

EXECU	ITIVE SUMMARY	3
1.0 R	eview of Activities: Energy & Energy Statistics Division	6
1.1	Petroleum-Based Imports	6
1.2	Consumption of Petroleum Products	8
1.3	Acquisition Cost and Retail Prices	9
1.4	Research	12
1.5	Grid-Tie Solar Photovoltaic Demonstration Project	14
1.6	Cooking Stoves	14
1.7	LCDS	17
1.8	Test Bench	17
1.9	Kato Hydropower and Irrigation Project	17
1.10	Amaila Falls Hydroelectric Project	18
1.11	Tumatumari Hydropower Project	19
1.12	Wind Energy	19
1.13	Photocells Change-out	19
1.14	Energy Assessments/Audits	20
1.15	Improving Health Facility Infrastructure (IHFI) Project	20
1.16	Energy Week	21
1.17	Duty and VAT exemptions for Renewable Energy Equipment and Energy Efficient Lights	25
1.18	Information Dissemination and Awareness Activities	25
2.0 R	eview of Activities: Legal & Licensing Division	28
2.1	Petrol Filling Station Inspections	29
2.2	Drafting	29
3.0 R	eview of Activities: Fuel Marking Division	30
3.1	Sample Analysis	30
3.2	Analysis by Site	31
3.3	Analysis of Test Results	32
3.4	Quantity of Illegal Fuel Seized	33
3.5	Volume Analysis	33
3.6	Prosecutions	33
4.0 R	eview of Activities: Administration and Human Resource Division	35
4.1	Professional Development	35
4.2	Administration and Infrastructural Enhancement	41
5.0 R	eview of Activities: Finance Division	42
Append	lix: Legislation, Mandate and Overview of the Divisions	43
Legis	lation	43
Ene	ergy & Energy Statistics Division	45
Leg	al & Licensing Division	46
Fue	el Marking Division	4/
Ad	ministration and Human Resource Division	4/
Fin		48
Organiz	zation Structure	49

EXECUTIVE SUMMARY

A total of 4,875,259 barrels of petroleum-based products was imported in 2012 with an average of 13,320 barrels per day. This represents a 13.42% increase when compared to 2011 and a record high. Petroleum imports for 2012 were acquired at a cost, insurance and freight (CIF) value of US\$599,946,823, representing an increase of 9.43% from that of the previous year. Seventy-six percent (76%) or 2,378,982 barrels (6,915 bpd) of total imports were obtained under the PetroCaribe Agreement during 2012 which resulted in the disbursement of US\$178,830,961 (approximately G\$36.8 billion) to the Ministry of Finance as the Financed Portion under the PetroCaribe Agreement.

Consumption of mogas (gasoline) for the year 2012 increased by 11.09% compared to 2011. Gasoil (diesel) consumption recorded a 9.22% increase in total volumes (including the large duty-free consumers) in 2012 when compared to 2011. Consumption of gasoil by the oil companies only (excluding the large duty-free consumers) increased by 13.35%. The increase in gasoil consumption correlates with the overall sustained growth of the economy and decreased availability of smuggled fuel, presumably due to the success of the monitoring and enforcement activities of the Fuel Marking Programme. Kerosene consumption increased by 17.25% while LPG consumption increased by 3.85%. Consumption of Avjet/Jet A-1 increase in Avjet/Jet A-1 consumption is reflective of increased activity at the Cheddi Jagan International Airport. Despite a reduction in total Avgas consumption, there was a noted rise in imports from ASL and CAMS indicating increased market shares for these companies. Fuel oil consumption increased by 13.99% which correlates with increased production in the bauxite mining sector and GPL's ongoing transition from diesel to fuel oil.

The average cost per barrel of petroleum-based imports decreased from US\$127.55 in 2011 to US\$123.06 in 2012, a decrease of 3.52%. This downward trend also continued for the average unit CIF value for each petroleum product with the exception of Gasoil which increased slightly by 0.49%. There were decreases of 6.70%, 0.39% and 3.44% in the average unit CIF value (US\$/bbl) for mogas (gasoline), jet fuel/kerosene and fuel oil, respectively. The average unit CIF value for aviation gasoline (avgas) and cooking gas (LPG) also decreased by 10.81% and 21.62%, respectively.

GEA conducted surveys to garner public opinion on sustainable energy in Guyana, researched and built efficient wood stoves, commenced data collection to assess and demonstrate the energy potential of rice husk and woodwaste.

Supported by the Austrian Development Corporation (ADA) and Deutsche Gesellischaft fur Internationale Zusammenarbelt (GIZ), GEA installed an 8.46kW Grid-tie Photovoltaic (PV) System to promote the use of renewable energy in Guyana, gain understanding of grid-tie opportunities and demonstrate the use and application of solar photovoltaic grid-tied technology.

GEA assisted Office of the Prime Minister (OPM) with the Energy Access at community level for MDG achievement in Hinterland area Project, a United Nations Development Programme (UNDP)

Project, with the promotion and distribution of 507 solar cooking stoves, sensitization and demonstration of energy efficient wood stoves and the installation of two bio-digesters. GEA, with support from UNDP, prepared a test bench capable of monitoring and logging vital information about solar PV system performance and held a workshop to demonstrate same.

Engineers of the GEA provided support to the Hinterland Electrification Unit under the Office of the Prime Minister under the LCDS Programme to provide training, installations and inspections of about 11,000 65-Watt Solar home systems.

GEA participated and provided support for the activities of the 165 MW Amaila Falls Hydroelectric Project, Tumatumari Hydropower project and the 330kW Kato hydropower project on the Chiung River.

GEA's Engineers assisted Guyana Water Inc. (GWI) to dismantle a wind measurement system located at Orealla Village on the Corentyne River for relocation on the East Coast of Demerara to conduct wind measurement studies to determine the feasibility of installing wind turbines to generate electricity for water pumps at different well locations on the coast

In an effort to promote energy conservation, GEA's Engineers, with support from the Ministry of Public Works, Work Service Group (WSG), conducted a series of photocell replacement activities on the street lamps remaining lit during the day. The efforts would result in the replacement of some 2,000 defective photocells. The Guyana Energy Agency undertook the energy assessments/audits of 20 Government buildings with the objective of reducing energy consumption and improving energy awareness. The Improving Health Facility Infrastructure (IHFI) project, funded by USAID, conducted an energy audit and workshop for the Georgetown Public Hospital. In Guyana, IHFI is focusing on solar PV electrification of rural health centres and clinics, but has also identified the existing need and potential for energy efficiency improvements for the larger hospitals, as represented by Georgetown Public Hospital.

Energy Week 2012 under the theme "Sustainable Energy: Powering a Green Economy" included a Poster Board Activity, Radio quiz, Presentation to 4th Form Students, Guyana's First Energy Forum, Launch of *Guidelines for an Energy Efficient Home* e-book and launch of an Essay Competition for Secondary Schools.

GEA participated in several expos throughout the year and interacted with members of the public providing information brochures, bumper stickers, press releases, newspaper pull-outs, radio and TV infomercials with energy conservation tips.

Machinery and equipment for obtaining, generating, and utilizing energy from renewable energy sources and energy efficient lamps were, in 2012, zero-rated for VAT and made fully exempt from import duties.

Licensing activities experienced an overall growth of 18% with 1,203 licences issued in 2011 compared to 1,415 in 2012.

4

Under the Fuel Marking Programme, a total of 8,323 sites were visited during the year. 1,648 sites were sampled at least once. 13 (1%) of the sites sampled at least once were found with significant dilution (defined as more than 50%) in at least one tank. From 2006 to 2012, the percentage of sites found with significant dilution in at least one tank has progressively decreased from 34% in 2006 to 1% in 2012. Significant levels of adulteration (defined as more than 50%) were detected in only 1% of the samples analysed. There was also a significant decrease in the volume of illegal fuel seized.

With support from the Task Force on Fuel Smuggling and Contraband, chaired by the Minister of Home Affairs, the Fuel Marking Programme recorded 13 convictions from 10 completed prosecutions, three (3) of which were guilty pleas. Four (4) new charges were filed in 2012 compared with thirteen (13) in 2011, twenty- seven (27) in 2010, seven (7) in 2009 and three (3) in 2008. At the end of 2012, there were ten (10) prosecutions engaging the attention of the courts.

An additional metric to evaluate the performance of the Fuel Marking programme is a measure of gasoline, diesel and kerosene consumption (excluding large duty-free consumers). For the oil companies, 3,404,107 barrels of petroleum-based products were sold in 2012 with an average of 9,301 barrels per day. This represents a 12.97% increase when compared to 2011. The upward trends of gasoil (diesel) and mogas (gasoline) correlate with economic growth and the successes of the Fuel Marking Programme.

The staff of the Agency benefited from training and workshops in several areas: aviation fuel handling, investigation skills, terrorism, solar energy and photovoltaics, energy management standards, energy assessments/audits, wind energy, bio-energy, energy information management, research, development and innovation for sustainable development, energy governance, customer care, secretarial practice, database management and supervisory management.

1.0 Review of Activities: Energy & Energy Statistics Division

I.I Petroleum-Based Imports

For the year 2012, the Division facilitated the importation of one hundred and one (101) shipments of petroleum-based products on Guyana's behalf, an increase from eighty-nine (89) shipments in the previous year.

Sixty-seven (67) shipments were lifted under the PetroCaribe Agreement, four (4) shipments were lifted under a spot arrangement with PDVSA and thirty (30) were lifted from Petrotrin, Trinidad.

Under the PetroCaribe Agreement, 2,378,982 barrels were imported during 2012, representing a 63.86% increase when compared to volumes in 2011. This increase in volume in 2012 was accompanied by increases in total shipment value and long-term financing portion of 69.96% and 69.97% respectively.

Year	No. of	PetroCaibe Imports	Total Shipment Value	Financed Portion	
	Shipments	(BBLS)	US\$	US\$	
2007	23	640,895	61,280,208.48	34,018,214.65	
2008	39	1,419,868	157,368,355.00	77,272,045.00	
2009	25	1,079,252	76,352,581.00	43,499,144.00	
2010	25	1,022,907	89,232,813.00	44,396,608.00	
2011	35	1,451,843	175,811,947.47	105,211,401.68	
2012 (Jan-Dec)	67	2,378,982	298,812,764.74	178,830,961.05	
Total	214	7,993,747	858,858,669.69	483,228,374.38	

Guyana, for the year 2012, imported 6,915 bpd from Venezuela, exceeding the contractual volume (supply quota) by 1,715 bpd and resulting in an increase of approximately 74% from 2011.

In terms of the additional volumes for 2012, it should be noted that it was agreed with PDVSA's Commerce and Supply Department that four (4) shipments lifted during the period December 28, 2012 to December 31, 2012 would not be included under the PetroCaribe Agreement since these shipments would be treated under a "Spot" arrangement (that is, full cash payments would be made without accumulating the financing portions). As a result, 6,500 bpd of refined petroleum products were lifted under the PetroCaribe Agreement while 415 bpd were treated under a "Spot" arrangement. It should be noted that shipments treated under the spot arrangement would be excluded from the Debt Compensation Arrangement approved at the 8th Ministerial Council Meeting of PetroCaribe which facilitated the cancellation of Guyana's oil debt to Venezuela in compensation for white rice and paddy shipped under the Guyana/Venezuela Rice Trade Agreements.

The surplus was mainly a result of unavailability of products from Petrotrin, Trinidad from October 2012 to January 2013. Furthermore, the oil companies have increased their

nominations to PDVSA in 2012 due to the price advantage from PDVSA when compared to Petrotrin.

It was observed that there was a 30% shift in volumes lifted from Petrotrin to PDVSA in 2012 when compared to the previous year. This indicates that in 2012, Guyana was sourcing a greater proportion of its petroleum imports from Venezuela in comparison to Trinidad.

The Table below shows a comparison of the quantity of fuel shipments (measured in barrels per day) imported from PDVSA and Petrotrin respectively for the years 2011 and 2012.

Vear	PD	/SA	Petrotrin				
Tear	Bpd	%	Bpd	%			
2011	3,978	46%	4,678	54%			
2012	6,915	76%	2,212	24%			



In 2012, total petroleum imports recorded an overall increase of 13.42%. A total of 4,875,259 barrels of petroleum-based products was imported in 2012 with an average of 13,320 barrels per day. This represents a 13.42% increase when compared to 2011 and a record high for the past 19 years.

There were significant increases in the importation of Mogas, Avjet, Fuel oil and Gasoil during the year while LPG imports declined slightly. Decreases in import volumes were observed for Kerosene and Avgas.

I.2 Consumption of Petroleum Products

The Guyana Energy Agency was supplied with data on sales volume of petroleum products from the oil companies for the year 2012 which was used in the computation of consumption figures. For the remaining importers, consumption of petroleum products was calculated based on opening stock, closing stock and import volumes for the year.

	TOTAL CONSUMPTION (BBLS)											
		2011 YTD	2012 YTD	% change								
er	Mogas	1,026,272	1,140,119	11.09%								
a m	Gasoil	1,984,948	2,167,950	9.22%								
ece	Kero	77,718	91,122	17.25%								
Ŏ	Avjet	72,823	138,787	90.58%								
Σ	Fueloil	1,044,815	1,190,973	13.99%								
nua	LPG	173,870	180,565	3.85%								
Jar	Avgas	13,675	12,333	-9.81%								
	Total	4,394,122	4,921,849	12.01%								
	Bdp	12,039	13,448									



A total of 4,921,849 barrels of petroleumbased products was consumed in 2012 with an average of 13,448 barrels per day. This represents a 12.01% increase when compared to 2011. There were significant increases in the consumption of Mogas, Avjet, Kero and Fuel oil. There were also increases in consumption of Gasoil and LPG while Avgas consumption declined for the year.

The increase in gasoline consumption for 2012 can be attributed to an increase in motor vehicles registered in 2012 while diesel consumption the rise in is result of decreased presumably а availability of smuggled fuel due to the of the monitoring success and enforcement activities of the Fuel Marking Programme. The increase in Fuel oil consumption correlates with increased production in the bauxite mining sector and GPL's ongoing transition from diesel to fuel oil. The increase in Aviet/let A-I consumption is reflective of increased activity at the Cheddi Jagan International Airport. Despite a reduction in total Avgas consumption, there was a noted rise in imports from ASL and CAMS indicating increased market shares for these companies.



1.3 Acquisition Cost and Retail Prices

Petroleum imports for 2012, which amounted to 4,875,259 barrels, were acquired at a cost, insurance and freight (CIF) value of US\$599,946,823, representing a significant increase of 9.43% from acquisition cost in 2011.

TOTAL IMPORTS OF PETROLEUM PRODUCTS FOR									
	PERIO	D 1994 TO 2012	2						
	VOL	UME	CIF VALUE						
	BBLS	LTRS	US\$						
1994	3,095,728	492,180,508	72,067,912						
1995	3,624,053	576,177,314	85,161,130						
1996	3,711,893	590,142,732	100,696,609						
1997	4,093,677	650,841,425	107,727,233						
1998	4,125,765	655,943,000	78,539,499						
1999	4,137,266	657,771,510	99,704,391						
2000	3,924,614	623,962,606	143,277,974						
2001	3,834,651	609,659,659	123,373,521						
2002	3,865,505	614,565,043	122,643,684						
2003	3,980,199	632,799,898	153,193,966						
2004	3,901,760	620,329,117	185,702,255						
2005	3,546,069	563,778,872	240,663,147						
2006	3,179,925	505,566,736	251,594,083						
2007	3,910,234	621,676,373	325,461,550						
2008	3,727,410	592,609,734	410,442,230						
2009	3,872,679	615,705,616	282,073,925						
2010	4,152,412	660,179,527	376,761,853						
2011	4,298,336	683,379,591	548,264,213						
2012	4,875,259	775,102,847	599,946,823						
TOTAL	73,857,436	11,742,372,108	4,307,295,998						



TOTAL IMPORTS BY PRODUCTS FOR THE YEAR											
	<u>2012</u>										
PRODUCTS	VOLUM	E	C.I.F VALUE								
	LTRS	BBLS	US\$								
MOGAS: UNLEADED	184,897,014	1,162,969	148,820,818								
GASOIL (0.5S)/DIESEL	330,420,746	2,078,288	274,966,049								
KERO	14,480,358	91,079	12,187,807								
AVJET	22,929,349	144,222	19,875,530								
FUELOIL	193,402,598	1,216,468	127,268,973								
AVGAS	1,962,218	12,342	2,653,644								
L.P.G	27,010,564	169,892	14,174,002								
TOTAL	775,102,847	4,875,259	599,946,823								

Generally, for 2012, Gasoil was the most imported product representing 43% of total imports and a CIF value amounting to 46% of total acquisition expense. Fuel oil and Mogas followed Gasoil reflecting 25% and 24% of total imports respectively with corresponding CIF values amounting to 21% and 25% of total acquisition costs respectively. The remaining products (Kerosene, Avjet, LPG and Avgas) constituted no more than 8% of total imports and total acquisition costs.



The average cost per barrel of petroleum-based imports decreased from US\$127.55 in 2011 to US\$123.06 in 2012, a decrease of 3.52%. This downward trend also continued for the average unit CIF value for each petroleum product with the exception of Gasoil which increased slightly by 0.49%. There were decreases of 6.70%, 0.39% and 3.44% in the average unit CIF value (US\$/bbl) for mogas (gasoline), jet fuel/kerosene and fuel oil, respectively. The average unit CIF value for aviation gasoline (avgas) and cooking gas (LPG) also decreased by 10.81% and 21.62%, respectively.



During this period, there was a gradual tightening in world markets as increases in global consumption outpaced production growth in countries outside of the Organization of the Petroleum Exporting Countries (OPEC). The US Energy Information Administration (EIA) expected that a reliance on both inventories and increases in production of crude oil and noncrude liquids from OPEC members to meet world demand growth. In addition, supply disruptions in the Middle East and Africa contributed to a significant increase in world crude oil prices. For instance, in the former Sudan, an unresolved dispute between Sudan and the newly independent South Sudan over transit fees and other issues caused the latter to shut in all of its production at the end of January. In Yemen and Syria, civil conflict compromised a significant portion of each country's oil output. Yemen's production was decreased by an outage to the Marib pipeline and was further reduced in February by a strike at the country's largest oil field. In Syria, damage to a major pipeline that feeds one of the country's two refineries had intensified the country's production problems.

Moreover, the Iranian oil sanctions imposed by the U.S. and European governments, which was followed by Iranian threats to close the Strait of Hormuz in mid-2012, heightened market anxiety surrounding a potentially significant supply disruption from OPEC and may have further increased oil prices.

The upward pressures on oil prices was contrasted in May when global crude oil prices fell and was accompanied by a decrease in FOB prices across all products. This was driven by increased global supply over consumption. Industry analysts attributed some of the recent decline in oil prices to poor economic indicators for Europe, China, and the United States, in addition to reduced market anxiety over current and potential supply disruptions. Supply disruptions in the Middle East and Africa were reduced significantly by mid-2012 with the repair of the Marib pipeline in Yemen and a resolution reached between Sudan and South Sudan. Prices started to rise towards the end of the third and fourth quarters due to seasonal demand with US production being partially affected during the hurricane season.



Average retail prices for Mogas (gasoline), Gasoil (diesel) and Kerosene decreased during 2012 by an average of 1.10 percent, notwithstanding high acquisition cost for these products earlier in the year. This demonstrates government efforts to minimize economic shocks resulting from noteworthy increases in global oil prices. It should be noted that on April 11, 2012, the Government implemented a reduction of the excise tax on petroleum imports to 10% for both Mogas and Gasoil (reflecting a 5% percent decrease for both products). Towards the end of the year, there was downward pressure on prices due to falling FOB prices and, subsequently, on December 11, 2012, the excise tax was increased to 20% for Mogas and 15% for Gasoil (reflecting a 10% and a 5% rise for Mogas and Gasoil respectively).

Average retail price for diesel increased by 2.26% while retail price for domestic kerosene increased by 0.83%. There were also decreases in the average retail prices for gasoline and cooking gas (LPG) of 6.05% and 4.56% respectively.

I.4 Research

1.4.1 With the support of the European Union, the Caricom Secretariat and Caribbean Energy Ministries conducted a Regional Public Consultation on Caribbean sustainable energy development. This was the first phase in the development of a Regional Energy Conservation Awareness Programme and in preparation of national strategies for its implementation. During this phase, Officers of the GEA conducted a pilot survey to garner public opinion on sustainable energy in Guyana. The objective of the survey was to assess the knowledge, practices and attitudes of the Guyanese general public with relation to Energy Efficiency and Conservation. The survey was conducted at the household level and distributed to a sample of forty (40) persons. The results from this survey will help to design better energy efficiency and conservation programmes and to

create effective approaches for improving the Agency's awareness campaigns and communication capabilities, particularly during Energy Week activities.

1.4.2 Three "fireside" stoves (wood stoves) were tested using a standard water-boiling test protocol. The motivation behind the design was to construct a wood stove with indigenous materials that would be available in the interior locations of Guyana while minimizing the use of firewood. The test involved monitoring each fireside individually using same amount of firewood, same pot and the same amount of water, and recording the temperature of the water at I minute intervals after the fire was lit.

> Mud was used to construct a cylindrical-shaped wood stove to test and compare its performance. The stove had one opening for firewood, one air vent and one exhaust, and was designed with one cavity for cooking.







- 1.4.3 GEA's engineers commenced data collection for the rice mills operating in Guyana to determine capacity, estimated volume of paddy milled, estimated rice husk production, current use/disposal practices for rice husk, energy demand, etc. to prepare estimates of energy potential of rice husk.
- 1.4.4 In an effort to promote the use of biomass waste for electricity generation and other energy use, GEA's engineers have commenced a data collection exercise to determine the extent of biomass waste generated and its potential as an alternative source of energy.

I.5 Grid-Tie Solar Photovoltaic Demonstration Project

GEA was supported by the Austrian Development Corporation (ADA) and Deutsche Gesellischaft fur Internationale Zusammenarbelt (GIZ) in the installation of an 8.46kW Grid-tie Photovoltaic (PV) System to:

- promote the use of renewable energy in Guyana;
- gain understanding of grid-tie opportunities; and
- demonstrate the use and application of solar photovoltaic grid-tie technology.

The PV system is expected to generate approximately 13,895 kWh of renewable energy per year and would be capable of replacing an equivalent amount of energy generated that would have otherwise been generated from fossil-based fuels at a cost of G\$914,429 per year. The simple payback for the project based on a capital cost of G\$6,904,466 would be just under 8 years.

The GEA worked closely with the electric power company to pilot the net-metering demonstration project such



that Guyana can explore the opportunities and gain experience related to the operation of gridtied systems. This venture provided an opportunity for the power company, the GEA and other stakeholders to gain a deeper understanding of the implications of the technology and exemplified the opportunities for grid-tie systems to reduce barriers to the use of renewable energy.

I.6 Cooking Stoves

The Energy Access at community level for MDG achievement in Hinterland area Project, a United Nations Development Programme (UNDP) Project, implemented by Office of the Prime Minister (OPM), aims to provide energy services, electricity or cleaner fuels in rural areas to all Hinterland villages at the community level by 2015.



The Guyana Energy Agency (GEA) is currently assisting OPM in the promotion and distribution of solar cooking stoves, energy efficient wood stoves and the installation of two bio-digesters to five (5) communities, namely Shulinab, Rupertee, Powaikoru, Kangaruma and Tuseneng. The solar cookers are assumed to be most useful for water sanitization, water heating and food preparation.

During the year, GEA's Energy Engineer visited the villages of Annai, Wowetta, Surama, Aranaputa and Rupertee in Region 9 to review the wood stoves provided by OPM under a UNDP project in 2006.





Residents assembling their solar cookers after viewing the Instructional DVD

Apart from the distribution of solar cookers to interior villages, solar cookers and protective sunglasses were allocated to be distributed to several educational institutions and organizations for demonstration purposes. Solar cooker distribution to the Hinterland Communities:

	Location	Amount	Uses	Status	
	Shulinab	Amount	Uses	Status	
	Household	81	Cooking		
	School	1	Cooking/Demonstration		
	Health Center	1	Sterilization/hot water		
Region 9				Completed	
	Rupertee			Completed	
	Household	61	Cooking		
	School	1	Cooking/Demonstration		
		145			
	Powaikoru				
	Household	40	Cooking		
Decise 1				Commissional	
Region 1	Mabaruma			Completed	
	RDC	1	Demonstration		
		41			
	Tuseneng				
	Household	37	Cooking		
	Bambo Creek School	1	Cooking/Demonstration		
Pogion 9	Bambo Creek Health Center	1	Sterilization/hot water	Completed	
Region o	Mountain Foot School	1	Cooking/Demonstration	Completeu	
	Paramakatoi School	2	Cooking/Demonstration		
	Paramakatoi CDO	1	Demonstration		
		43			
	Kangaruma				
	Household	58	Cooking		
Region 7	School	5	Cooking/Demonstration	Completed	
-	Health Center	1	Sterilization/hot water		
		64			
7	Fotal Cookers	293			
	1	1			

Partners	Estimated number of Solar cookers	Delivered
5 Communities	308	293
Ministry of Health	50	50
Ministry of Education	50	50
Conservation International/Bina Hill	20	
GEA	2	
UG	5	
Guyana School of Agriculture	10	
NARI	5	
IAST	2	
TAIN Campus	5	
Guysuco Training Centre, Port Mourant	5	
Guyana Industrial Training Centre	10	10
Government Technical Insitute	10	10
Kuru Kuru Technical Insitute	5	5
Linden Technical Institute	5	
Essequibo Technical Insitute	5	
New Amsterdam Technical Institute	5	
Red Cross	5	
Total	507	418
	Percent Delivered =	82%

Overall Solar Cooker Distribution

I.7 LCDS

The GEA provided support to the Hinterland Electrification Unit under the Office of the Prime Minister with respect to the training of personnel for the installation of Solar Home Systems under the LCDS Programme. GEA's Engineers assisted the Office of the Prime Minister and Hinterland Electrification Unit with the 11,000 65-Watt Solar home system training, installations and inspections.

I.8 Test Bench

GEA, with support from UNDP, prepared a test bench for the testing of solar equipment. The test bench has the capability of monitoring and logging vital information about system performance. The system includes a control circuit capable of automatic switching to simulate field conditions to monitor, for example, battery performance. A workshop was conducted with key stakeholders in June 2012 to demonstrate the test bench.

1.9 Kato Hydropower and Irrigation Project

A team comprising of members from the engineering department of GEA, surveying consultant and a hydropower consultant visited the proposed Chiung hydropower site on the Chiung River at Kato in Region 8.



Proposed Dam Site

The volume of the reservoir and the potential height of the dam are to be determined from the topographic survey's results.



Proposed Reservoir Site

It is important to note that the reservoir area is currently vegetated with shrubs, trees and grass. The shrubs and trees need to be removed prior to reservoir impoundment to avoid water quality problems and formation of methane gas.



Conductivity test to measure discharge of the river

1.10 Amaila Falls Hydroelectric Project

The Government of Guyana, in the development of the Amaila Falls Hydroelectric Project has continued to engage Sithe Global Power, a US-based international energy company. By virtue of this relationship, there have been significant steps forward in bringing this project to fruition. The logistics of the Amaila Hydropower Project (hereinafter referred to as the 'Project') have

been extensively outlined in the ESIA, indicative of the proposed plans and inevitable benefits of the said Project.

The Project comprises three main components: the Hydropower Facility to be located approximately 200km from Georgetown, the Electrical Interconnection which consists of the 230 kV transmission line and two substations located at Linden and Georgetown, and the Access Road which consists of the construction and upgrade of new and existing roads to provide access to the transmission line and Facility as aforementioned.

As it has been stipulated, Government of Guyana is responsible for the latter under which is subsumed the responsibility of clearing a specified area for the transmission-line alignment from where it crosses the Kuribrong River to the hydropower site. It is upon such contractual obligations which have given rise to the delegation of responsibilities to the various Government agencies.

A series of meetings were convened in 2012 with representatives from NICIL/PU, GEA, GFC, GGMC and GPL to discuss impact of the transmission line route on mineral and timber rights.

In an effort to have an overview of the entire area, GFC and GGMC worked collectively to create a single map to highlight the mineral and timber rights and acreages within the area.

I.II Tumatumari Hydropower Project

GEA's Hydropower Support Engineer visited the Tumatumari hydropower project site located in Region 8 at the confluence of the Potaro and the Tumatumari River to review the status of the rehabilitation being undertaken by Dynamic Engineering Ltd. During the latter part of 2012, a team comprising representatives from OPM, NICIL/PU and GEA reviewed a draft Power Purchase Agreement for the supply of power to Mahdia Power and Light Inc from Tumatumari Hydro Inc.

I.I2 Wind Energy

GEA's Engineers assisted Guyana Water Inc. (GWI) to dismantle a wind measurement system located at Orealla Village on the Corentyne River. The system will be used at a GWI location on the East Coast of Demerara to conduct wind measurement studies to determine the feasibility of installing wind turbines to generate electricity for water pumps at different well locations on the coast.

1.13 Photocells Change-out

In an effort to promote energy conservation, GEA's Engineers, with support from the Ministry of Public Works, Work Service Group (WSG), conducted a series of photocell replacement activities on the street lamps remaining lit during the day. The efforts would result in the replacement of some 2,000 defective photocells. Based on the current Street Lighting tariff of

G\$55.67 per kWh, for each lamp remaining lit during the day, the energy wasted per lamp costs about G\$60,958 per year.



Lamps that are on during day-time hours



Photocells being replaced

One hundred and fifty (150) defective photocells from Timehri to Houston on the East Bank of Demerara were replaced in the month of December. For the 150 photocells replaced, it is estimated that 12,976 kWh of energy would be saved per year with an estimated financial savings of G\$8,668,320.

1.14 Energy Assessments/Audits

The Guyana Energy Agency undertook the energy assessments/audits of 20 Government buildings with the objective of reducing energy consumption and improving energy awareness. Each of the 20 identified entities was requested to identify a 4-person team (gender-balanced) referred to as the "Energy Champions". Their role is to champion the energy conservation efforts and influence behavioural change within the organisation, with the intention of becoming a permanent feature for continued monitoring and sensitization. In addition, employees received brochures and training sessions to help influence behavioural changes in relation to energy consumption. Measurements of energy consumption were conducted before and will be conducted after (in 2013) to assess the effectiveness of the activities.

1.15 Improving Health Facility Infrastructure (IHFI) Project

The Improving Health Facility Infrastructure (IHFI) project, funded by USAID, conducted an energy audit and workshop for the Georgetown Public Hospital. In Guyana, IHFI is focusing on solar PV electrification of rural health centres and clinics, but has also identified the existing need and potential for energy efficiency improvements for the larger hospitals, as represented by Georgetown Public Hospital. IHFI staff:

Conducted an *investment-grade energy audit* to identify specific detailed energy efficiency measures and their cost-effectiveness.

- Took *measurements and logged data* to determine an approximate energy balance and provide the basis for the energy savings and implementation cost estimates.
- Provided on-the-job training to several engineers on energy auditing.
- Developed a **model energy audit** report that can be used as the basis for other hospitals and additional building audits.
- Delivered a **two-day workshop on energy audit** fundamentals, using the results of the hospital energy audit.

The energy audit was conducted from 25^{th} April and lasted four days. The energy audit was subsequently followed by a two-day workshop on energy audit work, which took place on 2^{nd} and 3^{rd} May at the Cara Lodge.

I.I6 Energy Week

The Guyana Energy Agency, in the exercise of its mandate, continues to promote energy efficiency, energy conservation and the development and utilisation of alternative sources of energy. Energy Week serves as an annual feature in fulfilling part of the mandate of the GEA by disseminating information essential to improving public awareness on sustainable energy, conservation and overall efficiency.

This year's Energy Week activities featured significant developments in the sustainable energy

agenda at an international level. The United Nations General Assembly declared 2012 the International Year of Sustainable Energy for All, recognizing that "...access to modern affordable energy services in developing countries is essential for the achievement of the internationally agreed development goals, including the Millennium Development Goals, and sustainable development, which would help to reduce poverty and to improve the conditions and standard of living for the majority of the world's population." In this regard, the theme for Energy Week 2012 was **"Sustainable Energy: Powering a Green Economy".** This year, Energy Week was celebrated from November 11th -17th, simultaneously observed across the Caribbean by Caricom member states.

Poster Board Activity

To kick off the week, the GEA held a Poster Board Activity on November 12, 2012. This activity, aptly themed 'Express your Energy' was intended to allow children to convey their interpretation of energy efficiency, energy conservation and sustainability



through artwork and pictorial illustrations in a non- competitive environment.

The Poster Board Activity took place in the compound of the Guyana Energy Agency and received participation of thirty-two (32) children between the ages of nine to eleven from five (5) primary schools, namely ISA Islamic School, Jos-El Institue, Mae's Schools, Winfer Gardens Primary and St. Margaret's Primary. The children were invited to illustrate their understanding of the themed scenarios, such as 'Green Economy', 'How can I save energy around the home?' and 'Forms of Energy', and subsequently present and explain their visual artwork to the rest of the schools. The participating students were named honorary 'Energy Champions' and were each gifted art kits as tokens of their willingness and creativity.

Radio Quiz

GEA continued to sensitise the public at large on energy conservation and efficiency. A radio quiz was aired on 98.1 on November 12, 14 and 15 at 1:10 pm and 5:45 pm respectively where patrons were invited to tune-in, learn and test their knowledge of energy. Twelve questions were presented during the quiz and 7 persons gave correct answers. Two persons each were successful during the Monday and Wednesday segments respectively while 3 persons were successful



during the Thursday segment. Winners of the daily quiz were awarded CFLs and a t-shirt displaying the Energy Week 2012 Logo and theme as prizes.

Presentation to 4th Form Secondary School students and the formation of "Energy Champions" Clubs

A 30-minute power point presentation was prepared and will be presented to various schools. On November 14, 2012, a GEA team made a presentation to Third Form students of Queen's College on energy use and sustainable development and its inextricable link at a national level. The presentation took the form of a video screening and a powerpoint followed by an interactive discussion with the students.





Guyana Energy Forum



As a culmination of the week's activities, the GEA held its first Guyana Energy Forum at the International Convention Centre on November 16, 2012. The Energy Forum was contemplated to continue dialogue and share information among stakeholders in both public and private sector relating to sustainable energy practices.

Guyana Energy Agency MOVEMBER 16, 2012 The Honourable Prime Minister attended the Forum and, in his address, offered remarks on Guyana's Energy Sector and Government's support and commitment to advance green growth and sustainable development as well as to prioritize energy and energy conservation in the national agenda. A representative from the European Union (EU), the financing partner of Caribbean Energy Awareness Week under the Caribbean Renewable Energy Capacity Support (CRECS) Project, was also in attendance. In addition, the Forum had an audience of 27 invitees. Nine stakeholders presented their individual works and involvement in the sector, followed by a question and answer segment where invitees made recommendations and learnt of the various projects.



During the forum, exhibitions by Farfan and Mendes and energy-related projects submitted by Anna Regina and Rosignol Secondary schools at the 2012 National Science Fair were featured.

The GEA launched its E-Book, 'Guidelines for an Energy Efficient Home' a downloadable publication featured on the GEA website which highlights tips for energy conservation through pictures and suggested actions around the home.



Essay Competition for Secondary Schools

GEA launched its Essay Competition for students at the fourth and fifth form levels, entitled 'The Role Sustainable Energy Plays in the Progress of Guyana's Low Carbon Development Strategy.' The deadline for submission of the essays is January 11, 2013. Prizes will be awarded to first, second and third place winners, as well as the school of the first place winner. Winning entries will be used for future publications.

Additionally, full page spreads comprising energy efficiency tips were published in the newspapers on areas such as Building Design, Automobiles, Lighting and Appliances.

The Guyana Energy Agency received

support from Caricom for Energy Week 2012 in the form of funding of specific activities and items. In addition to the coverage of advertising and the radio quiz, the GEA received the following items for prizes associated with activities: 100 t-shirts, 50 compact fluorescent lamps (CFLs), 3 trophies and a plaque.

Overall, the activities of Energy Week 2012 aimed to target different age groups through different mediums- art, media, radio, live discussion. Energy Week 2012 could be considered a success with lessons learnt for the upcoming years. The Energy Forum created a useful foundation for future projects and with this development, a database can be established for a better nexus among key persons in the Energy Sector.

GEA hopes to continue with this large-scale public campaign during the year with continued radio ads, quizzes and television segments. With such presence and continued dialogue among stakeholders, the GEA can continue to fulfil its mandate and be one step closer to powering a Green Economy.

1.17 Duty and VAT exemptions for Renewable Energy Equipment and Energy Efficient Lights



The following Machinery and equipment for obtaining, generating, and utilizing energy from renewable energy sources were, in 2012, zero-rated for VAT and made fully exempt from import duties:

- Solar panels
- Solar Lamps
- Deep-Cycle Batteries
- o Solar Generators
- Solar Water heaters
- Solar Cookers
- DC Solar Refrigerators
- DC Solar Freezers
- o DC Solar Air Conditioners
- Wind Turbines
- Water Turbines
- Power Inverters

For greater efficiency, the following were, in 2012, also zero-rated for VAT and made fully exempt from import duties:

- Compact Fluorescent Lamps (CFL)
- Light Emitting Diode Lamps (LED)

1.18 Information Dissemination and Awareness Activities

- 1.18.1 Officers of GEA participated in the annual Linden Expo held at the Egbert Benjamin Hall during April 27-29, 2012. Brochures and bumper stickers containing energy conservation tips were distributed in an effort to promote public awareness on this area.
- 1.18.2 The GEA issued regular Press Releases on the successes of the Fuel Marking Programme to sensitize persons on the effectiveness of the Programme and as a deterrent to smuggling fuel.
- 1.18.3 The Guyana Energy Agency held the Commissioning Ceremony for the Grid-Tie Solar Photovoltaic Demonstration Project on August 10, 2012. The ceremony was held in the compound of the GEA, 295 Quamina Street, South Cummingsburg, Georgetown. Serving as a platform for the development of new legislative policies and systems such as Net Metering, the installation and use of this technology is the first of its kind in Guyana. It is anticipated that through promotion and public awareness of the benefits of this system, individuals, companies and government institutions can examine the possibilities of installation of similar systems.
- 1.18.4 The National Council of Science Museum (NCSM) in Kolkata, India in collaboration with the Ministry of Culture, Youth and Sport, showcased an exhibition - "India - A Culture of Science" from August 20, 2012 at the Cliff Anderson Sports Hall. This exhibition was set up with the goal of supporting the Government's vision of integrating science, technology, and innovation into activities of every sector by promoting Guyana's

intellectual, institutional and social capacity to create and innovate using science and technology. The Guyana Energy Agency was invited to participate in this exhibition by hosting a booth showcasing its works and technology in action. The GEA participated during August 20- August 27, 2012 at the Cliff Anderson Sports Hall, with its focus on the grid tie solar photovoltaic demonstration project, as well as Solar cookers. The Solar cooker was assembled and patrons were invited to witness the boiling of water using this technology. This actual demonstration was complemented by explanations by the participants from the GEA team. Brochures and pictures on the Solar PV Project were also distributed to those visiting the booth.

1.18.5 The Guyana Energy Agency took part in Building Expo 2012 at the Guyana National Stadium. Items on exhibition were the lighting display board with energy saving tips, parabolic solar cooker and a box-oven cooker. Patrons were amazed by the amount of savings that could be achieved by just by switching to a more efficient lamp.





Additionally, patrons displayed great interest in learning about solar cooking, as this concept was relatively unknown to them. Having displayed the solar cookers and explaining the benefits, patrons were impressed. There was an average of 150 patrons visiting the booth

each night and showed interest in the activities of the Agency.

- 1.18.6 Bumper stickers promoting energy conservation were printed and distributed to various petrol filling stations as well as the oil companies for use and free public distribution.
- 1.18.7 An e-book titled "Guidelines for an Energy Efficient Home" was prepared and placed on the GEA website to disseminate energy conservation information.
- 1.18.8 An e-booklet titled "Bio-digester Information and Construction Manual for Small Farmers" was prepared and placed on the GEA website to promote awareness and encourage the utilization of bio-energy.
- 1.18.9 A report on energy awareness in Guyana was completed and distributed to key stakeholders in the energy sector including Office of the Prime Minister, Caricom's Energy Desk and GPL. The report was compiled based on findings from the regional public consultation on Caribbean sustainable energy development. The report was and

will continue to be useful in designing better energy efficiency and conservation programmes and creating effective approaches for improving the Agency's awareness campaigns and communication capabilities, particularly during the annual Energy Week activities.

1.18.10During the period December 15-31, 2012 the Agency advertised during peak hours via television, two short video infomercials titled *Energy Efficient Lighting* and *Energy, Lets Save it* for a total of 33 showings.



- 1.18.11 The following *hardcopy* Volumes of hydropower studies were scanned and converted to electronic format to facilitate easy dissemination:
 - Upper Mazaruni Hydro–Electric Project Study conducted by ENERGOPROJEKT, 1974.
 - Hydroelectric Power Survey of Guyana conducted by Montreal Engineering Company Ltd. (Monenco), 1976.
- 1.18.12Advertisements on Fuel Smuggling and Energy Efficient Tips were broadcasted on the radio and continued to be featured throughout the year.

Number of Fuel Smuggling Ads in the Newspapers:	19
Number of Fuel Smuggling Ads on the radio:	122
Number of Energy Conservation ads in the Newspapers:	17
Number of Energy Conservation ads on TV:	177
Number of Energy Conservation ads on the radio:	93

2.0 Review of Activities: Legal & Licensing Division

The Division performed exceptionally well during the year and was able to surpass the total number of licences granted to importers, wholesalers, retailers, consumer installations and bulk transportation carriers of petroleum and petroleum products during 2011. The table below shows that licensing activities have seen an overall growth of 18% in 2012 compared to 2011 with 1,203 licences issued in 2011 compared to 1,415 in 2012.

	of 1:00000							2012							2011	Total
Sub-Class	s of Licence	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD	YTD	Growth %
Im	0	0	1	0	4	0	3	1	1	1	2	0	13	18	-28%	
	Wholesale	0	0	0	0	7	1	4	0	0	0	1	0	13	13	0%
Retail	Petrol Filling Stations	12	6	2	7	17	10	21	3	10	5	6	3	102	104	-2%
	Others	22	9	15	11	29	26	22	27	36	40	24	9	270	231	17%
Con	sumer Installation	53	2	16	31	21	50	31	12	53	5	6	1	281	165	70%
Bulk	Road Tanker Wagons	9	10	7	2	10	27	16	11	14	7	15	7	135	119	13%
Transportation	Trucks	48	37	50	48	63	41	34	34	63	63	46	22	549	508	8%
Carrier	Fuel Barges	1	0	0	0	1	0	1	0	0	0	0	0	3	2	50%
	Boats	3	3	10	3	3	1	5	4	10	0	2	5	49	43	14%
	Total	148	67	101	102	155	156	137	92	187	121	102	47	<u>1415</u>	<u>1203</u>	18%

Table illustrating Licences issued from January to December 2012

The table above indicates that five import licences were not renewed for the year 2012. Two entities indicated that they have ceased importation of lubricants and aviation fuel respectively while another three entities are awaiting documents from other regulatory bodies to complete the GEA licensing process.



The 2% reduction in Retail Licences is mainly due to applicants awaiting documents from other regulatory bodies to complete the GEA licensing process.

From the commencement of licensing activities in 2005, the total number of licences granted annually has increased steadily, with 2012 recording the greatest number of licences granted in any one year.

2.1 Petrol Filling Station Inspections

The Division conducted a total of 897 inspections during the course of the year in an effort to ensure continued conformity with the 'GNBS Guidance For The Design, Construction, Modification And Maintenance Of Petrol Filling Stations' and in pursuance of its mandate to ensure continued compliance with the relevant standards and Regulations.



Pie Chart Showing Breakdown of Inspections conducted by the Legal & Licensing Division in 2012

2.2 Drafting

Revision of the **Petroleum and Petroleum Products Regulations 2004** continued throughout the year. A draft revision was submitted to the stakeholders for review and comments. A revised draft will be submitted to the Prime Minister for finalization and gazetting in 2013.

3.0 Review of Activities: Fuel Marking Division

Since implementation of the Fuel Marking Programme in 2003, the Division has, in keeping with the legislative mandate, utilised a marking system to add markers to petroleum products imported by every person under an import licence or import wholesale licence for the purpose of identifying such petroleum and petroleum products as having been legitimately imported. Legally imported fuel was marked with the appropriate marker for the following companies: Rubis (previously Chevron), SOL, Guyoil, BCGI (Bauxite Company of Guyana Inc.), GPL and the Trawlers' Association.

Samples of petroleum and petroleum products were collected from a number of sites throughout Guyana and tests were conducted to determine the presence or proportion of the markers in the respective samples of petroleum products.

The Task Force on Fuel Smuggling and Contraband, under the chairmanship of the Minister of Home Affairs, provided a framework to foster cooperation and coordination among the following key enforcement entities: Guyana Police Force, Guyana Revenue Authority, Guyana Defence Force and Customs Anti-Narcotics Unit. GRA rendered assistance to the GEA in relation to the disposal of illegal fuel. The coordination efforts of the Task Force has positively influenced the efforts to combat fuel smuggling.

3.1 Sample Analysis

The number of fuel samples collected/logged each year is captured in the table below:

2003	2004	2005	2006	2	007			2008		2009		2010		2011			2012				
				McKenzie	9,500		McKenzie	12,191		McKenzie	12,072		McKenzie	14898		McKenzie	15,137		McKenzie	12,500	
434	6,639	9,621	6,104	Bridge		15,223	Bridge		20,639	Bridge		20,799	Bridge		24,659	Bridge		22,405	Bridge		22,875
				Other	5,723		Other	8,448		Other	8,727		Other	9761		Other	7,268		Other	10,375	
N.I.																					

Number of Samples Collected Annually

The number of fuel samples collected/logged in 2012 was 2% more than that collected/logged in 2011.

The table below shows the breakdown of analyses by Region. 25,694 analyses were done in 2012 compared to 24,842 analyses in 2011.

	Number of Quantitative Analyses by Region											
Region	2004	2005	2006	2007	2008	2009	2010	2011	2012			
1	10	79	40	1,134	157	20	55	59	273			
2	777	4,130	1,557	870	613	1,173	1,920	1,408	1,673			
3	496	1,188	908	1,473	3,386	3,927	3,741	2,419	3,479			
4	823	1,183	1,111	809	2,212	1,848	4,420	3,289	4,595			
5	111	403	225	151	354	420	1160	827	1479			
6	599	1,596	165	476	618	376	627	829	931			
7	140	338	195	290	561	170	286	140	295			

8	33	11	61	227	95	76	130	12	135
9	25					5	93	1	64
10	42	168	744	9,457	12,457	12,236	15,839	15,858	12,770
Total	3,056	9,096	5,006	14,887	20,453	20,251	28,271	24,842	25,694

Number of Quantitative Analyses by Region

Notes:

- I. Database to track analyses was installed in July, 2004. Figures were not representative of ALL samples analysed for that year.
- 2. Sampling for 2006 and 2007 was focused on smuggling "hot spots"
- 3. Sampling on a 24-hr basis commenced in 2007 at the McKenzie, Linden Bridge

3.2 Analysis by Site

8,323 site visits were recorded during 2012 compared to 8,515 for 2011.

	2012	2011	2010	2009
Other Regions	4,922	4,276	3,975	3,242
McKenzie Bridge	3,401	4,239	3,994	2,849
Total	8,323	8,515	7,969	6,091

Note: Each truck, boat, retail outlet etc. is counted as a site in this table.

13 incidents of illegal fuel were recorded in the year 2012 compared to 21 in 2011.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2009	1	3	3	1	6	4	7	6	6	4	3	2	46
2010	7	2	2	3	6	3	6	5	2	2	3	10	51
2011	7	0	2	3	1	1	2	1	1	2	1	0	21
2012	1	0	0	0	0	3	0	3	1	1	2	2	13

Of the 8,323 total sites visited during the year, 1,648 sites were sampled at least once.

13 (1%) of the sites sampled at least once were found with significant dilution (defined as more than 50%) in at least one tank. From 2006 to 2012, the percentage of sites found with significant dilution in at least one tank has progressively decreased from 34% in 2006 to 1% in 2012. With more sites visited and less incidents of illegal fuel being discovered, the data suggests that more sites are dealing in legal fuel.

	2004	2005	2006	2007	2008	2009	2010	2011	2012
No. of Sites sampled at least once	573	763	656	566	592	1,202	1,313	1,179	1,648
No. of Sites found with significant dilution in at least 1 tank	72	240	220	128	57	73	45	21	13
% of Sites found with significant dilution in at least 1 tank	13%	31%	34%	23%	10%	6%	3%	2%	1%

Analysis of Site Results

Note: The "No. of Sites sampled at least once" does not capture trucks sampled at the McKenzie bridge.

3.3 Analysis of Test Results

Analysing progress from the inception of the Fuel Marking Programme in 2003, the table below shows test results for samples collected from 2003 to 2012. The "Test Results" (Quantitative Analyses) refer to the percentage of marker concentrate detected when the sample was analysed. A "correctly marked" sample should be at 100%.

The results of samples analyses over the years are categorized in the following four ranges:

0 to 50% : Significant dilution	51 to 70% : Some dilution
71 to 90% : Suspected dilution	91% and more : Legal

The table below shows that during the assessment phase (2003), 12% of the samples analysed were found to be significantly diluted. This decreased to 6% in the post-assessment phase and throughout 2004. From 2005 to 2007, the testing strategy was focused on areas with a high incidence of illegal activity. For this three-year period, the percentage of significantly diluted samples fluctuated from 9% to 15% and then to 8%. It is believed that this fluctuation was a direct result of the strategy used for sampling and would have a direct relationship with the number of samples analysed and the focus on areas with a high incidence of smuggling. The year 2008 can be characterized as a mixture of focused, planned and random sampling. The percentage of samples found with significant dilution was maintained at 3% in 2009. The year 2010 set another record with significantly diluted samples analysed. In 2011 and again in 2012, *significant levels of adulteration (defined as more than 50%)* were detected in only 1% of the samples analysed.

TEST RESULTS (Quantitative analyses)	03 [(Ass P	Dec 2003 æssment hase)	27 J (lan 2004 Post- essment)	20	04	20	05	20	06	200	07	20	08	200)9	20 ⁻	10	201	11	20	12
0-50 %	42	12%	28	6%	196	6%	855	9%	764	15%	1,169	8%	593	3%	701	3%	511	2%	167	1%	259	1%
51-70 %	59	17%	32	7%	275	9%	1,234	14%	223	4%	343	2%	254	1%	767	4%	372	2%	164	1%	128	1%
71-90 %	67	19%	89	19%	475	16%	2,576	28%	928	19%	8,204	55%	8,593	42%	12,654	62%	10,834	45%	10,990	49%	10,491	49%
91 % -	188	53%	329	69%	2,110	69%	4,431	49%	3,091	62%	5,171	35%	11,013	54%	6,129	30%	12,612	52%	11,171	49%	11,867	49%
Total	356	1 00%	478	1 00%	3,056	1 00 %	9,096	100%	5,006	1 00%	14,887	100%	20,453	100%	20,251	100%	24,329	100%	22,492	100%	22,745	100%
Qualitative																						
Analyses					3	6	37	75	1,8	325	1,1	80	30	7	88	7	1,2	59	11	3	45	52

Test Results of Samples Analysed

Note: Duplicate quantitative analyses removed

3.4 Quantity of Illegal Fuel Seized

The table below compares the volume of illegal fuel seized from 2005 to 2011.

2005	2006	2007	2008	2009	2010	2011	2012
(UK GAL)							
3,011	8,001	21,793	33,560	33,443	21,242	10,272.6	6,004

3.5 Volume Analysis

An additional metric to evaluate the performance of the Fuel Marking programme is a measure of gasoline, diesel and kerosene consumption (excluding large duty-free consumers). For the oil companies, 3,404,107 barrels of petroleum-based products were sold in 2012 with an average of 9,301 barrels per day.

This represents a 12.97% increase when compared to 2011. There were significant increases in the consumption of Mogas, Gasoil, Avjet and Kero. The upward trends of gasoil (diesel) and mogas (gasoline) correlate with economic growth and the successes of the Fuel Marking Programme.



3.6 Prosecutions

The Fuel Marking Programme recorded 13 convictions from 10 completed prosecutions, three (3) of which were guilty pleas. Four (4) new charges were filed in 2012 compared with thirteen (13) in 2011, twenty- seven (27) in 2010, seven (7) in 2009 and three (3) in 2008. At the end of 2012, there were ten (10) prosecutions engaging the attention of the courts.

On April 20, 2012 training sessions were conducted by the Legal Division with staff of the Licencing Section and Inspectors of the GEA. The session was aimed at furnishing inspectors

and licencing staff with the necessary information pertaining to their conduct in the fields and court.

On April 27, 2012, a consultative session was conducted by the Legal Division with the GEA inspectors as the main participants and presenters. Each inspector was asked to conduct a presentation on strategic actions which should be employed to identify and curb fuel smuggling. The aim of this session was to ascertain how the inspectors were thinking in relation to fuel smuggling while at the same time assessing ideas and plans they believe are viable. A presentation was also done by the CEO of the GEA on the five components of emotional intelligence at work which was aimed at sensitizing inspectors about identifying and controlling their emotions at work and relating to the emotions of their fellow workmates.

During 2012, three (3) matters that were before the courts were dismissed as compared to four (4) in 2011:

- One (1) was dismissed as a result of "insufficient evidence" being presented by the prosecution but was subsequently appealed.
- One (1) was dismissed for want of prosecution as the witnesses resigned from the GEA and failed to be present in Court at the required time.
- One (1) was dismissed as a result of errors and contradictions on the part of GEA's witnesses in the witness box.

4.0 Review of Activities: Administration and Human Resource Division

At the beginning of 2012, the GEA had a staff complement of eighty-two (82) employees and ended the year with ninety-one (91) employees. The Agency filled the following 4 new positions in the organization's revised structure:

- I. Energy Engineer
- 2. Hydropower Support Engineer
- 3. Accountant under the GMS project
- 4. Office Assistant

The following 15 existing positions were filled during the year:

- I Executive Assistant
- I Legal Officer
- I Accounts Clerk II
- I Technician Engineer
- 2 Hydro Power Support Engineers
- I Energy Engineer
- I Office Assistant
- I HR Officer
- I Field Operations Coordinator
- 4 Inspectors
- I Driver/Office Assistant

Resignations from the following 6 positions were received:

- I Inspector
- I Administrative/Inventory Officer
- I Secretary
- I Accounts Clerk II
- I Driver/Office Assistant
- I Executive Assistant
- I Hydropower Support Engineer
- I Officer voluntarily terminated their employment contract:
 - I Executive Assistant
- I Officer was reported missing since December 23, 2012.
 - I Field Operations Coordinator

4.1 Professional Development

The staff of the Agency benefited from training in the following areas:

✓ During the period February 7, 2012- February 13, 2012, the GEA contracted the services of an Aviation Fuel and Fuel Handling Consultant to review the existing systems, procedures and guidelines for the handling, transporting, storing, testing and

dispensing of JET AI and Avgas in Guyana. The objective of the consultancy was to create, through collaboration, guidelines/procedures in accordance with international standards to handle, transport, store, test and dispense Jet AI and Avgas 100LL in Guyana with capacity building in the critical procedures required to develop and implement such a plan.

- ✓ The Guyana Energy Agency, in collaboration with USAID and the Ministry of Health, arranged and conducted a Guyana Clean Energy Policy Workshop at the Cara Lodge on Wednesday March 21, 2012. The Agenda was divided into two main parts:
 - Executive Stakeholders' Forum
 - Working Group Sessions: Presentations to technical personnel attended by 30 persons from various ministries and agencies.

The Workshop was conducted by faculty members from the Arizona State University and addressed the following key issues:

- Barriers and Challenges for long-term sustainable renewable energy systems
- Planning, Implementation and Operations of successful Community PV systems
- Load Management, Energy Conservation and System Monitoring
- Sustainable Funding and Financing for Clean Energy projects
- Supporting Institutional Framework and Policy Environment
- Building critical Capacity for Sustainability
- Socio-economic Challenges and Opportunities
- Clean Energy as Catalyst for Millennium Development Goals
- Lessons Learned and Best Practices from other Countries
- ✓ GEA's Energy Engineer participated in a training of trainers' workshop in Barbados from the 12 – 16 March, 2012. The workshop was titled ISO 50001 Energy Management Standard and was conducted by International Organization of Standardization (ISO) in collaboration with Barbados National Standard Institution (BNSI) and Caricom Regional Organization for Standards and Quality (CROSQ). The standard is intended to accomplish the following:
 - Assist organizations in making better use of their existing energy consuming assets.
 - Create transparency and facilitate communication on the management of energy resources.
 - Promote energy management best practices and reinforce good energy management behaviours.
 - Assist facilities in evaluating and prioritizing the implementation of new energyefficient technologies.
 - Provide a framework for promoting energy efficiency throughout the supply chain.
 - Facilitate energy management improvements for greenhouse gas emission reduction projects.

- Allow integration with other organizational management systems such as environment and health and safety.
- ✓ On April 20, 2012, training sessions were conducted by the Legal Division with staff of the Licensing Section and Inspectors of the GEA. A total of twenty- four (24) Officers attended and participated.

The session was aimed at furnishing inspectors and Licensing staff with the necessary information pertaining to the importance of their conduct in the fields and court. The ultimate objective of this session was to assist staff with the knowledge necessary when conducting investigations and to inform on their respective roles if required to appear in a court of law.

The following topics were covered at the training session:

- I. Statement Writing for licensing staff
- 2. Tendering, admitting and marking evidence
- 3. Hearsay evidence
- 4. The Chain of Custody
- 5. Taking photographs and writing statements
- 6. General Statement Writing
- 7. Identification Evidence
- 8. Offences under the GEA legislation and their elements
- 9. Court Guidelines
- 10. Review of the Standard Operation procedures
- II. Review of the GEA legislation
- ✓ The Energy Engineer sat the Certified Energy Manager (CEM) examination which was organized by Caribbean Electric Utility Service Corporation (CARILEC) and conducted by the Association of Energy Engineers (AEE) in St Lucia during the period May 22-25, 2012. The objectives of the course were:
 - To raise the professional standards of those engaged in energy management.
 - To improve the practice of energy management by encouraging energy managers in a continuing program of professional development.
 - To identify persons with acceptable knowledge of the principles and practices of energy management related disciplines and laws governing and affecting energy managers through completing an examination and fulfilling prescribed standards of performance and conducted.
 - To award special recognition to those energy managers who have demonstrated a high level of competence and ethical fitness for energy management.
- ✓ Latin America Energy Organization (Olade) conducted an online training course on Wind Energy and Implementing Hybrid Systems. The course comprised of eight 2 ¹/₂ hours interactive online classroom sessions each followed by a questionnaire based on the content covered in the classroom session. The course objectives were to:
 - understand hybridization of renewable energy resources that can operate two or more systems to meet power demand set by users.

- learning about general issues related to the design, implementation and operation of hybrid systems that combine renewable energy systems as well as its incorporation with conventional systems.
- ✓ Two engineers from the GEA benefitted from a workshop on expanding bioenergy opportunities in Guyana under a project from the Ministry of Agriculture and the Guyana School of Agriculture with funding from the Inter-American Development Bank. The aim of the training was to:
 - Improve the capacity to identify and evaluate viable investment opportunities in the bioenergy production chain.
 - Increase capacity building and the transfer of technology in order to build a critical mass of bioenergy technicians, operators, and demonstration programs
- ✓ GEA coordinated a workshop in the month of June with the United Nations Development Program (UNDP) that focused on testing of photovoltaic panels V–I curve, battery charge and discharge cycles, charge controllers' performance and support for automated testing with software simulation. The workshop was technical in nature and participants were required to have some background knowledge in electrical/electronic engineering. The following entities participated:
 - I. Government Electrical Inspectorate
 - 2. University of Guyana
 - 3. Government Technical Institute
 - 4. Ministry of Public Works (Street lighting Division)
 - 5. Guyana Power & Light
 - 6. Guyana Energy Agency
 - 7. Guyana Water Incorporated
- ✓ The Legal Officer and an Inspector attended a workshop during the period June 26 29, 2012 titled "Terrorism" held at the Grand Coastal Inc. hosted by the UN Office on Drugs and Crime.
- ✓ GEA's Energy Engineer and Technician, in August 2012, attended a 3-day Bioenergy Workshop at the Cara Lodge, Georgetown, Guyana, titled "Principles and operations of Technologies for Bioenergy Production: Biogas, Combustion, Gasification, Pyrolysis and Byproducts and Capacity Building for Extension Outreach in Bioenergy", sponsored by Ministry of Agriculture and the Inter-American Development Bank and conducted by Instructors from Purdue University, West Lafayette and Indiana
- ✓ Officers of the GEA participated in an online course offered by OLADE, titled 'Biogas: Technological development, applications and social impact.' This course was held by virtual mode during the period October 15, 2012 to November 15, 2012. The course comprised of ten 2-hours interactive online classroom sessions each followed by a questionnaire based on the content covered in the classroom session. Of the ten sessions, five were completed during the month of October.

The objective of the course was to inform on important and specific aspects of the use of biogas technology and guide on the steps to design and operate a biogas plant. Further, the course highlighted technological developments and applications capable of adopting biogas technology for treatment of organic waste, producing compost and renewable energy.

- ✓ A team of 25 officers from various agencies and companies including Guyana Energy Agency, GNBS, EPA, Air Services Ltd, Caribbean Aviation Maintenance Services (CAMS), Guyana Fire Service, Guyana Civil Aviation Authority and Guyoil participated in both the theoretical and practical sessions conducted at Ogle and Cheddi Jagan International Airports. Follow up sessions will be conducted annually. The creation of comprehensive reports with detailed assessments and recommendations of needs were completed by the officers of the GEA and distributed to the relevant agencies for review and action.
- ✓ During the period October 1, 2012 to October 5, 2012, GEA facilitated a follow- up training workshop conducted by Aviation Fuel and Fuel Handling Consultant, Mr. Dennis Burchell. The workshop was attended by persons from ASL, CAMS, EPA, GCA, GNBS, GFS and GEA.

The objective of the follow-up training was to review and track progress of previously recommended corrective action of the existing systems and procedures for the safe handling, storage, dispensation and transportation of aviation fuel at the various airport facilities. The workshop consisted of three days in-class lectures and two days field inspections of two different airport facilities. The in-class lectures covered theoretical aspects of aviation fuel handling, such as, health and safety precautions, environmental precautions, housekeeping and standard operating procedures. The practical field inspection involved visiting Ogle and Timehri international airports where checks were made at both airports' fuel depots and fuellers. A check-sheet was used to record all the findings of the inspection. These check-sheets were consolidated to generate reports and recommendations based on any short comings and findings were categorized according to levels of priority.

- ✓ GEA's Economist and two Statistical Officers participated in an online training course hosted by OLADE titled "Energy Information Management".
- ✓ 5 Officers attended a training course in Principles of Supervisory Management organized by the Public Service Ministry.
- ✓ The Energy Engineer attended a workshop, held in Barbados, titled SATIS 2012: Sustainable Applications for Tropical Island States, hosted by the Caribbean Solar Energy Society with key sponsorship provided by the Agencia Espanola de Cooperacion Internacional para el Desarollo (AECID) representing the Government of Spain. The workshop was also supported by Caribbean Community Secretariat (CARICOM) and the Organization of American States (OAS). The objectives of the workshop were:

- To bring together scientists and technologists from in and outside the Caribbean to present, discuss and develop views on various areas of renewable energy.
- To identify the most cost-effective applications of renewable energy, particularly for the Caribbean
- To review the efficient utilization of traditional energy sources and discuss the implications of energy efficiency on the development of photovoltaic and solar thermal technologies.
- ✓ The Caribbean Community (CARICOM) supported by Inter-American Development Bank IDB and EU-Caribbean Research and Innovation Network (EUCARINET) hosted the second regional workshop on capacity building in Research, Development and Innovation (RDI) related to sustainable development Three of GEA's Engineers participated in the workshop. The objectives of the workshop were to:
 - Train RDI project proposers in preparing winning projects for grant funding and financing. This will include strategies for preparing Concept notes, the use of the Logical framework for defining projects and budget preparation.
 - Introduce the role of Innovation Policies to support renewable energy
 - Discuss with researchers and energy project developers mechanisms for overcoming barriers to getting Energy RDI projects implemented
 - Examine financing options available for RDI.
 - Examine the elements of establishing a Network of CARCOM RDI research in Sustainable Energy.



✓ Mr. Winston Setal, Hydropower Support Engineer attended a workshop at the Guyana Forestry Commission Georgetown, organized by the Office of the President. The Ministry of Natural Resources is implementing a Strategic Plan for the Natural Resources and Environment Project with the main output being capacity development for Natural Resources, Environment and Disaster Risk Management. At the workshop, a team from the United Nations Development Program (UNDP) made presentation on Strategic Planning concepts. Participants were engaged on main environmental concerns, root causes and ways to reduce/ eradicate some of the concerns.

4.2 Administration and Infrastructural Enhancement

During the year, the Division facilitated the procurement of goods and services based on the budget and workplan.

Infrastructural works were completed to revet the drains at the front of the compound, and enhance security within the Agency and its perimeter by the installation of razor wire.

Reviews were conducted on the performance appraisal format to capture a more participatory approach, and to motivate staff and enhance productivity. The Agency also installed a payroll software as well as a time card/attendance software.

The Agency also enhanced the aesthetics of the compound by redesigning its signboard and adding potted plants within the compound.

5.0 Review of Activities: Finance Division

The Audit of the years 2008, 2009, 2010 and 2011 for the Fuel Marking accounts was completed and the GEA is currently awaiting the draft management letters. In relation to the GEA Accounts the audit of 2008, 2009 and 2010 was completed and draft Management letter was received for 2008. Presently, the Auditors are working on the accounts for 2011.

The activities of GEA are financed from Government subventions and from revenue generation. Revenue was generated by the Agency from administrative fees (Agency Fees) for the marking and handling of fuel and from the issuance of licences to import, sell, store and transport petroleum and petroleum products. Due to the project-based self-financing nature of the Fuel Marking Programme, separate accounts are kept for its income and expenditure. The GEA facilitated payments for fuel purchased under the PetroCaribe Agreement by the oil companies. The payments for fuel purchased from Venezuela are channelled through the GEA and were captured in the accounts to ensure that payments are made according to contractual obligations. While the monies received are captured as income they are disbursed as cash payments to PDVSA and as financed payments to the relevant accounts at the Bank of Guyana.

Appendix: Legislation, Mandate and Overview of the Divisions

Legislation

The GEA, a body corporate, was established in 1997 by the <u>Guyana Energy Agency Act</u> <u>1997 (Act No. 31 of 1997)</u>. The GEA Act has been amended over the years to foster harmonization, increased monitoring, better regulation and greater enforcement in the energy sector.

The GEA falls under the purview of the Prime Minister as the Minister responsible for energy and electricity. GEA's organization structure consists of a Board of Directors, Chief Executive Officer, Deputy Chief Executive Officer, Secretariat and the following five Divisions:

- i) Energy & Energy Statistics Division,
- ii) Legal & Licensing Division,
- iii) Fuel Marking Division,
- iv) Administration/Human Resource Division, and
- v) Finance Division.

The GEA's organization structure was revised during 2010 to accommodate the following new positions: Energy Economist, Energy Engineer, Hydropower Support Engineer, Licensing Administrator, Internal Auditor, Public Communications Officer, Human Resource Officer, [additional] Legal Officer, Field Operations Coordinator, Senior Investigator and Investigator.

The mandate and activities of the Guyana Energy Agency (GEA) are governed by the following legislation:

- Guyana Energy Agency Act 1997,
- Energy Sector (Harmonisation of Laws) Act 2002,
- Guyana Energy Agency (Amendment) Act 2004,
- Guyana Energy Agency (Amendment) Act 2005,
- Guyana Energy Agency (Amendment) Act 2011,
- Petroleum and Petroleum Products Regulations 2004,
- Hydroelectric Power Act and Regulations 1956,
- Hydroelectric Power (Amendment) Act 1988,
- Electricity Sector Reform Act 1999,
- Public Utilities Commission Act 1999,
- Electricity Sector Reform (Amendment) Act 2010, and
- Public Utilities Commission (Amendment) Act 2010.

The GEA Act of 1997 established the Guyana Energy Agency (GEA) as a body corporate. On March 31, 2004 the **GEA (Amendment) Act 2004** was assented to and published in an Extraordinary Issue of the *Official Gazette* which made provisions for the implementation of the fuel marking system, creation of offences and also for the grant and issue of the various classes of licences, viz- Import Licence; Wholesale Licence; Importing Wholesale Licence; Retail Licence; Bulk Transportation Carrier Licence; Storage Licence; and Consumer Installation Licence.

The core functions listed in section 5 of the principal Act are:

- to advise and make recommendations to the Minister regarding any measures necessary to secure the efficient management of energy and the source of energy in the public interest and to develop and encourage the development and utilisation of sources of energy other than sources presently in use;
- to develop a national energy policy and secure its implementation;
- to carry out research into all sources of energy including those sources presently used in Guyana for the generation of energy, and securing more efficient utilization of energy and sources of energy;
- to monitor the performance of the energy sector in Guyana, including the production, importation, distribution and utilization of petroleum and petroleum products;
- to disseminate information relating to energy management, including energy conservation and the development and utilization of alternative sources of energy;
- to grant and issue licences relating to petroleum and petroleum products, including import licences, wholesale licences, importing wholesale licences, retail licences, bulk transportation carrier licences, storage licences and consumer installation licences;
- to utilise a marking system to add markers to petroleum and petroleum products imported by every person under an import licence or import wholesale licence for the purpose of identifying such petroleum and petroleum products as having been legitimately imported;
- to take samples of petroleum and petroleum products from any person at random throughout Guyana and carry out tests and examinations to determine the presence or level of the markers in the samples of the petroleum and petroleum products;
- to perform the necessary tests to determine whether the marker(s) is (are) in the required proportion and any further test necessary to determine whether the petroleum and petroleum products have been lawfully obtained, stored, possessed, offered for sale, blended or mixed with any substance that is not approved;
- to prosecute in the Magistrates' Courts persons who are in possession of petroleum and petroleum products bearing no markers or at a concentration contrary to that required;
- to prosecute in the Magistrates' Courts persons who import petroleum and petroleum products without an import licence or wholesale import licence;
- to prosecute in the Magistrates' Courts persons who purchase, obtain, store, possess, offer for sale, sell, distribute, transport or otherwise deal with illegal petroleum.

Section 6 of the Act further outlines several advisory functions of the Agency:

- to study and keep under review matters relating to the exploration for, production, recovery, processing, transmission, transportation, distribution, sale, purchase, exchange and disposal of energy and sources of energy;
- to report thereon to the Minister and recommend to the Minister such measures as the Agency considers necessary or in the public interest for the control, supervision, conservation, use and marketing and development of energy and sources of energy;
- to prepare studies and reports at the request of the Minister on any matter relating to energy or any source of energy, including research into alternative sources of energy, or the application of such research, and to recommend to the Minister the making of such arrangements as the Agency considers desirable for cooperation with governmental or

other agencies in or outside Guyana in respect of matters relating to energy and sources of energy;

- to advise the Minister or assigned authority on matters relating to the administration and discharge of the functions of the *Electricity Sector Reform Act 1999*.

The Fuel Marking Programme was charged with the responsibility of ensuring that all gasoline, diesel and kerosene are properly marked at a known concentration at all legitimate import points and also collecting and testing samples of fuel from various parts of the country including wholesalers, retailers, distributors, transporters, commercial consumers and any person in possession of fuel for the relevant marker(s).

The <u>Petroleum and Petroleum Products Regulations 2004</u> were published in the October 23, 2004 Extraordinary Issue of the Official Gazette, providing the framework for the marking of petroleum and petroleum products, the licensing of sites and related offences.

On August 4, 2005 the **GEA (Amendment) Act 2005** was assented to and published in the *Official Gazette*. That Act clarified the definition of "*illegal petroleum*" and provided a definition for "*markers*".

The Guyana Energy Agency Act was further amended in 2011 to include provisions for the seizure and disposal of various items. Prior to the amendment, the GEA was required to transfer seized items to the GRA for disposal. Further, the amended Act, among other things, increased the limitation period from six months to seven years for the institution of charges and made provisions for settlement of matters out of court.

The Guyana Energy Agency continues to revise its regulatory framework to ensure procedural gaps are filled. Within the next year, GEA plans on implementing the amended **Petroleum and Petroleum Products Regulations 2013**, which is currently in the process of stakeholder review. The new Regulations aim to target provisions for licensing bulk transportation carriers and approved standards and specifications for petroleum products.

Energy & Energy Statistics Division

The Division's duties and responsibilities are:

- to ensure that petroleum products are readily available in the country;
- to manage the purchase and importation of petroleum and petroleum products;
- to facilitate payment arrangements between the Oil Companies, the Bank of Guyana and other petroleum importers;
- to collaborate with sector agencies on energy and related matters;
- to develop Guyana's Energy Policy and revise as necessary;
- to study and review matters relating to the exploration for, production, recovery, processing, transmission, transportation, distribution, sale, purchase, exchange and disposal of energy and sources of energy within and outside Guyana;
- to prepare studies and reports at the request of the Minister on any matter relating to energy;
- to develop and execute projects relating to alternative sources of energy;
- to update the country's energy data with respect to acquisition prices, wholesale prices and retail prices;

- to prepare and analyse energy demand and supply data;
- to supply petroleum information and analysis of the relevant energy data as required;
- to supply the **CEIS** and **OLADE** databases with energy information.

Legal & Licensing Division

The Division's duties and responsibilities are:

- to inspect all sites, motor vehicles, machinery and equipment for which a licence may be required under the Regulations;
- to grant/issue the relevant licences pertaining to-
 - importation of petroleum or petroleum products;
 - bulk transportation of petroleum or petroleum products;
 - storage of petroleum or petroleum products;
 - wholesale of petroleum or petroleum products;
 - retail of petroleum or petroleum products;
 - storage and own-use of petroleum or petroleum products.
- to suspend, cancel, cease licences in accordance with the regulations made under the <u>Guyana Energy Agency Act 1997</u> as amended by the <u>Guyana Energy Agency</u> <u>(Amendment) Acts 2004, 2005 and 2011</u>;
- to ensure that files for prosecution are completed promptly and dispatched to the Office of the Director of Public Prosecutions for advice;
- to oversee and coordinate the assignment of cases for prosecution;
- to prosecute in the Magistrates' Courts persons who are in possession of petroleum and petroleum products bearing no markers or at a concentration contrary to that required;
- to prosecute in the Magistrates' Courts persons who import petroleum and petroleum products without an import licence or wholesale import licence;
- to prosecute in the Magistrates' Courts persons who purchase, obtain, store, possess, offer for sale, sell, distribute, transport or otherwise deal with petroleum without the relevant licence (s);
- to coordinate the representation of the Agency in civil litigation;
- to prepare Amendments to the Legislation as required and work in collaboration with the Drafting Department of the Ministry of Legal Affairs regarding same;
- to provide management with the necessary legal guidance in execution of the Agency's overall mandate and in relation to other stakeholder agencies, where necessary.

Fuel Marking Division

The Division's duties and responsibilities are:

- to utilise the respective marking system to add markers to petroleum and petroleum products imported by every person under an import licence or import wholesale licence for the purpose of identifying such petroleum and petroleum products as having been legitimately imported, whether domestic or duty-free;
- to add the relevant covert proprietary chemical markers to petroleum and petroleum products at the concentration determined by the Minister by notice in the <u>Gazette:</u>
- to maintain the integrity of the marking system;
- to test the accuracy and monitor the effectiveness of the marking system;
- to take samples of petroleum and petroleum products from any site at random throughout Guyana and carry out tests and examinations to determine the presence or level of the markers in the samples of the petroleum and petroleum products;
- to perform the necessary laboratory tests to determine whether the marker(s) is (are) in the required proportion;
- to determine the composition and grade of petroleum and petroleum products and determine whether same have been blended or mixed with any substance that is not approved;
- to give testimonial evidence in the prosecution of offences under the Act;
- to provide, through the Analyst's Certificate, expert/scientific evidence as proof of the legality of petroleum and petroleum products.

Administration and Human Resource Division

The Division's duties and responsibilities are:

- to maintain and update the Agency's personnel files and other records;
- to aid in the recruitment, selection, replacement and continuous professional development of staff;
- to address staff concerns related to wages and salary administration, contract negotiation and separation procedures;
- to improve staff morale through cogent policies and remuneration;
- to manage and maintain the Group Pension, Group Life, Medical and National Insurance Schemes while ensuring that claims, benefits and queries are processed expeditiously and to the satisfaction of the staff;
- to handle all grievance procedures with the objective of reaching mutually acceptable solutions;
- to ensure that office supplies, equipment, and vehicles are adequately provided and maintained;
- to ensure that the Agency's edifices, facilities and compound are kept clean and properly utilized and maintained;
- to monitor the security services for reliability and adequacy in the execution of their duties;
- to develop and enforce the Agency's Policy Manual and Disciplinary Code;

- to provide general support services to the officers of the Agency in the execution of their duties;
- to ensure adherence to health and safety regulations in the work environment;
- to manage the procurement, receipt and issue of stationery, stocks, office equipment and assets of the Agency and monitor use of same to prevent abuse of the Agency's resources.

Finance Division

The Finance Division is tasked with the responsibilities of the day to day management of the Agency's financial resources. The Division's duties and responsibilities are:

- to advise management on the Agency's financial matters, and where necessary, other agencies;
- to manage and maintain the Agency's income and expense accounts and all other accounting records;
- to prepare the Agency's financial statements;
- to prepare the Agency's budget documents;
- to prepare monthly wages and salaries and other allowances;
- to process payments;
- to ensure that goods and services procured by the Agency are so procured in compliance with the **Procurement Act** and other relevant guidelines;
- to verify the accuracy of bills and receipts provided and investigate suspicious or fraudulent bills/receipts;
- to maintain and update the Agency's asset register.

Organization Structure





لے

j,

i

ne.



Audit Office of Guyana

P.O. Box 1002, 63 High Street, Kingston, Georgetown, Guyana Tel: 592-225-7592, Fax: 592-226-7257, http://www.audit.org.gy

AG: 106/2013

25 July 2013

REPORT OF THE AUDITOR GENERAL TO THE MEMBERS OF THE BOARD OF DIRECTORS OF THE GUYANA ENERGY AGENCY ON THE FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 DECEMBER 2012

I have audited the accompanying financial statements of the Guyana Energy Agency, which comprise the statement of financial position as at 31 December 2012, the statement of comprehensive income, statement of changes in equity and statement of cash flows for the year then ended, and a summary of significant accounting policies and other explanatory information. The audit was conducted in accordance with the Audit Act 2004.

Management's responsibility for the financial statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with International Financial Reporting Standards, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's responsibility

My responsibility is to express an opinion on these financial statements based on my audit. I conducted my audit in accordance with International Standards on Auditing issued by the International Federation of Accountants (IFAC), and those of the International Organization of Supreme Audit Institutions (INTOSAI). Those standards require that I comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgement, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my audit opinion.

<u>Opinion</u>

~

ы

4

~

j,

In my opinion, the financial statements give a true and fair view, in all material respects, of the financial position of the Guyana Energy Agency as at 31 December 2012, and of its financial performance and cash flows for the year then ended in accordance with International Financial Reporting Standards.

OFF SHARMA *****UDITOR GENERA

AUDIT OFFICE 63 HIGH STREET KINGSTON GEORGETOWN GUYANA

3

GUYANA ENERGY AGENCY STATEMENT OF FINANCIAL POSITION AS AT 31/12/2012

2011		Notes	\$	2012 \$
49,105,009	ASSETS Non- Current Assets Plant, Property and Equipment	9		51,277,707
658,126 21,760,127 22,418,253	Current asset Debtors Cash at Bank/Hand	12 , 10	347,751 58,793,336	59,141,087
71,523,262	Total Assets		=	110,418,794
33,447,238 (12,239) 35,800,000 69,234,999	Equity Capital Contribution Accumulated fund Revaluation Reserve Total Equity	15		35,065,522 37,939,506 35,800,000 108,805,028
1,596,891 691,372	Current Liabilities Creditors Accruals	13 14	597,004 1,016,762	1,613,766
71,523,262	Total Equity and Liability		-	110,418,794

The Board of Director approved these Financial Statements for issue on June 25 2013

Chief Executive Officer

-1 -

<u>_</u>

0 Head Finance Division

GUYANA ENERGY AGENCY

· :

STATEMENT OF COMPREHENSIVE INCOME FOR THE YEAR ENDING DEC.31 2012

Year 2011 \$		Notes		•	2012 \$
	Income				
36,594,740	Other income	11		•	41,996,948
47,718,000	Government Subvention	3			58,632,000
5,528,040	GMS Receipts (Biocode Accre	uals)		. ·	
33,327,789,398	Receipts from oil companies	16			59,281,150,704
				•	,
33,417,630,178			-	,	59,381,779,652
			-	<u> </u>	
	•				
	Expenses			•	
45,907,881	Employment Cost	4	53,153,384		
33,817,298,674	Office and Administration	6	59,283,259,376	•	
3,598,125	Repairs and Maintenance	7	3,162,545		
1,563,779	Fuel and lubricant	8	1,795,896		
2,655,005	Depreciation	9	2,456,706	3	
33,871,023,464				•	59,343,827,907
(453,393,286)	Net Profit/ (Loss)		-		37,951,745
			-		

•

÷

2

5

GUYANA ENERGY AGENCY

_

_

STATEMENT OF CASH FLOWS

4

For the year ended December 31 2012

	Jan Doc 2012	lan- Dec 2011
Cash Flow from Operating Activities	27 951 745	(453,393,286)
Net Profit/(Loss) for the year	37,551,745	(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Adjustments for:	2 456 706	2,655.005
Depreciation	2,450,700	3 636 929
Account Receivables	210.275	783.069
Other Receivables	310,575	103,005
Accounts Payable/ Accruals	325,390	. (4,222,700)
Other Accounts Payable	(999,887)	·, · · · · · · · · · · · · · · · · · · ·
Total Adjustment	2,092,584	2,052,217
		(450 541 060)
Net Cash from Operating Activities	40,044,329	(450,541,003)
Cash Flow from Investing Activities		
Purchase of fixed assets:		. (220,404)
Furniture and fittings	(275,796)	(330,484)
Office Equipment	(898,473)	(2,405,144)
Other Equipment	(3,455,135)) (1,231,448)
	·	· · · · · · · · · · · · · · · · · · ·
Net cash used in investing activities	(4,629,404) (3,967,076)
Cash Flow from Financing Activities		·
Changes in:		
Capital Subvention	1,618,284	1,388,500
Net Cash used in financing activities	1,618,284	1,388,500
Net increase/ (decrease) in cash and Cash equivalents	37,033,209	(453,119,645)
		· · ·
Cash and cash equivalent at the		
Beginning of the period	21,760,127	474,879,772
Cash and Cash Equivalents at the		
End of the period	58,793,336	5 21,760,127

Ь

• •

GUYANA ENERGY AGENCY Statement of Changes in Equity For Year ending December 31 2011

.

_

-

_

۳٦

أسد

ר ,

. ..i

. .

.

; ;•

.

	Revaluation Reserves	Accumulated Fund	Capital Subvention	Total
	G\$	G\$	G\$	G\$
			· · · · ·	
Balance at January 1 2011	35,800,000	453,381,047	32,058,738,	521,239,785
Capital Supplementary			1,388,500	1,388,500
Net Profit/ (Loss)		(453,393,286)		(453,393,286)
Grants			· ·	
Balance as at December 31,2011	35,800,000	(12,239)	33,447,238	69,234,999

GUYANA ENERGY AGENCY Statement of Changes in Equity For Year ending December 31 2012

	Revaluation	Accumulated	Capital	Total
	G\$	G\$	G\$	G\$
		(10.000)	00 447 000	00.004.000
Balance at January 1 2012	35,800,000	(12,239)	33,447,238	69,234,999
Capital Supplementary			1,618,284	1,618,284
Net Profit/ (Loss)		37,951,745	· · · · · · · · · · · · · · · · · · ·	37,951,745
Grants			· · · · · · · · · · · · · · · · · · ·	
Balance as at December 31,2012	35,800,000	37,939,506	35,065,522	108,805,028

7

GUYANA ENERGY AGENCY

NOTES TO THE FINANCIAL STATEMENT 2012

1. Background

The Guyana Energy Agency is the successor of the Guyana National Energy Authority effective June 01, 1998. The mandate and functions of the Agency remain the same as that of the Guyana National Energy Authority. The Guyana Energy Agency (GEA) is governed by the following legislation: <u>Guyana Energy Agency Agency Act 1997</u>, <u>Energy Sector (Harmonisation of Laws) Act 2002</u>, <u>Guyana Energy Agency (Amendment) Act 2004</u>, <u>Guyana Energy Agency (Amendment) Act 2005</u> and the <u>Petroleum and Petroleum Products Regulations 2004</u>.

The general mandate of the Agency is embodied in its Mission Statement:

"To ensure the rational and efficient use of imported petroleum-based energy sources, while encouraging where economically feasible and environmentally acceptable, increased utilization of indigenous new and renewable sources of energy."

The Guyana Energy Organization structure comprises of a Board of Directors, Chief Executive Officer, Deputy Chief Executive Officer, Secretariat and five (5) Divisions: Finance Division, Energy & Energy Statistics Division, Fuel Marking Division, Legal & Licensing Division and Administration & Human Resource Division.

2. ACCOUNTING POLICIES

(A) Accounts have been prepared on an accrual basis and under the historical cost convention. Financial statements have been prepared in accordance with International Financial Reporting Standards.

(B) FIXED ASSETS

٩

Fixed assets are recorded at cost. Depreciation is provided on a straight line basis over a period of one (1) year to five (5) years. Rates used are in accordance with the regulations of the Income Tax Act. Depreciation is charged in the year of acquisition and the rates are as follow:

8

- Office Equipment 20% per annum
- Other Equipment 10% per annum
- Motor Vehicles 20% per annum
- Furniture and Fixtures 10% per annum
- Building 2% per annum

Year 2011	Note 3		2012 \$
	Comment Palazza		Φ
41,008,000	These represent Government releases through the Office of the President and Ministry of	•	58 632 000
	Finance.	1	58,052,000
	Note 4		
		•	
	Employment Cost		\$
619,333	House allowance		
1,975,069	Vacation Allowance	•	3,025,260
33,307,253	Wages and Salaries		39,773,295
1,266,003	Pension	•	1,641,385
1,754,167	NIS .		2,239,570
897,476	Hand in hand		1,059,492
2,059,666	Travel allowance		1,640,000
	out of pocket allowance	•	•
924,970	Gross Overtime		674,029
97,500	stipend	' .	46,378
	Gratuity		-
28,371	Honorarium	*	-
619,333	Entertainment Allowance		480,000
2,298,740	Duty Allowance		2,027,265
	Acting allowance		10,946
	Utility Allowance	•	280,000
	GTM Administrative Fee		195,764
60,000	Risk allowance		60,000
45,907,881			53,153,384
		ŧ,	
	Note 5		
	Board Member's fees		7 500
	Chairman- D.Persaud	•	7,500
	Board Members (6)	•	5 000
	-B. Persaud		5,000
	-E. Marshall		5,000
	-D. Yearwood	•	5,000
	-L.Carderry	•	5,000
	-C. Williams C. Deennouth		5,000
	-S. Roophaum		37,500

;

·

Please note the above amounts were included in the amount for stipend in the employment note

<u>Nóte 6</u>

.

-

.

4

. . . .

.....

_i

_

_

L. . . J L

_-i

نــــ •--

<u>ب</u>ـــ

_

	Office & Administration Cost				· . •	\$
1.030.271	Staff Welfare				•	851,511
1.210.805	Local Travel				•	1,213,460
- , ,	Overseas Travel				•	211,328
185,915	Cleaning and Janitorial Supplies					249,024
2,632,610	Stationery and Office Supplies					2,194,914
3.842.953	Communication Expense					2,385,095
2.738.773	Electricity Expense					2,271,000
_,,.	SiteVisit/Inspection					219,681
80,130	Periodicals News papers and Books			2	•	24,410
1,998,816	Security Expense			2	-	2,250,000
154.410	Cleaning and Sanitation		•	•	**	175,827
86.851	Bank Charges				,	965,954
25,996	Miscellaneous Expense					55,497
10.350	Vehicle Insurance		•			10,350
98.078	Training					667,808
2,969	National Event	9			;	88,404

.

		Entertainment				-
Ĵ.	6 240	Subscriptions and Dues				-
	0,240	Consultancy				4,454,081
٦		Transfer of finds	•			-
	491 606	A duartisement				647,467
-	481,000	Conference and Seminars			•	57,998
-	310,238	Donations				-
	0 (14 570	Dollations Defreekments and meals				589,474
ند	2,044,372	Drugs and medical Supplies				19,935
	0,997	Other fees and Licence		•		24,479
7	206 001	Destage and revenue Stamps				42,285
	200,091	Postage and revenue oramps				53,300
	18,500	Computer supplies				-
-1		Energy Farm				-
	500 220	Sub Boarding & lodging				331,500
نا	508,220	Best Control				156,033
	1 000 565	Water Rates				800,000
-	1,000,505	Audit & professional fees				-
		Purch ac charcoal				-
	24.867	draneries	,		•	67,200
-	150,400	Uniform exp				-
-	50.240	Loose tools		:		38.348
ند	12 626	Medical expense				-
	2 055 822	A dvance to purchase				546.063
. 1	- 2,935,822	Energy conservation	•		•	6,146,763
	2 548 780	Print and Non print Materials	•		4	1.899.842
-	2,548,780	GEA Biocode (Accruals)				-
-	1 025	VAT :				274,434
-	13 600 064 111	PDVSA- Petrolleos De Venezuela SA Agreement		•		23.675.856.608
. i	19 995 576 432	Ministry of Finance				35.411.311.082
	93,781,871	BOG Loan A/c		•		165,136,881
٦		Loss on purchase of vehicle				-
		GIZ				466,595
		Guyoil				-
-	1,947,467	PLATTS Subscription				-
	428,114	Bad debts written off				-
I	102,079	Protective clothing				504,745
	33,817,298,674	-			. –	59,283,259,376
Ţ.	<u> </u>	= · · · · · · · · · · · · · · · · · · ·			.=	
_		Note 7				
-		N			•	
		Repairs and Maintenance				\$
	1,285,649	Building				448,058
	714,390	Office Equipment				619,292
7	464,942	Vehicle .			- '	778,976
•	1,133,144	Compound			. <i>*</i>	1,157,835
		Furniture and Fixture				126.020
-		Other Equipment				32 364
	3,598,125	_ · ·				3,162,545
		•			=	5,:04,040
		· .				

....

: ;_;

٦ ____

Ĺ.

ŗ. <u>نــ</u>

-4

نـــ

_

Ŀ.

	Note 8			
1,563,779	Fuel and lubricant		•	1.795.896
1,563,779	- ·			1.795.896
	•		·	
	• 1	•		
	. •			

D

•

Fixed	Note
Assets	ပ
Schedule	

	-		Ŧ	—	—	1	····T			1	<u> </u>	Т	1	1		<u>т</u>	- T
49,105,009		19,620,056		2,655,004	(2,067,805)	12,022,827	10 000 000	i	68,725,065		0/0/,0%	(2,00,100)	TU 120,000	107 208 29			
Net Book Value		Total Depreciation		Depreciation 31/12/2012	Less Journal Adjustment	Depreciation b/f 2011			Cost at 31/12/2012	Disposals/ transferred	Additions for year	Less Journal adjustment	Datatice $0/1 \ 1 - 1 - 2012$	Balanca k/f 1 1 2012			
2,000,000									2,000,000			-	2,000,000	→ ~~~ €	0		Land
40,613,505		10,256,095		687,392		9,568,703			50,869,600				000,808,00		÷		Building
J		5,694,149		I		5,694,149			5.694.149				3,694,149	4	9	Vehicle	Motor
2,801,319		4,183,682		1,031,161		3,152,521			6.985.001		898,473		6,086,528	e e e e e e e e e e e e e e e e e e e	€,	Equipment	Office
771,268		234,732		60,628		174,104		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	1 006 000		275,796		730,204	e e	€	Fixtures	Furniture and
5,091,615		1,708,104		677,525		1,030,579		0,1/2,11/	6 700 710		3,455,135		3,344,584	₩.		Equipment	Other
51,277,707		22,076,762	r	2,456,706		19,620,056		1,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	72 251 160	, , ,	4,629,404	1	68,725,065				Total

ſ

L

amounts will be included in the FS. in the Asset Register. The request for a revaluation was done in 2012 and a copy of the letter is attached, when the revaluation is done the in December 2008 and December 2009. However, the said vehicles are still in use by the Agency and as such that was the reason for including it The GEA included in its Fixed asset Register three Motor Vehicles namely PJJ 3066, PJJ 3049 and PKK 361, these vehicles were fully depreciated

ŧ

:

ſ

E

Ξ

[

Ł

	Note 10	
	Cash at Bank/ Hand	\$
80,000	Petty Cash	80,000
11,786,235	Charcoal A/c	38,742,356
4,625,510	General A/c	10,575,491
5,266,781	Special A/c	9,393,888
1,601	GEA Foreign ac	1,601
21,760,127	•	58,793,336
	<u>Note 11</u>	
	Other Income	
13,072,240	Agency Fees	15,972,448
	Disposal of Assets	-
	GTM Employers refund	-
22,217,500	Fuel licensing	25,012,000
	Licensing fees/fines	-
1,305,000	Licensing decals	1,012,500
	Loan Interest	
36,594,740	:	41,996,948
	<u>Note 12</u>	
	Debtors	
18,631	staffloan	-
367,513	Salary Advance	60,000
36,625	Staff Debtors	5,702
(4,500)	GPSCU	(4,500)
37,272	GRA	(19,665)
460	GPSU	460
(3,000)		(3,000)
205 105	Accounts receivable	-
205,125	Sundry Debtors	308,754
658,120	:	347,751
	Note 13	
15 020	CNDA Hand in Hand	
15,939		15,939
9,955	NID Seleries and allowerses	32,271
30	GTM Insurance	(4,944)
8 157	Hand in hand	9 L 57
239	GTM	230
1.562.435	Sundry creditor	545 303
1,596,891		597.004
	:	
	<u>Note 14</u>	\$
	Accruals	
691,372	Accruals	1,016,762
691,372		1,016,762

_

. •---

1

j,

<u>Note 15</u>

Capital Contribution

32,058,738 1,388,500	Opening balance Capital releases for 2012	33,447,238 1,618,284					
33,447,238	35,065,522						
	<u>Note 16</u>						
	Receipts from Oil companies						
17,153,921,484	Guyoil	30,453,652,128					
621,942,990	Chevron	10,169,923,632					
15,551,924,924	Sol	18,657,574,944					

33,327,789,398

_

ר ר ו

...

7
