



Powering the economy of Ghana and setting the standard for public sector excellence in Africa.

5TH AGI LOCAL CONTENT & INVESTMENT SUMMIT

(OCTOBER 26TH-27TH, 2016):

GENERATION DEVELOPMENT: VRA'S LOCAL CONTENT OPPORTUNITIES

Outline

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- Evolution of Power Generation Sector

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- VRA's Generation Development Policy

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- VRA's Local Content Policy

4

- VRA Renewable Energy Policy

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- Evolution of Generation Sector

Evolution of Generation Sector

2013-Present

1995 - 2013

1914-1960

Thermal Generation -
: Isolated Diesel Sets by Electricity Dept, Electricity Division and later by Elec. Corp. of Ghana.

1960 - 1995

Hydro Generation -
: Est. of the VRA
: Akosombo HEP
: Est. of the NITS/Grid
: Kpong HEP

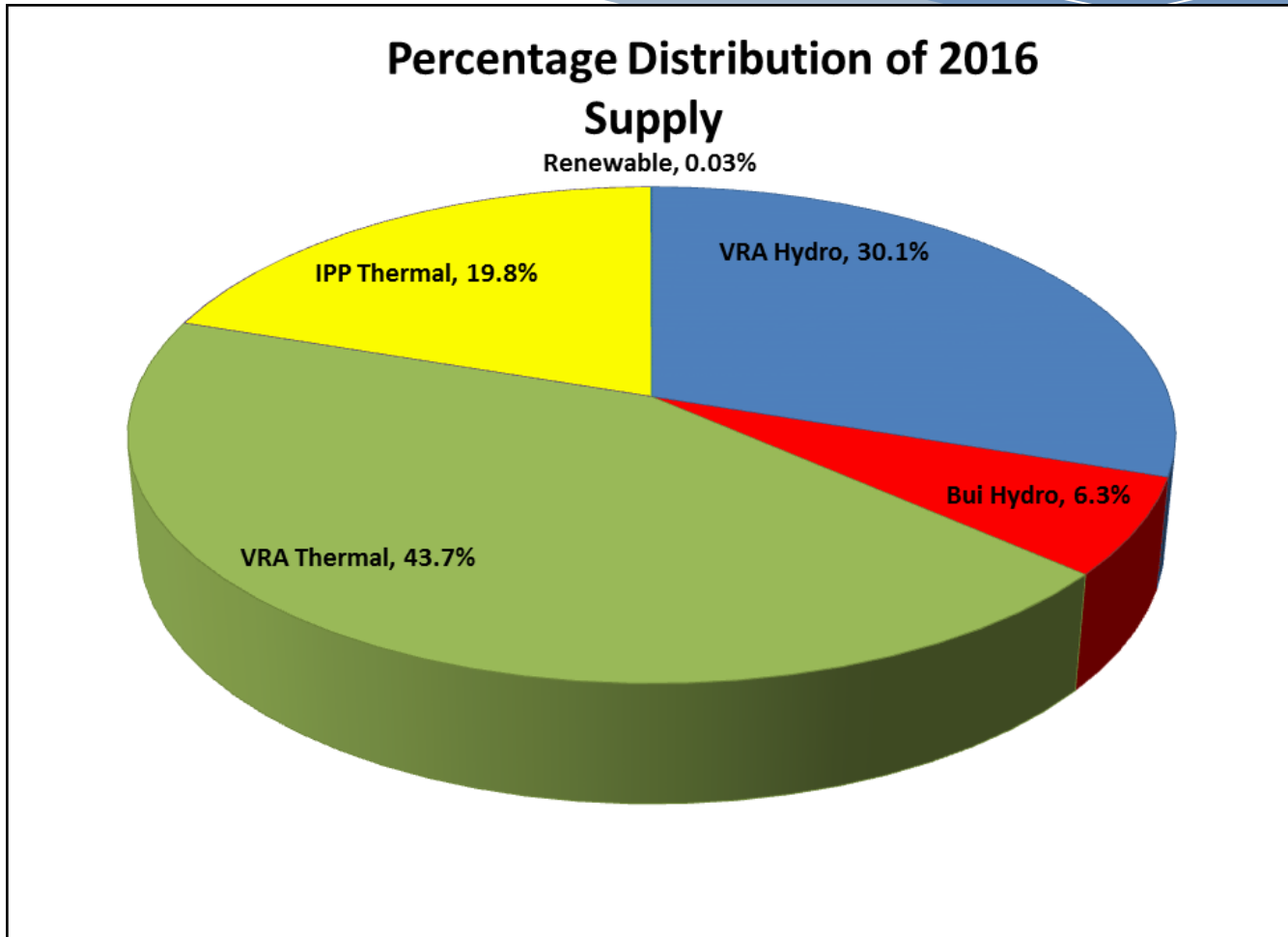
Thermal Complementation -
: Aboadze TPS
: Unbundling, Deregulation, Participation of IPP's
: Tema Thermal Power Complex

Exp of Hydro & Grid connected Renewables -
: Bui HEP
: Ghana's Renewable Energy Act
: VRA's Navrongo Solar Plant
: BXC Solar Plant
: Introduction of Wind Power

Evolution of Generation Sector



Evolution of Generation Sector



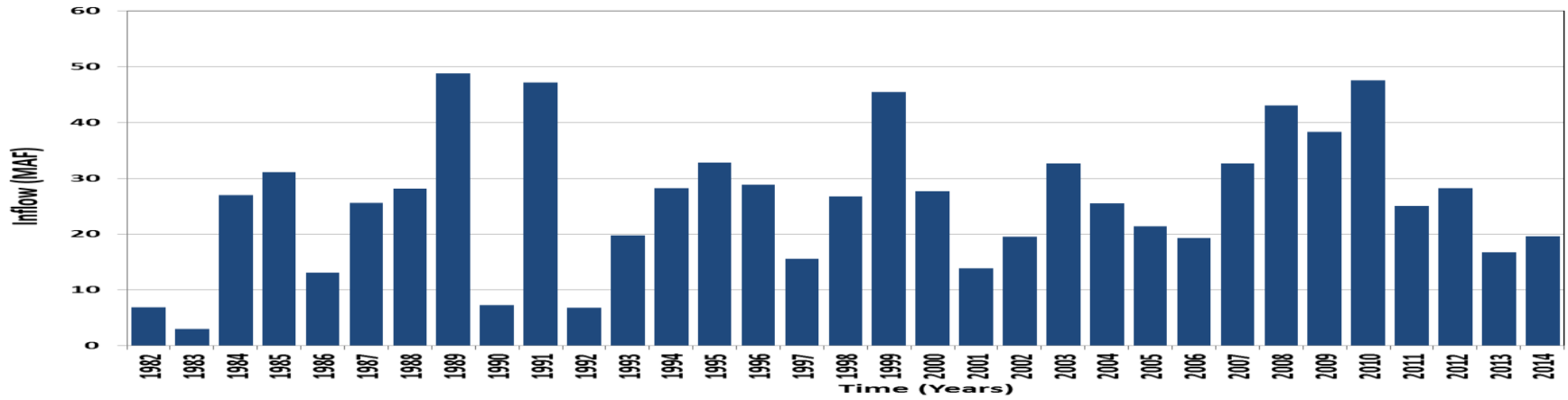
Evolution of Generation Sector

- Ghana's power supply sources are mainly from hydro and thermal (light crude oil and gas).
- Installed Generation Capacity (as at Mid Oct, 2016) : 3,686MW
- Dependable Capacity (as at Mid Oct, 2016) : 3,217MW
- Available Capacity (Mid October, 2016): 1,968MW
- Peak Demand : 2,335MW
- Hydro generation provides overall approx. between 35% and 45% of the installed capacity and approx. 36% of energy.
- Thermal power has grown from 330MW in year 2000 to above 2,000MW at present and will continue to dominate the national energy mix.

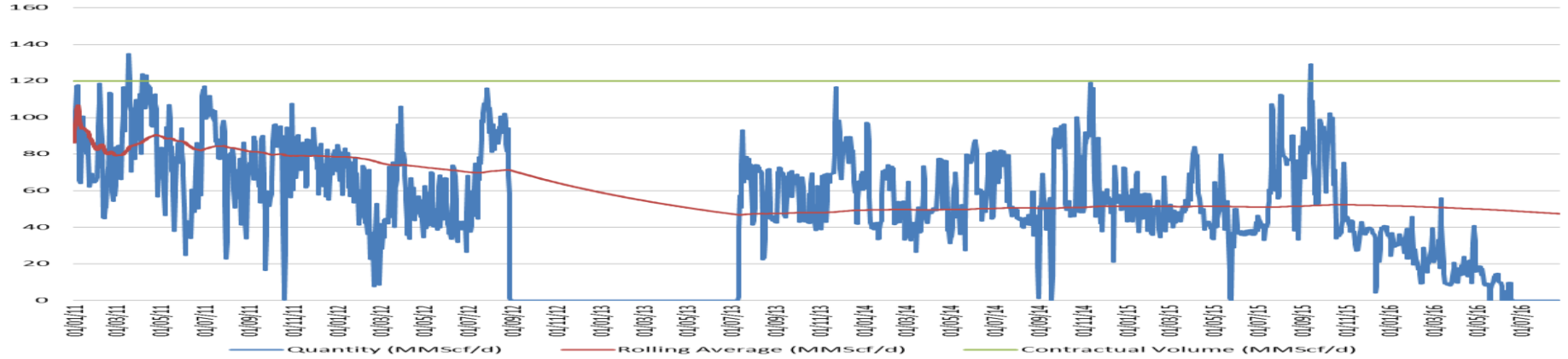
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- VRA's Generation Development Policy

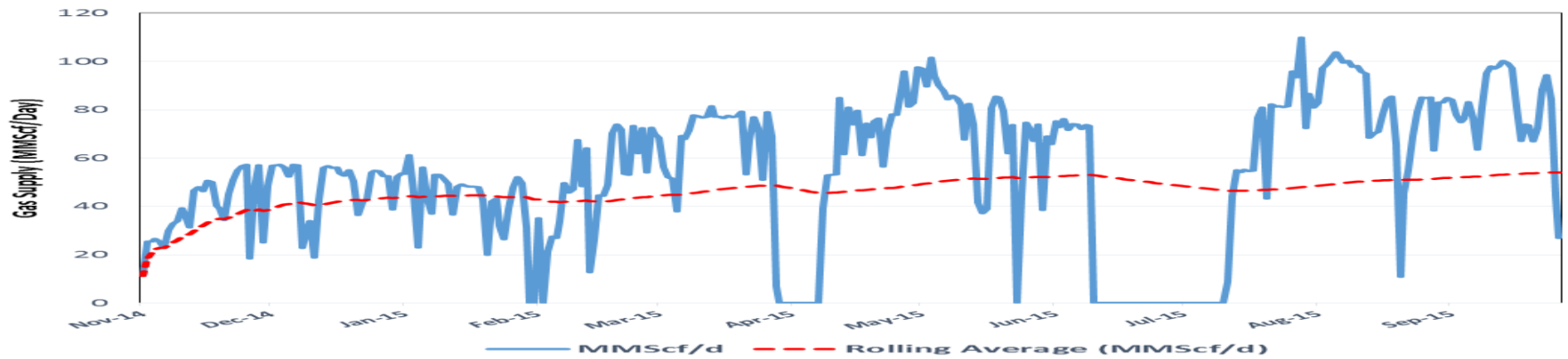
Akosombo Net Inflow (1982 - 2014)



WAGP SUPPLY (2011 - 2016)



GAS SUPPLY FROM GHANA IN MMSCF/DAY



- The VRA is a public statutory body established on April 26, 1961 under the Volta River Development Act, Act 46, with the mandate to generate and supply electrical energy for industrial, commercial and domestic use in Ghana.
- In the furtherance of the Power Sector Reform Programme (PSRP) this Act was amended - Volta River Development (Amendment) 2005, Act 692.

- The generation development policy derives its authority from VRA's Act (as amended) and Mission Statement i.e.

“ The VRA exists to power economies and raise the living standards of the peoples of Ghana and West Africa. We supply electricity and related services in a reliable, safe and environmentally friendly manner to add economic, financial and social values to our customers and meet stakeholders' expectations”.

- The Volta River Authority will undertake generation addition projects in a manner that will ensure competitive, least cost, timely addition and sustainably to the VRA's power generation portfolio according to its Generation Expansion Programme.

These include both non-renewable: fossil fuels (coal, light crude oil, natural gas, uranium) and renewable sources: water, wind & solar.

VRA's Generation Development Policy

VRA (Non-JV) Candidate Generation Project Initiatives

Project	Capacity	Earliest Date	Status
	MW		
TT1PP/CENIT Conversion	110	Q1, 2019	Project Development activities ongoing
KTPP Conversion	110	Q1, 2019	Feasibilities study completed. Financing being arranged.
Takoradi 4 Thermal Proj. (T4)	180	Q4, 2017	EPC Contract awarded. Financial close yet to be achieved.
KTPP (Phase 2)	450	Q1, 2021	Feasibility studies ongoing
Domunli Thermal Project	450	Q1, 2020	Feasibility studies completed
Renewable Energy Projects			
VRA Solar Power Project	12	Q1, 2017	Feasibility Studies & ESIA completed. Review and Approval Loan Agreement ongoing.
VRA Wind Energy Project	150	Q1, 2018	Feasibility studies & ESIA ongoing.
Pwalugu Hydro Project	63	Q3, 2022	Feasibility & ESIA studies ongoing
Juale Hydro Project	87	Q1, 2024	Contract for feasibility study awarded. Studies yet to commence.
Total	1,562		

3

- VRA's Local Content Policy

VRA's Local Content Policy

Policy approved in 2013, **Rationale** include:

- To create value in-country through deliberate utilization of Ghanaian human and material resources and related services.
- To achieve an acceptable degree of local participation, control and financing by citizens of Ghana, in any Joint Venture arrangement that promotes and enables the optimal use of in-country human resources, materials and services.
- To comply with the relevant provisions of the Public Procurement Act 2003 (Act 663) namely Section 98, which defines “**Local Content**” as “a product originating from Ghana” and “**Domestic Supplier**” “as a citizen who is a supplier or a corporate body with majority shareholding owned by citizens”.
- To ensure that quality is not compromised but enhanced in accordance with industry best practices and international standards

VRA's Local Content Policy

The **Specific Objectives** of this policy framework include:

- Provide financial empowerment to VRA's local contractors and suppliers
- Promote the indigenization of knowledge, expertise and technology in VRA.
- Achieve at least 90% local employment for Ghanaian citizens within 3 years after the operationalization of any major VRA Project.
- Empower VRA's vendors to develop capabilities to produce goods and services by creating market for goods and services domestically and ultimately to compete with international businesses.

VRA's Local Content Policy

The **Specific Objectives** of this policy framework include:

- Facilitate the creation of complementary industries that will help sustain VRA's operations and leadership in the power sector and other related sectors.
- Provide education & training facilities to relevant industries in Ghana & the sub-region, using our Academy
- Collaborated with other relevant institution and stakeholders for the passage of policies, relevant laws, regulations in support of LC.

VRA's Local Content Policy

The four (4) **Strategic Areas** for the implementation of the Authority's Local Content Policy are:

- Making Local Content a core part of Business Planning and Strategy,
- Workforce Development
- Supplier Development
- Strategic Community Investments

For immediate implementation of the Policy the following ten (10) **Focus Areas** have been identified:

- Cables & Conductors + Accessories
- Energy Meters
- Wood Poles
- Pharmaceuticals
- Furniture & Fittings
- Corporate Calendars & Diaries
- Computers & Accessories
- Distribution Transformers
- Renewable Energy (Solar, Wind, Small/Mini Hydro)
- Centre of excellence (Introduction of “Trade School” & “Training Factory” Concepts)

VRA's Local Content Policy

- The VRA LC policy is again consistent with VRA's Vision:
“A Model of Excellence for Power Utilities in Africa”.
- The VRA acknowledges the fact that it is by far the largest power generation utility in Ghana and is key to the success of manufacturing and industrialization in Ghana.
- VRA further realizes that LC is very important, needs to be maximized especially when as a nation it seems we import almost everything.
- In operationalizing this policy:
Procurement rules are being revised to meet the exceptions/objectives of the policy, including;
 - ✓ A Schedule requiring tenderers to deliver a minimum level of Local Content (in percentage terms)
 - ✓ Measures to develop the capabilities and competitiveness of producers of Ghanaian goods, works and services shall be included in tendering documents for new projects.

VRA's Local Content Policy

- ✓ In tendering for any contract/before carrying out any project, the contractor shall submit a Local Content Plan demonstrating compliance with the provisions of this policy.

The Local Content Plan shall contain

- a) First consideration shall be given to services provided from within Ghana and to goods manufactured in Ghana.
 - b) Ghanaians shall be given first consideration for training and employment in the work program for which the plan was submitted.
 - c) Any collective agreement entered into by any contractor or any other body submitting the Local Content Plan jointly with any Association of employees shall comply with the provisions of this policy.
- ✓ Set up facilities such as machine tools shop (e.g.in the VRA Centre of Excellence) for local manufacture of equipment and materials regularly used by the Authority.
 - ✓ Provide education and other training facilities to the relevant industries in Ghana and sub-region

4

- VRA Renewable Energy Policy

VRA Renewable Energy Policy

- The Government of Ghana (GOG) formulated a Renewable Energy (RE) policy with the objective of generating 10% of Ghana's electricity from renewable energy sources by 2020.
- Subsequently, GOG passed into law, in November 2011, an RE Act , 2011, Act 832, to provide the necessary legal and regulatory framework to promote the provision of energy including electricity from renewable sources.
- The objective of this law is to promote the sustainable development and utilization of RE resources for electricity and heat generation. The law requires amongst others that, electricity distribution utilities and bulk customers are obligated to procure a percentage of their electricity generation from renewable energy Sources.

VRA Renewable Energy Policy

- VRA consequently formulated a Renewable Energy Policy to also generate 10% of its generation from renewable energy sources.
- The objective of this policy is to diversify the Authority's generation portfolio and to also contribute to achieving the objective of the GOG RE policy.
- A Renewable Energy Development Programme (REDP) was accordingly instituted in line with the RE and LC Policies (with RE as one of the Focus areas) with a target of developing:
 - ✓ 14.5MW of Solar PV and 150MW of Wind Energy from 2011 to 2015 in the first phase
 - ✓ 100MW of Solar PV and 200MW of Wind Energy in the second phase of the program from 2016 to 2020.

VRA Renewable Energy Policy

– Status of REDP-Phase 1

- 1st (Periodic) Review with stakeholders as part of our strategy to collaborate with other relevant institutions for the passage of relevant laws and regulations in support of this Policy.
- Involvement in procurement – vendors/suppliers & contractors.
- Liaise with Private sector to seek relevant consultancy & investment opportunities in renewable energy project.
- As part of the Ministry of Power's drive to increase access to electricity from renewable energy sources, a program has been developed to deploy Renewable Energy based mini-grid systems in various off-grid rural communities. VRA has been tasked with undertaking the operations and maintenance of the generation component of these mini-grids.

– Status of REDP-Phase 1

Navrongo Solar PV

- Main contractor – ESIA
- Employment opportunities during construction

One Year Wind Measurement

- Sub contract for the installation/maintenance of the wind mast to local company

Pwalugu Multipurpose dam

- Consortium involving Ghanaian partner - ESIA
- Employment opportunities during construction

Upper West Solar PV

- Employment opportunities during construction
- Promote the indigenization of knowledge, expertise and technology in VRA – transfer of knowledge/capacity of VRA Staff

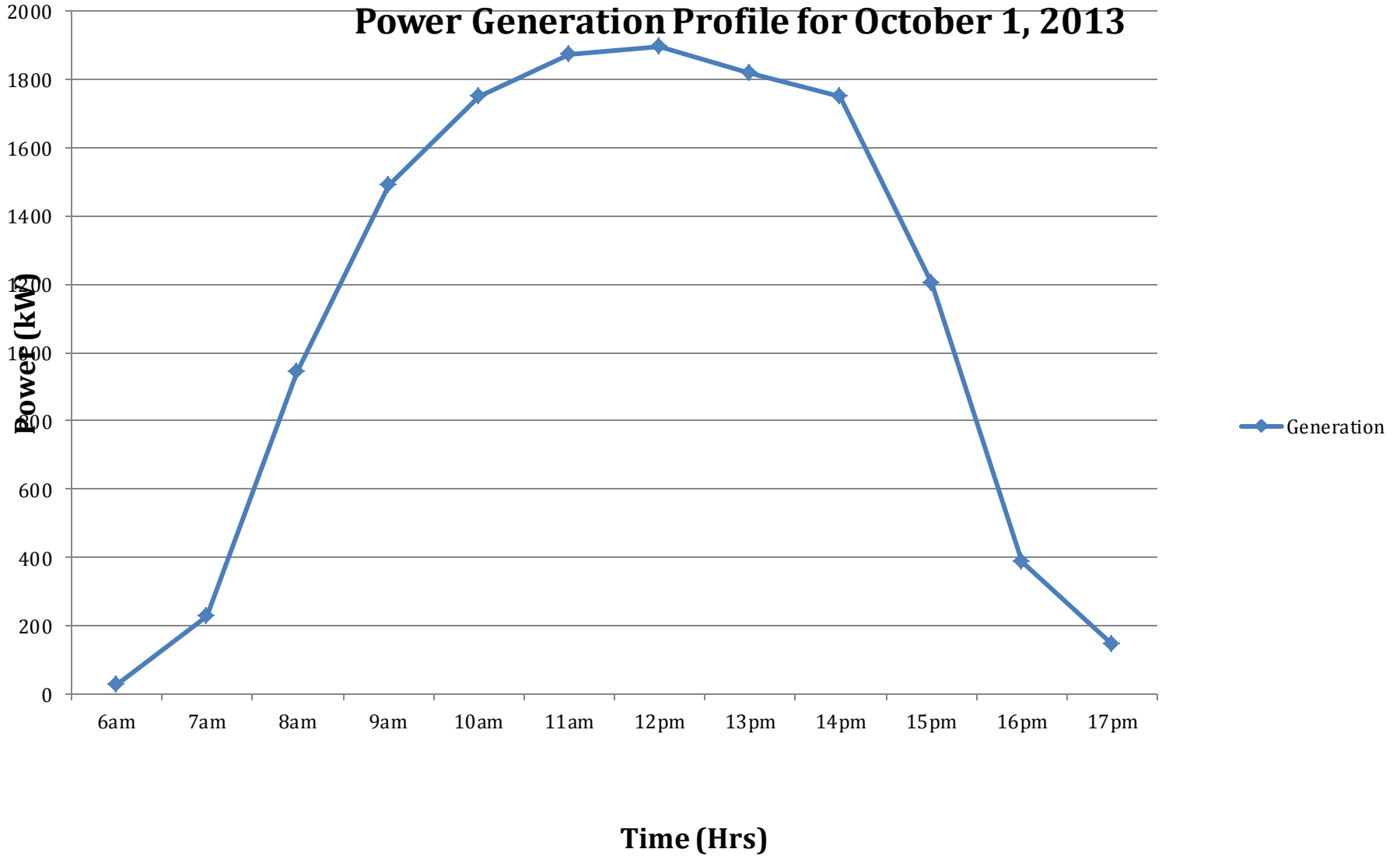
WPP1 & 2

- Employment opportunities/Main contractor - ESIA, Geotechnical studies
- Promote the indigenization of knowledge, expertise and technology in VRA – transfer of knowledge/capacity of VRA Staff

O&M of mini/off-grid systems

- Employment opportunities during O&M

Power Generation Profile for October 1, 2013



Conclusions

- I will reserve the conclusions for the panel discussions but few points to note:
 - ✓ There is the global trend in falling prices of various components, especially photovoltaic modules, which are needed in the construction of a solar PV.
 - ✓ Immediately concentrate on Related Services i.e. Financing, Insurance, Consultancy, Engineering, ESIA, Transaction Advisory Services (legal, taxation).
 - ✓ The LC policy of VRA especially with regard to procurement can be realized from projects funded internally, thus the financial strength/status of the VRA is critical.
 - ✓ The nature of our business/opertaions require that at all times quality is not compromised but enhanced in accordance with industry best practices and international standards



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Thank you very much