



OFF-GRID OPPORTUNITIES IN GHANA'S RURAL NORTH

Rising Demand for High-Quality Applications

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Photo-juwi 2013

OUTLINE

- Overview of Ghana
- RE Incentives & Policies
- NorthLite In Perspective
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OVERVIEW OF GHANA

- ❑ Land Area: 238,500 km²
- ❑ Population is approximately 25 million
- ❑ Ghana electrification access rate is 72% (2012)
- ❑ Ghana energy target is to achieve universal access to electricity by 2020
- ❑ Ghana has achieved significant Off-grid Solar PV electrification from 0.3MWp in 1987 to 3.8MWp in 2013
- ❑ The solar radiation levels in Northern Ghana are between 5 to 6 kWh/m²/per day with very low diffuse radiation of about 32%.

NorthLite
Headquarters

Northern
Ghana



Electricity Access Rate in Ghana (2012)

<u>Regions</u>	Population	Electricity Access	Households (HH)	HH with access	Pop with access
Greater Accra	4,010,054	97%	1,036,426	1,005,333	3,889,752
Ashanti	4,780,380	82%	1,126,216	923,497	3,919,911
Central	2,201,863	81%	526,764	426,679	1,783,509
Brong-Ahafo	2,310,983	67%	490,519	328,648	1,548,358
Eastern	2,633,154	70%	632,048	442,434	1,843,207
Western	2,376,021	68%	553,635	376,472	1,615,694
Volta	2,118,252	65%	495,603	322,142	1,376,863
<u>Northern</u>	<u>2,479,461</u>	<u>50%</u>	<u>318,119</u>	<u>159,060</u>	<u>1,239,730</u>
<u>Upper East</u>	<u>1,046,545</u>	<u>44%</u>	<u>177,631</u>	<u>78,158</u>	<u>460,479</u>
<u>Upper West</u>	<u>702,110</u>	<u>40%</u>	<u>110,175</u>	<u>44,070</u>	<u>280,844</u>
Ghana Overall	24,658,823	72%	5,467,136	3,936,338	17,754,352



INCENTIVES AND POLICIES

- ❑ Increase the contribution of modern RE in the energy mix to contribute 10% (500MW) by 2020
- ❑ Feed-in tariffs would be available to industries, commerce and residencies that can generate part of their energy demand from renewable resources
- ❑ Removal of import duty and VAT on renewable energy technology (RET) equipment
- ❑ Introduction of subsidies to cover high initial cost of renewable energy technologies particularly those located in rural communities

Supported by:



on the basis of a decision
by the German Bundestag

INCENTIVES AND POLICIES

- ❑ Ghana policy encourage businesses, households and communities to increase the use of renewable energy in their consumption mix
- ❑ Goals:
 - ❑ To diversify supplies and thereby safeguarding energy security
 - ❑ To improve access to electricity for the poor using renewable energy sources
- ❑ Renewable Energy law addresses the following:
 - ❑ Feed-in-Tariff (~ 20 USD cents / kWh for PV; published in 2013)
 - ❑ Obligatory purchase for large costumers (formulation in progress)
 - ❑ Renewable Energy Fund (establishment planned)



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NORTHLITE IN PERSPECTIVE

- ❑ Since inception in 2009, we have been serving the market with the best of solar solutions such as home lighting systems, streetlights solar power packs and solar off grid applications
- ❑ key distributors worth over 2,000 small solar systems installed across 280 off-grid communities in 2010
- ❑ Installed over 100 decentralized 30kWp per district under the Ghana Health Services “Motec-Grameen” projects in the uppers east region of Ghana
- ❑ Assisted in developing an action plan for the World Bank & Ghana Energy Development Access Project for the implementation of 14000 solar SHS in 11 districts of Ghana
- ❑ NorthLite demonstrated possibility for net-metering with 2 kWp residential PV in the north (*pending meter*)



SHS in Tongo village- Northern Ghana



PICO sales demo

- ❑ NorthLite is funded by the World Bank to recover and replace over 3600 ULA batteries supplied under ARB APEX/GEDAP/World Bank PV project in all 11 districts of Ghana in May 2014
- ❑ Independently financed and installed approximately 500 off-grid SHS in Ghana's north and across neighboring Burkina Faso, Togo and Cote D' Ivoire.
- ❑ Currently employs 15 core staff, 25 support staff and over 230 network sales agents across Ghana
- ❑ In 2013, our turnover amounted to US\$1.1 million

THE OPPORTUNITY IN GHANA'S NORTH

- ❑ **Investment Opportunities:** Opportunities in off grid areas outweigh current levels of investments and this calls for rapid but appropriate investment in large & pico Solar PV systems by far (up to 60% off-grid)
- ❑ **Partnerships:** Partnerships between the supply-(Germany) and demand-(Ghana) chain are relevant to the broader Ghanaian PV market, especially to develop QUALITY off grid SOLUTIONS
- ❑ **Distributor Networks:** NorthLite has capacity to distribute and promote sales through our over 230 service providers/agents to increase penetration in the off grid markets in rural Ghana which is an opportunity for partnership starting NOW!
- ❑ **Financing Scheme – Equity Investment:** Ghana requires tailor-made investment and financing (end user credit and loan systems) to promote access through rapid sales and distribution in three regions of the north where about 65% are seasonal income earners at €93.00 as net income per head per month. There are only few financing institutions in Ghana, but not RE “tailor-made or “PATIENT INVESTORS”.

THE OPPORTUNITY IN GHANA'S NORTH

- ❑ **Project Development:** The market space in Ghana requires specific pre-engineered PV systems for the current demand.

Examples-

- Large systems for mining companies, residential & non-residential businesses*
- Large systems for Public institutions with high utility/diesel cost.*
- 30kWp systems for self-consumption and net-metering*
- 5kWp systems for low income businesses who operate kiosks*
- 1/3kWp for households with grid as backup/net-metering*

- ❑ **Stocking:**

Stock of Solar products and components/parts for ready sale in Ghana.

Example, inverters, controllers, PV Modules etc

- ❑ **Net-Metering:** -A case for residential and non-residential grid connected solutions
-Potential for Hybrid Diesel Applications for commercial consumers

AT NORTHLITE

we have.....

- ✦ Huge PV Market
- ✦ Cheap Labour
- ✦ Cheap land space for large PV projects
- ✦ Supporting Policy
- ✦ Distributor networks
- ✦ Credit Schemes
- ✦ Licensed & Registered as PV installer/distributor/Retailor

IN GERMANY

You have.....

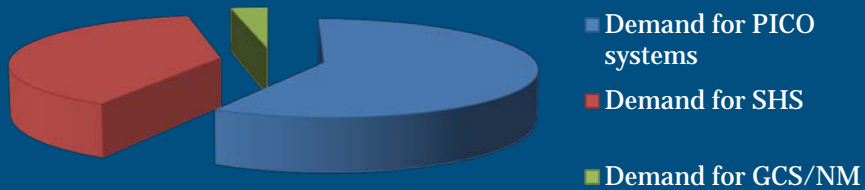
- ✦ Quality Products
- ✦ Know How
- ✦ Market Experience
- ✦ Skills
- ✦ Supply Power
- ✦ Tailor-Made Systems
- ✦ Possible Financing
- ✦ Technical Support

Win-Win

OFF-GRID DEMAND REVERSE SITUATION

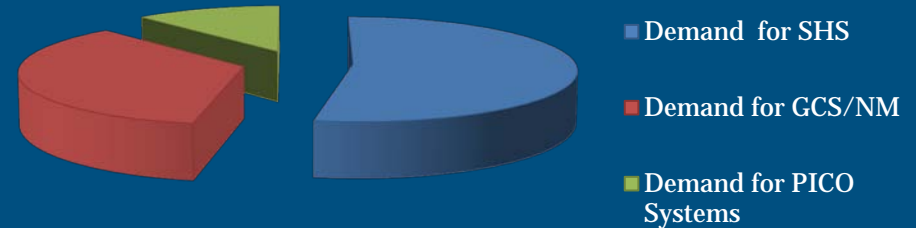
In 2013 Demand for Off-Grid applications (SHS) is high and almost equal expectation for NM/SC application

Yr. 2009



In 2009 Demand for PICO application across Ghana was high

Yr. 2013



POTENTIAL IN GHANA'S NORTH

Potential for
Development of Off-
Grid PV Plants in the
North of Ghana

Access to over 230
Distributor Networks

Bright Future for
German
Investment

Strong Open market for Pico
Systems in Northern Ghana

Partnership to Develop
Local IPPs for FiT

Potential for Net-Metering PV
Non & Residential customers

POTENTIAL FOR TAILOR-MADE FINANCING FOR PV PROJECTS IN GHANA

OUR EXPECTATIONS

We offer SOLUTIONS and Consulting for Emerging Companies in the Ghanaian Market.

Example:
Market Research
Sales support
Installations

Bring Your Solar PV Products & Supplies to our ONESTOP SHOP.

We serve Ghana from the NORTH!!

. Please ASK HOW!

We Expect to MEET interested Investors to Design Tailor Made RE POOL Financing for Indigenous Ghanaian Solar PV Entrepreneurs .

References 2013

WORLD BANK
SOLAR PV
PROJECT Ghana-
GEDAP

14000 SHS's

MOTEC &
HEALTH
SUPPORT PV
PROJECT-GHS

30kWp

COMMUNITY
CLINIC
VACCINE &
WATER PV
PPROJECTS

8kWp



INSTALLATION
& TECHNICAL
ASST.
CONSTRUCTION
OF 2.5MW PV
PRJ. VRA
GHANA

OUR MERITS

NORTHLITE IS A
LINCENSED
INSTALLER OF SOLAR
PV IN GHANA

NORTHLITE IS THE
LEADING SOLAR PV OFF-
GRID INSTALLER IN
GHANA'S NORTH

WE ARE CERTIFIED BY
AGSI & RECOGNISED
BY THE C&RBs

WE HAVE TRAINED
OVER 230 RE
DEALERS ACROSS
GHANA

MICRO FINANCE & CREDIT SCHEME FOR RURAL RE

Ich danke Ihnen!!

A 3D rendered scene featuring two white, featureless humanoid figures shaking hands. They are standing on a light-colored floor in front of a large array of solar panels that recede into the distance under a blue sky with light clouds. A green speech bubble originates from the figure on the left.

Welcome to
Ghana's
North!!

Q&A



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Renewable and Sustainable Energy Service Providers

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