

MINISTRY OF ENERGY
POSITIONING GSGDA WITH COMPACT II

POLICY OBJECTIVE	GSGDA STRATEGIES	PROGRAMMES/PROJECTS	WHAT HAS BEEN ACHIEVED AS @ OCT 2012	OPPORTUNITIES FOR COMPACT II
1. Provide adequate and reliable power to meet the needs of Ghanaians and for export	1.1 Complete the implementation of the power sector reforms	<ul style="list-style-type: none"> • Reconstitute VRA into a holding company to become a single player in power generation in West Africa • Create a Joint Venture Company to own the Aboadze Thermal Complex • Establish a separate Transmission Company wholly owned by Government • Reconstitute ECG and NED into a single Distribution Company • Complete the power Sector Financial Restructuring and recovery study necessary for the recapitalization of VRA, ECG and NED 	<p>PRE- GSGDA</p> <ul style="list-style-type: none"> • Energy Commission (The Energy Commission Act, 1997; Act 541) & PURC Act. established as Regulators in the Power Sector • GRIDCo has been established as separate transmission Company wholly owned by Government <p>POST- GSGDA</p> <ul style="list-style-type: none"> • The Northern Electricity Department (NED), which was a subsidiary/department of the VRA has been transformed into a company the Northern Electricity Distribution Company Limited (NEDCo). NEDCo is still a subsidiary of VRA and is the electricity distributor in four (4) regions namely, Brong Ahafo, Northern, Upper East and Upper West Regions • Study on Power Sector Financial Restructuring for power utilities has been completed and recommendations / financial recovery plan being implemented 	<ul style="list-style-type: none"> • Strengthen Capacity of PURC & EC • Improve NEDCo's commercial viability. • Improve ECG's performance. • Update study on Power Sector Financial Restructuring • Implement regulatory financial accounting framework • Monitor hidden costs
	1.2 Develop a non-congested transmission system	<p>Transmission Improvement Projects</p> <ul style="list-style-type: none"> • Substation reliability Enhancement Project • Indoor Switchgear Upgrade project • Substation Upgrade Project • Transmission Reinforcement Project • Central Transmission backbone project • Tumu-Han-Wa Transmission Project 	<ul style="list-style-type: none"> • Phase 1 (10) substations commenced in May 2011 • Preliminary engineering line route selection, survey and environmental impact assessment activities awarded for funding by the World Bank • Project awarded to Forclum Energies of France 	

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<p>1. Provide adequate and reliable power to meet the needs of Ghanaians and for export</p>	<p>1.3 Sustain power generation capacity expansion, as well as rehabilitate and reinforce the transmission and distribution infrastructure to meet the projected growth in power demand of 10% per year in the medium term</p>	<ul style="list-style-type: none"> • Construction of 49.5 MW Tema Thermal 2 Power Plant (TT2PP). • Construction of 400MW Bui Hydro Project • Expansion of 220MW Takoradi International Company (TICO) • Development of 200MW Kpone Thermal Power Plant • Construction of 132MW Aboadze T3 Thermal Power Plant. • Construction of 220MW Kpong Power Plant. • Operationalisation of the Osagyefo Barge • Development of the Western Rivers • Development of the Juale Hydro Project 	<ul style="list-style-type: none"> • The 49.5MW TT2PP Plant has been commissioned and in operation. • Construction work on the main dam is about 90% complete. One(1) unit of 133MW is to be commissioned by December 2012 • Expansion of 220MW simple cycle plant to 330Mw combined cycle power plant is scheduled to commence in 2012 • Scheduled to commence in 2012 • Scheduled for completion in June 2012. • Procurement activities in progress. VRA is seeking approval from the CTRB for the JV partnership • Project on hold pending resolution of the Arbitration process. Legal issues being handled by the Ag’s Dept • MOU has been initialed between MoEn and China International Water and Electric Corp. for the preparation of the feasibility studies and detail designs.MOU has been forwarded to the AG’s Dept. for review. • Initial attempts at developing the Juale Hydro Power Project on hold following the realization that the optimum dam height will cause flooding and resettlement challenges in Togo.VRA with the assistance of the AFD is to update the feasibility studies for Juale in the frame work of the WAPP. 	

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1. Provide adequate and reliable power to meet the needs of Ghanaians and for export	1.4 Open up the electricity sub sector to Independent Power Producers (IPPs) and private sector participants in the distribution sector	Expansion of Power Generation Capacity	<p>The Energy Commission has developed a framework for IPPs to enter the Electricity market. They include;</p> <ul style="list-style-type: none"> • Licensing framework for IPPS • Wholesale electricity market rules for operations of Electricity Market • National Electricity Distribution code • Natural Gas Transmission code. 	<p>Establish legal backing for IPPs/PPPs framework</p> <p>Develop alternative to GOG sovereign guarantee</p>

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1. Provide adequate and reliable power to meet the needs of Ghanaians and for export	1.5 Secure long-term reliable gas supplies for the operation of the thermal power plants	<ul style="list-style-type: none"> • Completion of the West African Gas Pipeline Project to Tema • Acceleration of the use of natural gas from WAGP in place of crude oil at Aboadze • Construction of pipelines from the Jubilee Field Gas Project to Osagyefo Power Plant at Effasu and the Takoradi Power Plant at Aboadze • Intensify Exploration for Gas and Oil 	<p>The Ghana National Gas Company (GNGC) has been established with the responsibility to build, own and operate infrastructure required for gathering, processing, transporting and marketing of natural gas in the country.</p> <p>The Gas infrastructure project with a component for harnessing gas from the Jubilee field for power generation has taken off.</p>	<ul style="list-style-type: none"> • Assist in securing additional supplies of gas through WAGP
	1.6 Increase access to modern forms of energy to the poor and vulnerable especially in the rural areas through the extension of national electricity grid	<ul style="list-style-type: none"> • National Electrification Scheme (Extension of electricity to towns and rural communities) 	<p>The pace for rural electrification under the National Electrification Scheme has been stepped up since 2009. Access rate to electricity increased from 61% in 2008 to 66% in 2009 and to 72% in 2011.</p>	<ul style="list-style-type: none"> • Demonstrate productive uses of electricity in rural environments to improve well-being of poor and vulnerable as well as to improve financial & economic viability of rural electrification schemes.
	Achieve cost recovery for electricity services	<ul style="list-style-type: none"> • Electricity Cost of Service & Tariff Study. • Tech. & operational Audit of the Power Utilities. • Regulatory Accounting Framework. • Design of Feed-In-Tariff • Design of Ancillary Services Pricing Regime 	<ul style="list-style-type: none"> • Draft Final Report submitted by the Consultant. • Draft Final Report submitted by the Consultant. • RFPs received and the technical proposals evaluated. • Final reports received. • Draft Final Report submitted to stakeholders for review and comments. 	<p>Assist PURC to carry out additional studies and to implement improvements to tariff model.</p>

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1. Provide adequate and reliable power to meet the needs of Ghanaians and for export	1.7 Reduce power system losses and waste in electricity supply and consumption	<ul style="list-style-type: none"> • Upgrading and Rehabilitation of Electricity Distribution Network • Prepaid Metering Programme to replace credit metering in residential and commercial sectors 	Report on Loss study (Technical and Commercial) for NEDCo and ECG has been submitted.	Implement key recommendations in selected areas in ECG and NEDCo
	1.8 Source funding for the rehabilitation and expansion of existing power plants			

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1. Provide adequate and reliable power to meet the needs of Ghanaians and for export	1.9 Complete and operationalize on-going power projects			
	1.10 Encourage investment in power infrastructure	Development of Rules and Regulations for the Electricity market	<p>The Ministry through the Energy Commission has developed the framework for IPPs to enter the Electricity market. They include;</p> <ul style="list-style-type: none"> • Licensing framework for IPPS • Wholesale electricity market rules for operations of Electricity Market • National Electricity Distribution code • Natural Gas Transmission code. 	<ul style="list-style-type: none"> • Legal backing to IPP/PPP framework • Alternatives to sovereign guarantees
	1.11 Ensure the minimization of inefficiencies		<ul style="list-style-type: none"> • Gridco is reducing technical losses in transmission by reactive power compensation 	<ul style="list-style-type: none"> • Reduce technical losses at distribution and utilization stages by reactive power compensation

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2. Increase the proportion of renewable energy, particularly solar, wind, mini-hydro and waste-to-energy in the national energy supply mix	2.1 Create appropriate fiscal and regulatory framework for the renewable energy sub sector	<ul style="list-style-type: none"> ● Development of Renewable Energy Law 	<ul style="list-style-type: none"> ● Renewable Energy Bill passed and awaiting presidential assent ● Draft pricing methodology for RE developed. ● Commenced work on LI for RE 	Revision of tariff model may provide opportunity for subsidizing electricity from renewable sources
	2.2 Contribute to the mitigation of climate change	<ul style="list-style-type: none"> ● Environmental and Social Impact Assessment review of existing Energy Projects ● Creation and funding of Environmental and Social Impacts Assessment Unit in the Ministry of Energy ● Establishment and Implementation of Environmental Credit Facility for development of energy project ● Development of Environmental and Social Impact Assessment Guidelines for Energy projects 		

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	2.3 Complete the development of the Bui Hydropower Project on the Black Volta	400MW Bui Hydro Plant	Construction work on the main dam is about 90% complete. One(1) unit of 133MW is to be commissioned by December 2012	Assist in revision and implementation of tariff model that covers ancillary services including peaking capacity and reactive compensation
	2.4 Support the development of small and medium scale hydro power projects on other rivers, including the Western Rivers (Ankobra, Tano and Pra), River Oti, and White Volta	<ul style="list-style-type: none"> ●Development of the Western Rivers ●Development of the Juale Hydro Project 	<ul style="list-style-type: none"> ●An MOU has been initialed between MoEn and China International Water and Electric Corp. for the preparation of the feasibility studies and detail designs. The MOU has been forwarded to the AG's Dept. for review. ●Initial attempts at developing the Juale Hydro Power Project on hold following the realization that the optimum dam height will cause flooding and resettlement challenges in Togo. VRA with the assistance of the AFD is to update the feasibility studies for Juale in the frame work of the WAPP. 	
	2.5 Switch from the use of biomass (fuel wood and charcoal) to alternative sources of energy			
	2.6 Promote the establishment of dedicated woodlots for wood fuels production			
	2.7 Promote the production and use of improved and more efficient biomass utilization technologies			

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	2.8 Balance biofuels development against food security			
	2.9 Complete feasibility studies on wind and solar energy technologies			
	2.10 Improve the cost effectiveness of solar and wind technologies			
	2.11 Support indigenous research and development to reduce the cost of solar and wind energy			
	2.12 Support the use of decentralized off-grid alternative technologies (such as solar PV and wind) where they are competitive with conventional electricity supply			<ul style="list-style-type: none"> • Deployment of off-grid solar PV systems to island communities. • Development and assessment of operational models
	2.13 Support Ghanaian engineers and scientists to cooperate with international experts on cost-effective technologies			
	2.14 Provide incentives for real estate developers and other construction designers to incorporate energy conservation and renewable energy sources in their designs			
3. Convert most of the wastes generated in municipal activities, industrial and agricultural operations to energy	3.1 Provide access to waste-to-energy technologies for energy production	<ul style="list-style-type: none"> • Institutional biogas project (Universities, Polytechnics and Senior High Schools) 		
	3.2 Maximize energy production from waste if cost effective	<ul style="list-style-type: none"> • Metropolitan waste-to-power project 		
	3.3 Facilitate access to grid for waste-to-energy power plants	<ul style="list-style-type: none"> • Combined heat and power system for industries 		

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4. Explore the options for nuclear and geo-thermal energy	4.1 Assess the implications of the development of nuclear power			
	4.2 Continue to explore nuclear energy as an option in the diversification of the country's energy mix			
	4.3 Research into and develop geothermal power			
5. Ensure equitable access to and uniform pricing of petroleum products	5.1 Expand petroleum product storage capacity, and extend petroleum products bulk distribution infrastructure to all parts of the country			
	5.2 Support expansion of the supply and reach of LPG to homes and small business			
	5.3 Improve efficiency in the power industry to drive cost down			
	5.4 Base ex-refinery prices of petroleum products on import parity prices of petroleum products or other cost-effective pricing formula			
	5.5 Regulate transportation and distribution charges for petroleum products to ensure reasonable profit margins for transporters and distributors			
	5.6 Apply cross-subsidies among petroleum products to achieve specific national development objectives			
	5.7 Undertake regular review of the pricing mechanism			

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6. Ensure efficient production and transportation as well as end-use efficiency and conservation of energy	6.1 Establish appropriate pricing regime for energy services that would provide incentives to domestic and industrial consumers to voluntarily manage their energy consumption			Review of tariff model to make it cost-reflective
	6.2 Develop and implement programmes and measures to help consumers optimise their energy use			
	6.3 Support a sustained and comprehensive public education and awareness creation campaign on the methods and benefits of energy conservation			Demand side management public and SLT campaign
	6.4 Explore how energy intensive sectors can be incentivized to improve energy efficiency			Review of tariff model to make it cost-reflective
	6.5 Discourage the importation and use of high energy consuming vehicles			
	6.6 Build awareness and knowledge on economically attractive energy efficiency measures			Demand side management public and SLT campaign Energy management training
	6.7 Develop and implement measures to reduce petroleum product consumption in transportation			
	6.8 Enforce the implementation of the zonal system for lifting of petroleum products from dedicated storage depots			
	6.9 Encourage the use of fuel enhancing additives			

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	6.10 Reduce electricity transmission and distribution losses		Gridco is reducing transmission losses by implementing reactive power compensation	Reactive power compensation at distribution and utilization stages
	6.11 Explore minimum standards and energy labels for appliances			Demand side management
7. Ensure that energy is produced and utilized in an environmentally sound manner	7.1 Promote the use of environmentally friendly energy supply sources such as renewable energy (solar, wind, waste) in the energy supply mix of the country			Demonstrate sustainable use of renewable energy in remote areas
	7.2 Encourage a shift from oil to gas wherever gas is a technically feasible alternative			
	7.3 Promote the use of improved wood fuels burning equipment for cooking in households and other commercial activities			
	7.4 Support and actively participate in international efforts and cooperate with international organizations that seek to ensure sustainable delivery of energy to mitigate negative environmental impacts and climate change			
	7.5 Encourage and enable all relevant entities engaged in activities in the energy sector to explore and access international environmental financial mechanisms and markets to overcome investment, technology and other relevant barriers			Facilitate accessing global multilateral and bilateral funds by developing a database of available mechanisms and markets

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	7.6 Ensure effective disposal of all hazardous substances and materials associated with the production, transportation and use of energy			
	7.7 Facilitate environmental protection awareness programmes			
8. Mainstream Gender into the energy sector	8.1 Support the capacity development of women in the energy sector			Affirmative action for women at management level
	8.2 Ensure participation of women in the formulation and implementation of energy interventions			Involving female scientists and engineers as well as tertiary students in related fields
	8.3 Ensure that concerns of women and children are taken into account in every aspect of energy production and distribution			Actively seek opinions of women at design and implementation stages
	8.4 Promote the use of modern forms of energy in households			
9. Build a transparent and effective regulatory environment as well as strengthen the regulatory institutions to fulfill their mandate effectively	9.1 Harmonize the legal, regulatory and institutional regimes in conformity with the ECOWAS Energy Protocols			
	9.2 Streamline regulations and institutional arrangements			

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	9.3 Strengthen human resource capacity of the regulatory institutions	Capacity Building Programmes for PURC staff	Some Training programmes for PURC staff are currently being sponsored by SECO. This programme ends Dec. 2012.	Strengthen the Human capacity of PURC staff.
	9.4 Ensure the independence of the national regulatory institutions			
	9.5 Implement administrative and regulatory changes that will enhance the financial independence of regulatory institutions		PURC is funded through a portion of the electricity tariff	
	9.6 Strengthen the capacity of regulatory agencies to enforce regulations			
10. Encourage public and private sector investments in the energy sector	10.1 Provide conducive legal, fiscal, and regulatory environment to attract investments into the energy sector			Legal backing to IPP/ PPP framework Expedite establishment of appellate body.
	10.2 Encourage the capital markets, including the Ghana Stock Exchange, to raise financing for investments in the energy sector			
	10.3 Expand capital & risk capacity of financial system to support energy driven and oil and gas based industries			
	10.4 Establish transparent and non-discriminatory practices in the implementation of rules and regulations			

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	10.5 Ensure efficient and transparent pricing regime for energy services	<ul style="list-style-type: none"> • Develop Automatic Adjustment Formula for Electricity Pricing. • Review of Electricity Rate setting Guidelines • Programmes also include those mentioned under “Achieve cost recovery for electricity services” in 1.7 above. 	<ul style="list-style-type: none"> • PURC developed the formula and started implementation in the Q1 of 2011. • Review in progress 	<ul style="list-style-type: none"> • Assist in review of tariff model
11. Build adequate Ghanaian human resource capacity in the control and management of the energy sector, and create an enabling environment for effective R&D	11.1 Develop a comprehensive local content policy in all aspects of energy sector operations			
	11.2 Ensure maximum ownership and management control of all aspects of the energy sector			
	11.3 Support the training of Ghanaians in all fields of energy development and management and build capacity in indigenous manufacture of energy technologies			
	11.4 Increase the allocation of resources for energy R&D activities			
	11.5 Give priority to adaptive R&D in energy technology while promoting basic research			

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	11.6 Support the transformation of Ghanaian energy research institutions into Centres of Excellence for energy research and development			
	11.7 Collaborate with relevant Government, local and international agencies to develop capacity of tertiary and allied institutions for Training, R&D			