural areas
- Lack of income generating opportunities in Rural areas = Migration to Urban centres
- Lack of clean Lighting = Inadequate Education = Poverty
- A common person is only interested to using anything that will help to make or save **MONEY**
- The world has spent too much in R & D of technologies and products to combat the above
- ***It is now time to put efforts and investments to COMMERCIALIZE, SCALE –UP, REPLICATE these technologies and products***



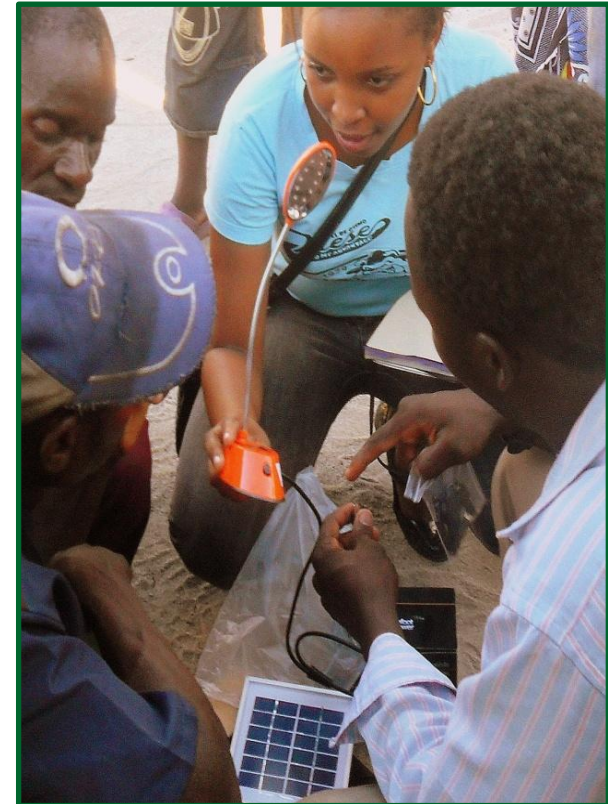
# *What we Do*

ARTI Energy identifies appropriate renewable energy technologies and products to introduces them to Tanzania.

***“Appropriate = Practical , Accessible, Affordable, & Environmentally Friendly”***

We do this by identifying and adapting renewable energy technologies to meet the demands of the local environment. We then build production and/or sales capacity and public awareness through training & equipping the value chain at each stage.

When the products are ready for the market, we make them available through **existing** trade channels, (network of wholesalers, dealers), supported by innovative marketing strategies. The end result is a complete and sustainable value chain linking producers to consumers.





Sustainable Charcoal Briquettes



Compact Biogas Systems



# *Our Products*

Low Cost Solar



Home Solar Back-up



Solar for Institutions



# *Our Projects*

ARTI-TZ has implemented several projects past and present and is striving to grow its project portfolio for the future...this is a sample of our accomplishments.

- |           |  |
|-----------|--|
| 2011-2012 | <b>Promotion of Charcoal Briquettes in Tanzania</b><br>World Bank's Biomass Initiative for Africa (BEIA)   |
| 2011-2012 | <b>Lighting Rural Tanzania</b><br>Rural Energy Agency & the World Bank's "Lighting Africa"                 |
| 2011-2012 | <b>Biogas Sustainable Energy and Economic Development</b><br>RONGEAD (France)                              |
| 2010-2011 | <b>Kigoma Lighting &amp; Power Project</b><br>Dissigno USA   |
| 2009      | <b>Charcoal Briquettes Training in Rufiji</b><br>Campaign for Female Education (CAMFED)                    |
| 2008      | <b>Azania Secondary School Biogas Project</b><br>Tanzanian Commission for Science and Technology (COSTECH) |
| 2007      | <b>BIDNetwork</b>  |

# *Our Projects*

## **Promotion of Charcoal Briquettes in Tanzania**

Funded by World Bank's Biomass Initiative for Africa (BEIA)

- In 2010, ARTI-TZ, developed a project **to train and equip** 720 Tanzanians, from 24 villages in 2 districts (Bagamoyo and Kibaha) to produce **sustainable charcoal briquettes using agro-waste and other dry biomass.**
- The trained groups were assisted and financed to form two Community Based Entreprises (CBEs) to commercially produce and sell the charcoal briquettes.
- The CBE's are owned by the members of the **trained groups (30%)**, a CBE Manager (10%) and ARTI Energy Limited (60%).
- CBE currently have a **capacity to manufacture 120 tons charcoal briquettes** annually. From September 2012, the **briquettes production increases to 2000 tons/year.**
- ARTI-TZ is currently working to **utilize the existing wood based charcoal supply chain** by **sensitizing urban charcoal retailers and transporters and the end users.**
- With further investment, the project **can be scaled-up and /or replicated** in other areas due to its **low cost, simplicity and job creation and income generating ability.**



# *Our Projects*

## **Promotion of Charcoal Briquettes in Tanzania**

World Bank's Biomass Initiative for Africa (BEIA)





# Our Projects

## Lighting Rural Tanzania

Funded by Rural Energy Agency & the World Bank's "Lighting Africa"

- The project demonstrated solar energy powered lighting can be accessed by the low income populations using **the existing trade channel and its "Mali Kauli"** (*Mali* = Goods + *Kauli* = Word of Honour) **credit system**.
- The transactions between the wholesalers and retailers to end users work on a soft/informal credit system – commonly known as "*Mali Kauli*".
- The solar lighting systems are supplied to district level wholesalers on affordable weekly payment schedules.
- The wholesalers supply the product to **their existing network retailers** who make the product available to the end users with *Mali Kauli*.
- ARTI trains and equips minimum 1 technician at each wholesaler and retail to repair the lights, if required.
- ARTI provides marketing support to the wholesalers and retailer in the form of Banners, Posters, Flyers and demonstration during Road shows.

# Our Projects

## Lighting Rural Tanzania

Funded by Rural Energy Agency & the World Bank's "Lighting Africa"



**Wakala wa Taa za Sola**

## Magic LN Supplier

1.5W Firefly 12 Mobile      5W Powerpack      15W Home Lighting System

Proud Partners: Barefoot Power, REA (Rural Energy Agency), LIGHTING AFRICA, ARTI

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# Our Projects

## Compact Biogas Projects



**CBS in Schools**



**Dr. Karve with CBS in Research**



**CBS donated under CSR programs**



**CBS in Army Camps**



**CBS at Safari Lodges**



**CBS Training to Technicians**

# *Our Projects*



## **Compact Biogas in Cities The Cash for Gas Concept**

### **BIOGAS FROM ORGANIC WASTE:**

Imagine neighbourhoods in East Africa cities where homes no longer use firewood, charcoal or imported fuels to cook their meals.

They use food waste to generate the gas they need to cook right on their properties using a Compact Biogas System (CBS).

Each group of 25 homes is serviced by 1-2 persons collect the household organic waste and the over flow as fertilizer for resale and to feed the biogas system its 6kg daily requirement.

The home owner pays a monthly rate for the biogas and for the service, which is below the cost of any alternative fuel.

Jobs are created, energy demands met, organic waste disposed of, neighbourhoods kept cleaned, green house gases reduced, money saved and profits made.



# *Our Success in 2011 – 2012*

In addition to projects, our solar road shows and our network of dealers and partners ARTI Energy successfully introduced hundreds of thousands of Tanzanians to the benefits of renewable energy by participating in the Dar es Salaam International Trade Fair (DITF), Kilimo Kwanza (Nane Nane), Public Service Week and at the Parliament grounds in Dodoma...here are some highlights.

Number of people sensitized to Renewable Energy	300,000+
Number of low cost solar units distributed	7,000
Number of Large Solar Systems installed	30
Number of People Trained on Charcoal Briquettes	954
Number of Charcoal Kilns fabricated and in use	150
Community Based Enterprises formed	02
Number of People Trained on Biogas	60



# *Our Team*

The ARTI Energy Team is unique, dynamic and qualified. It is synergy of men and women, Hindus, Christians and Muslims, a representation of several regions in Tanzania, as well as India and Canada. Our team is complimented with a host of interns from Tanzania, Europe and North America who bring fresh ideas and energy to the organization.



# *Our Partners*



**World Bank**

**Rural Energy Agency (REA)**

**Ministry of Natural Resources and Tourism (MNRT)**

**Tanzanian Commission for Science and Technology (COSTECH)**

**Barefoot Power (Australia)**

**RONGEAD (France)**

**Tujijenge Tanzania Limited**

**GAIA Consulting OY (Finland)**

**Carbon Africa**

**VICOBA**

**SACCOS**

**Dissigno USA**

# *Our Challenge*



- ARTI did not have many resources, but ARTI was resourceful.....
- ARTI takes pride in its **small** successes.....

ARTI has the capacity to make “***Renewables for Growing Cities in Africa***” a reality...

ARTI needs:

- Many more dedicated Partners
- More Government support
- INVESTMENT.... ( in any form)



# *Our Contacts*



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# *Our Commitment*



ARTI is COMMITTED to make  
our world a better place

Thank You