



Guyana Energy Agency



ANNUAL
REPORT
2018

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EXECUTIVE SUMMARY

Petroleum Products

5,792,857 barrels of petroleum-based products were imported in 2018 representing about 15,871 barrels per day. This represents a 4.12% increase when compared to 2017. Petroleum imports for the year were acquired at a cost, insurance and freight (CIF) value of US\$513,020,563, representing an increase of 27.77% from that of the previous year.

The average cost per barrel of petroleum-based imports increased from US\$72.17 in 2017 to US\$ 88.56 in 2018, an increase of 22.72%. This upward trend also continued for the average unit CIF value for each petroleum product. There were increases of 15.39%, 27.69% and 28.67% in the average unit CIF value (US\$/bbl) for Mogas (gasoline), Gasoil (diesel) and Jet fuel/Kerosene respectively. In addition, the average unit CIF value for Fuel oil, Aviation Gasoline (avgas), LPG (cooking gas) and LNG also increased by 22.59%, 5.99%, 15.45% and 73.84% respectively.

Retail prices for Mogas (gasoline), Gasoil (diesel) and Kerosene increased during 2018 by an average of 18.25%. Specifically, average retail price for gasoline and diesel increased by 16.48% and 24.10%, respectively. Also, the average retail price for domestic kerosene rose by 12.75% while the average retail price for cooking gas (LPG) decreased slightly by 1.17%.

Solar Energy

The renewable energy programme for 2018 resulted in the award of contracts for the installation of solar photovoltaic (PV) systems on the rooftops of 90 Government buildings which represent an additional 1,942 kilo Watts (kW) of installed solar power capacity in 2018 alone. The combined PV systems for the renewable energy program will generate about 3,198 Mega Watt hours of energy from solar panels saving G\$188 million annually while avoiding 2,322 tonnes of carbon dioxide emissions annually.

In addition to the above, GEA's Engineers provided technical and procurement support, monitoring and supervision for a number of other installations at State House, Ministry of the Presidency, Ministry of Communities, NAREI, NDIA, OPM, Hydromet, OCC and MPI.

Twenty (20) integrated 80-watt solar powered LED street lights were installed at Agatash Village, Bartica which will result in annual energy savings of about 7,008 kWh, resultant annual cost savings of about G\$350,400 and associated environmental benefits. The computed simple payback when compared to a similar installation using utility powered street lights is 6 years.

Forty-five (45) integrated stand-alone solar powered 80W Light Emitted Diode (LED) street lights, financed by the British High Commission in Georgetown, through the UK's Prosperity Fund, were installed at the Guyana National Park at a cost of G\$8,158,288. GEA also supported the installation of Seven (7) Integrated Solar Powered 80W LED lights at the Hope High Level Sluice.

Hydropower

The Guyana Energy Agency (GEA) received funds under its 2017 work programme as part funding for the installation of the 20kW Hydropower Plant on the Hosororo Creek, Hosororo Village, Region One. The remaining funds were sourced through the REETA Project from the German International Corporation (GIZ). In May 2018, based on a request in 2017, GEA received a Grant of EUR 63,851.11 from the Government of the Federal Republic of Germany towards the construction and operationalizing of a 20kW hydropower power plant at Hosororo, Region 1. In June 2018 GEA held a public consultation with residents of Mabaruma and other stakeholders as a part of the process to ensure that they were aware of what the project entails and its benefit to the community. Construction works commenced in September 2018 and were completed in December 2018. Testing and commissioning of the plant commenced during December 2018 and is expected to be completed in the first quarter of 2019.

Seventeen (17) visits were conducted at seven (7) potential hydropower sites in Guyana during the year 2018. GEA's Engineers revised the design, updated the feasibility study and prepared tender-ready documents for a 150kW Kato Hydropower Project. GEA's Engineers have commenced review and assessment of a 5MW Hydropower potential at Eclipse Falls, Region 1. Engineers updated the feasibility study for a proposed 1MW hydropower plant at Ikuribisi, Region 7 and 1.5 MW at Kumu, Region 9. In seeking to study the Ilubia Hydropower site located in the village of Paruima, Region 7, the GEA engineers and a HydroMet Representative organised and conducted a visit to the site. On the visit, the team installed a water level Gauge and Staff Gauge on the Ilubia river, conducted flow measurements and assessed the layout of the village in relation to the site and its current mini grid. In continuing efforts to collect data on potential hydropower

sites for future development, an initial assessment was conducted in the village of Monkey Mountain located in Region 9. A level logger will be installed in 2019 and the results will be assessed. The Engineers also reviewed a possible 12MW hydropower development at Tiger Hill on the Demerara River.

Wind Energy

GEA had identified 7 potential locations/sites along Guyana's coast for the development of utility scale (grid connected) wind farms and has since supported HECI towards the installation of Wind measurement towers at 4 potential locations/sites along Guyana's coast.

Energy Efficiency

One of the Guyana Energy Agency's strategy to influence energy efficiency focuses on the area of conservation and careful use of energy through wise equipment choices and circumventing unnecessary energy consumption. The Government's energy efficiency programme for 2018 resulted in a Contract for the replacement of inefficient lights and the installation of 10,978 LED lights and 1,120 occupancy sensors with resultant energy reduction of about 768MWh and savings of about G\$45 million per year.

GEA provided support to the Ministry of Finance towards the installation of eight (8) energy efficient inverter type air conditioning units to replace old inefficient air conditioning units.

GEA supported the Ministry of Public Infrastructure for a grant funded project from JICA to procure 10,740 energy efficient street lights.

Under the second phase of the Latin America and the Caribbean Energy Efficiency Program (PALCEE) supported by the Austrian Development Cooperation and the Latin American Energy Organisation (OLADE), 32 old/inefficient air conditioning units were replaced with energy efficient Inverter type air conditioning units, 400 inefficient lights (MV & fluorescent) were replaced with LEDs. The beneficiary organizations were the Leonora Cottage Hospital, National Cultural Center and the Ministry of Public Infrastructure.

Licensing Activities

The Agency issued a total of 1,279 licences for 2018, inclusive of all categories of licences (Importing/Importing Wholesale/Wholesale, Export, Retail, Consumer Installation, Bulk Transportation Carriers, Storage). The Division recorded a 12% increase in the number of sites inspected from 749 in 2017 to 837 in 2018.

Fuel Marking Programme

Under the Fuel Marking Programme, of the 11,655 site visits conducted during the year, 1,874 sites were sampled at least once. There were 35 joint operations with Guyana Police Force (GPF), the Guyana Defence Force (GDF) and the Guyana Revenue Authority (GRA). 26 (1%) of the sites sampled at least once were found with *significant dilution (defined as more than 50%)* in at least one tank. The percentage of sites found with significant dilution in at least one tank has progressively decreased from 34% in 2006 to 1% in 2018.

The Fuel Marking Programme recorded four (4) prosecutions which resulted in 2 convictions and 2 dismissals. Compensation was accepted from three (3) individuals under *Section 33A Guyana Energy Agency Act 1997* as amended by *Section 8 Guyana Energy Agency (Amendment) Act 2011*.

Information Dissemination

GEA participated and facilitated many information dissemination and awareness activities which enabled interaction with members of the public, students and various organizations to provide lectures, seminars, information brochures, press releases, newspaper pull-outs, radio and TV infomercials with energy conservation tips. During 2018, GEA's Public Communications Officer conducted forty-five (45) presentation to schools reaching about 4,000 students across Guyana. GEA conducted 6 Presentations to Ministries, Agencies, Private Sector and NGOs, 2 Seminars and 2 Workshops on Sustainable Energy; broadcasted 1,305 Radio Advertisements, 114 Television adverts, 120 infomercials and 104 documentaries; published 136 print advertisements; and distributed 5,400 brochures, 1,040 booklets, and 170 posters.

Administration

The staff of the Agency benefited from training and workshops in several areas, through the conduct of 51 training programmes benefitting 409 Officers.

1.0 Energy & Energy Statistics Division

1.1 Petroleum-Based Imports

For the year 2018, the Division facilitated the importation of one hundred and seventy-nine (179) shipments of petroleum-based products on behalf of the oil companies, an increase from one hundred and seventy-four (174) shipments in the previous year. About sixty-two percent of the shipments in 2018 were lifted from Trinidad and Tobago, twenty-seven percent of the shipments were lifted from Suriname and the remaining twelve percent was either sourced from West Indies Petroleum, Jamaica or via third parties based in Antigua, St. Lucia and USA¹.

TOTAL IMPORTS (BBLs)					TOTAL IMPORTS - OIL COMPANIES (BBLs)				
January-December	Product	2016	2017	% change	January-December	Product	2016	2017	% change
	Mogas	1,297,874	1,323,717	1.99%		Mogas	1,297,874	1,323,717	1.99%
	Gasoil	2,390,887	2,388,315	-0.11%		Gasoil	2,097,999	2,117,712	0.94%
	Kero	86,900	78,893	-9.21%		Kero	86,900	78,893	-9.21%
	Avjet	157,373	187,576	19.19%		Avjet	156,511	187,576	19.85%
	Fuel oil	1,407,290	1,378,196	-2.07%		Fuel oil	79,866	81,952	2.61%
	LPG	197,754	193,916	-1.94%		LPG	186,754	182,059	-2.51%
	LNG	-	3,082	-		LNG	-	-	-
	Avgas	8,970	10,037	11.90%		Avgas	1,188	1,950	64.23%
	Total	5,547,048	5,563,733	0.30%		Total	3,907,092	3,973,859	1.71%

During the latter half of 2018 there was a significant disruption in the regional oil market owing to the closure of refinery operations of the state oil company, Petrotrin. Petrotrin had undergone a restructuring process and two new state-owned entities were established as replacements - the Heritage Petroleum Company and the Paria Fuel Trading Company. The Heritage Petroleum is engaged in exploration while the Paria Fuel Trading Company operates as a terminal and handles fuel logistics and trading.

¹ Shipments relate solely to Mogas, Gasoil, Avjet/Kerosene, LPG and Fuel oil.

The total petroleum imports recorded an overall increase of 4.12% in 2018 with a total of 5,792,857 barrels of petroleum-based products imported and an average of approximately 15,871 barrels per day. There were increases in the imports of Gasoil (diesel), Fuel oil, LPG (cooking gas), while imports for Mogas (gasoline), Kerosene, Avjet (Jet Fuel), liquid natural gas (LNG) and Avgas (aviation gas) decreased during this period.

Imports for the oil companies also rose by 4.08% in 2018 with a total of 4,135,822 barrels of petroleum-based products imported and an average of approximately 11,331 barrels per day. There were increases in the imports of Gasoil, Fuel oil, LPG and Avgas while imports for Mogas, Kerosene and Avjet declined during this period.

1.2 Consumption of Petroleum Products

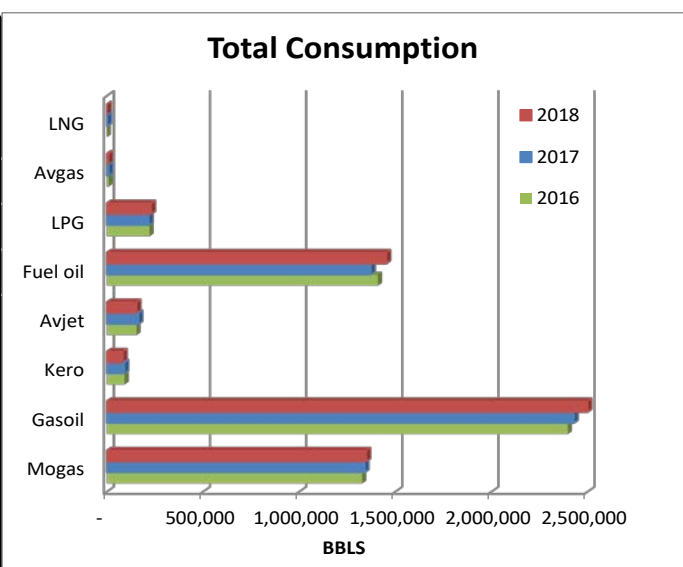
Consumption of petroleum products was generally calculated based on opening stock, closing stock and import volumes for the year.

$$\text{Consumption} = \text{Opening stock} + \text{Import volumes} - \text{Closing Stock}$$

Sales data received from Guyoil, Rubis and SOL as well as consumption data from Bosai Minerals Group (Guyana) Inc. (BOSAI) were also incorporated in the calculation of total consumption.

A total of 5,859,724 barrels of petroleum-based products was consumed in 2018 with an average of 16,054 barrels per

TOTAL CONSUMPTION (BBLs)					
January - December		2016	2017	2018	% change
	Mogas	1,327,595	1,340,712	1,349,687	0.67%
	Gasoil	2,396,994	2,428,990	2,578,600	6.16%
	Kero	92,048	91,009	83,581	-8.16%
	Avjet	154,171	164,564	154,992	-5.82%
	Fuel oil	1,410,147	1,373,781	1,453,668	5.82%
	LPG	222,468	218,665	230,612	5.46%
	Avgas	9,052	9,499	8,250	-13.15%
	LNG	-	3,082	333	-
	Total	5,612,475	5,630,303	5,859,724	4.07%
	Bpd	15,335	15,425	16,054	4.07%



day. This represents a 4.07% increase when compared to 2017². There were also increases in the consumption of all products except for kerosene, jet fuel and aviation gasoline.

The increase in gasoline consumption for 2018 can be attributed to an increase in motor vehicle registration and there was an increase in LPG consumption and a decrease in kerosene consumption, suggesting greater use of cooking gas over kerosene. In addition, there was an increase in overall fuel oil consumption which may be attributed to expansion in bauxite production and manufacturing as well as higher HFO consumption by GPL. Also, the reason for the decrease in jet fuel consumption is not conclusive as there was increased flight travel at international airline carriers. The decrease may be indicative of better fuel efficiency or a higher opening stock at the beginning of the year.

Notwithstanding a decrease in diesel fuel use from Trawlers' Association and RUSAL/BCGI, there was an overall increase in diesel consumption with increases from the oil companies, GPL and new importers (Lynwill International, Atlantic Fuels and China Zhonghao Inc.). The increase in diesel volumes can be attributed to improvements in the rice, forestry and manufacturing industries and LFO consumption by GPL. Avgas consumption have also increased indicating more domestic travel. A smaller volume of liquid natural gas (LNG) was used by a local beverage company as this pilot project was completed in early 2018.

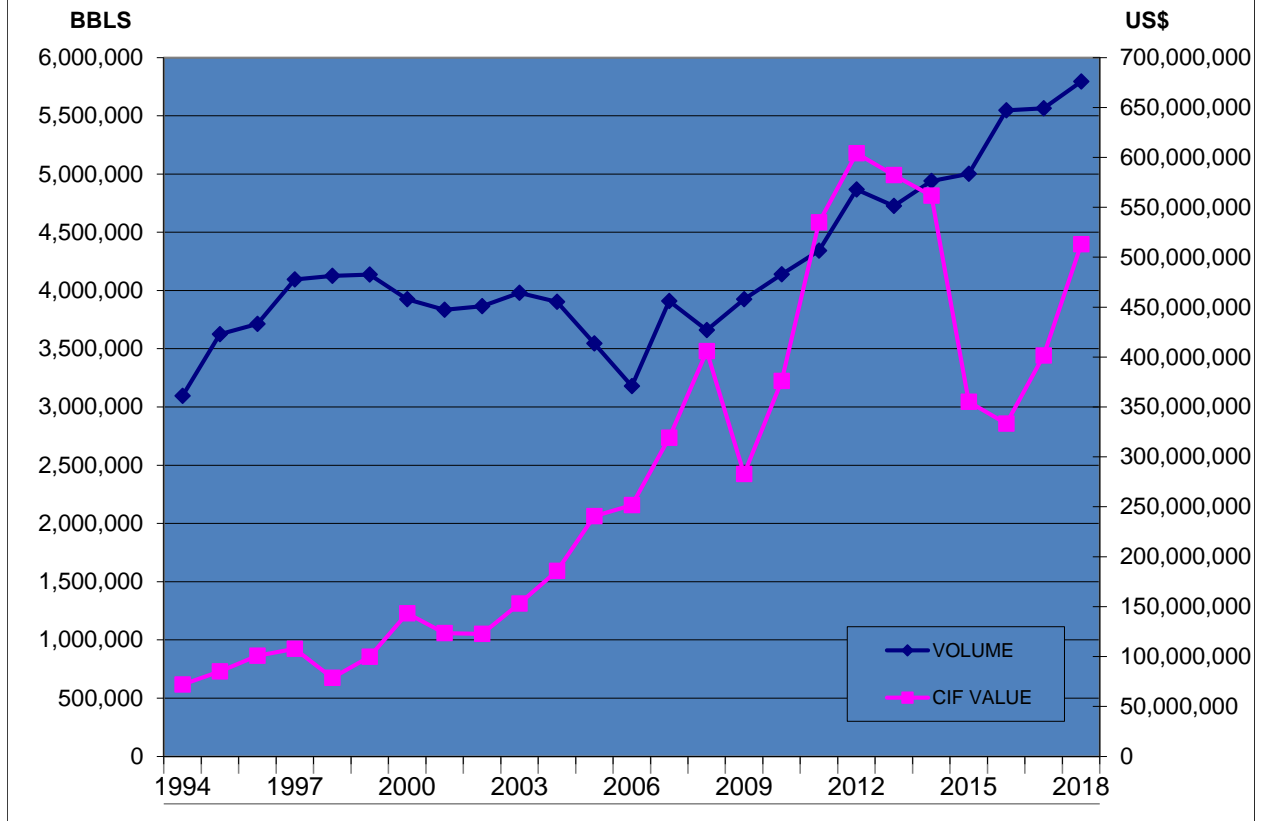
1.3 Acquisition Cost and Retail Prices

Petroleum imports for 2018, which amounted to 5,792,857 barrels, were acquired at a cost, insurance and freight (CIF) value of US\$513,020,563, representing an increase of 27.77% from the acquisition cost in 2017.

² Gasoil and Fuel oil purchased locally by GPL from the oil companies were discounted to avoid double counting.

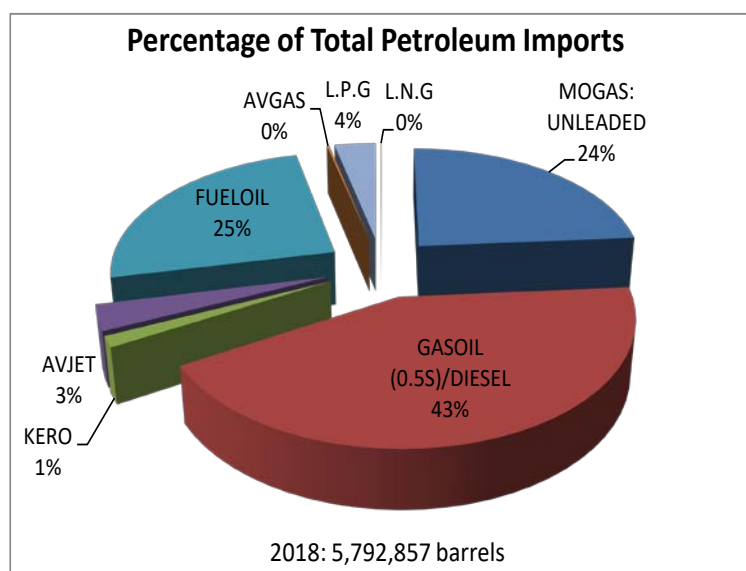
<u>TOTAL IMPORTS OF PETROLEUM PRODUCTS FOR</u>			
<u>PERIOD 1994 TO 2018</u>			
	VOLUME		CIF VALUE
	BBLs	LTRS	US\$
1994	3,095,728	492,181,436	72,067,912
1995	3,624,053	576,178,402	85,161,130
1996	3,711,893	590,143,846	100,696,609
1997	4,093,677	650,842,653	107,727,233
1998	4,125,765	655,944,238	78,539,499
1999	4,137,266	657,772,751	99,704,391
2000	3,924,614	623,963,783	143,277,974
2001	3,834,651	609,660,809	123,373,521
2002	3,865,505	614,566,203	122,643,684
2003	3,980,199	632,801,092	153,193,966
2004	3,901,760	620,330,288	185,702,255
2005	3,546,069	563,779,936	240,663,147
2006	3,179,925	505,567,690	251,594,083
2007	3,910,234	621,677,546	319,122,554
2008	3,660,583	581,986,208	405,960,936
2009	3,924,723	623,981,072	282,909,993
2010	4,137,931	657,878,518	375,951,700
2011	4,341,345	690,218,765	534,982,446
2012	4,867,748	773,910,151	604,000,602
2013 (revised)	4,726,150	751,397,875	582,281,795
2014	4,938,855	785,215,261	561,633,697
2015	5,001,497	795,174,539	355,201,732
2016	5,547,048	881,910,233	333,248,345
2017	5,563,733	884,562,863	401,521,446
2018	5,792,857	920,990,646	513,020,563
TOTAL	105,433,810	16,762,636,803	7,034,181,213

Total Imports 1994 to 2018

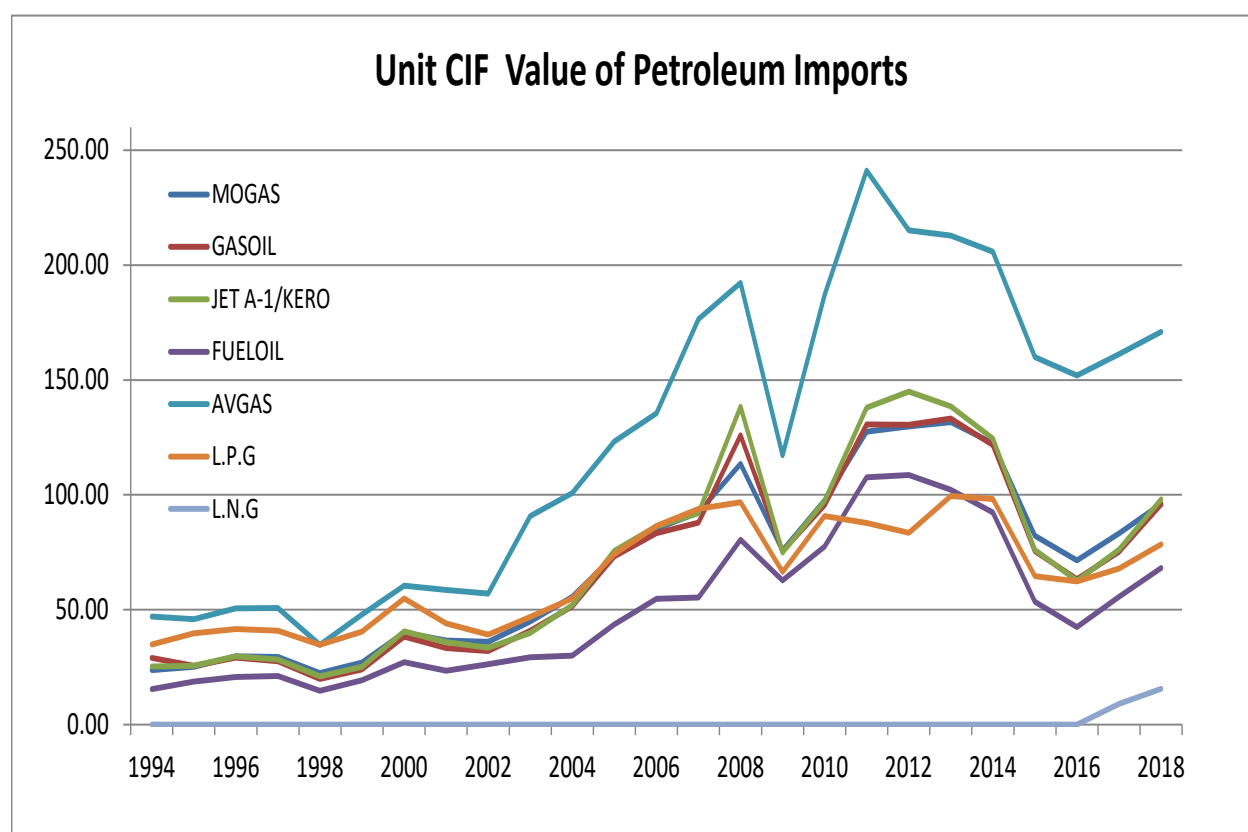


TOTAL IMPORTS BY PRODUCTS FOR THE YEAR

	2018		
PRODUCTS	VOLUME		C.I.F VALUE
	LTRS	BBLs	US\$
MOGAS: UNLEADED	209,457,810	1,317,450	126,496,169
GASOIL (0.5S)/DIESEL	408,995,323	2,572,503	246,859,358
KERO	12,160,621	76,488	7,397,613
AVJET	23,793,998	149,660	14,780,003
FUELOIL	231,862,191	1,458,369	99,560,567
AVGAS	1,305,127	8,209	1,403,284
L.P.G	33,362,576	209,844	16,471,308
L.N.G	53,000	333	52,260
TOTAL	920,990,646	5,792,857	513,020,563



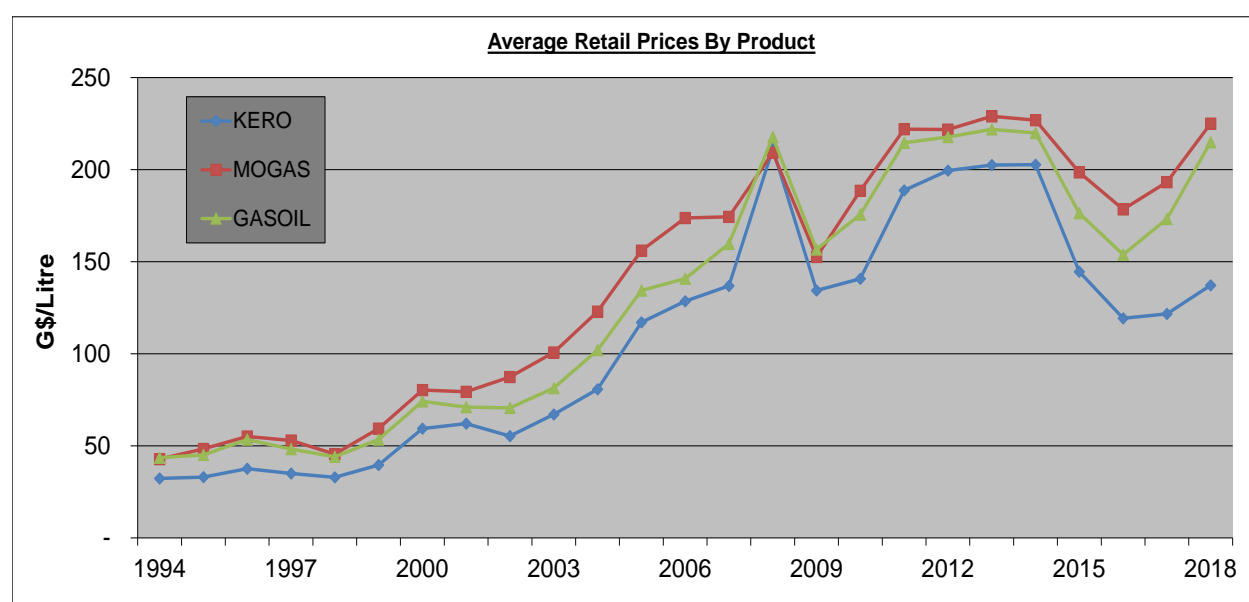
For 2018, Gasoil was the most imported product representing 43% of total imports and a CIF value amounting to 48% of total acquisition expense³. Fuel oil and Mogas followed Gasoil reflecting 25% and 24% of total imports respectively with corresponding CIF values amounting to 19% and 25% of total acquisition costs, respectively. The remaining products (Kerosene, Avjet,



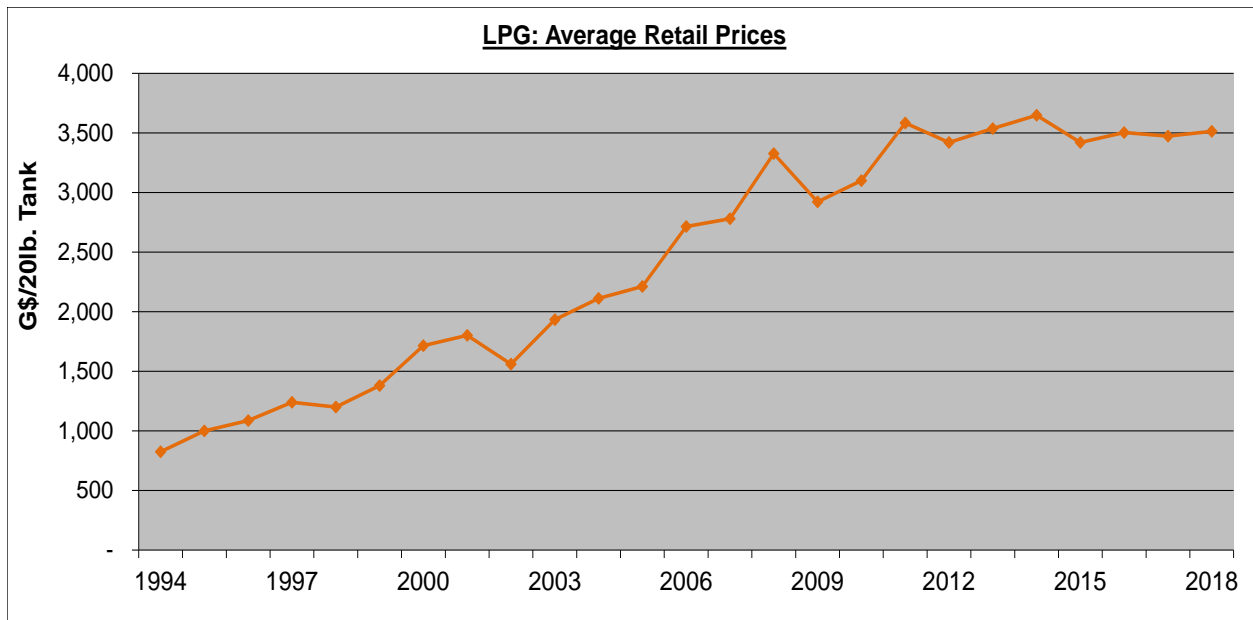
³ Gasoil CIF value was estimated for volumes used by the Trawler Association, United Petroleum Inc., China Zhonghao Inc. and Atlantic Fuels Inc. in 2018.

LPG, LNG and Avgas) constituted no more than 8% of total imports and 8% of total acquisition costs.

The average cost per barrel of petroleum-based imports increased from US\$72.17 in 2017 to US\$ 88.56 in 2018, an increase of 22.72%. This upward trend also continued for the average unit CIF value for each petroleum product. There were increases of 15.39%, 27.69% and 28.67% in the average unit CIF value (US\$/bbl) for Mogas (gasoline), Gasoil (diesel) and Jet fuel/Kerosene respectively. In addition, the average unit CIF value for Fuel oil, Aviation Gasoline (avgas), LPG (cooking gas) and LNG also increased by 22.59%, 5.99%, 15.45% and 73.84% respectively.



Retail prices for Mogas (gasoline), Gasoil (diesel) and Kerosene increased during 2018 by an average of 18.25%. Specifically, average retail price for gasoline and diesel increased by 16.48% and 24.10%, respectively. Also, the average retail price for domestic kerosene rose by 12.75% while the average retail price for cooking gas (LPG) decreased slightly by 1.17%.



1.4 Solar Energy

1.4.1 Solar PV Systems for Public Buildings

The renewable energy programme for 2018 resulted in the award of contracts for the installation of solar photovoltaic (PV) systems on the rooftops of 90 Government buildings which represent an additional 1,942 kilo Watts (kW) of installed solar power capacity in 2018 alone. The combined PV systems for the



renewable energy program will generate about 3,198 Mega Watt hours of energy from solar panels saving G\$188 million annually while avoiding 2,322 tonnes of carbon dioxide emissions annually.

	Buildings	Location	Region	System Size (kWp)
1	RDC Administrative Building	Port Kaituma	1	5.5
2	Port Kaituma Police Station	Port Kaituma	1	5.5
3	Port Kaituma Secondary School Dorms	Port Kaituma	1	8.8
4	Doctor's Living Quarter	Port Kaituma	1	5.5
5	General Registrar's Office	Anna Regina	2	11
6	Regional Democratic Council, Region 2	Anna Regina, Essequibo	2	11
7	Suddie Hospital / Suddie Diagnostic Centre	Suddie	2	44
8	Abram Zuil Secondary School	Essequibo	2	11
9	Bell West Health Centre	Canal #2	3	5.5
10	Vreed-en Hoop Secondary School	VREED-EN-HOOP, WEST COAST DEMERARA	3	11
11	West Demerara Regional Hospital	West Coast Demerara	3	33
12	Leonora Magistrate's Court	LEONORA - WEST COAST DEMERARA	3	11
13	Burrowes School of Art	Georgetown	4	11
14	Durban Backlands Practical Instruction Centre	Georgetown	4	11
15	National Agricultural Research and Extension Institute (NAREI)	Main Building, Mon Repos	4	44
16	Madewini Training Center	East Bank Demerara	4	22.2
17	Ministry of Legal Affairs	Georgetown	4	66
18	Fort Wellington Health Centre	Mahaicony	5	11
19	Mahaica-Mahaicony-Abary/Agricultural Development Authority	Onverwagt West Coast Berbice	5	11
20	Mahaicony Secondary School	L'ENTERPRISE MAHAICONY E. C. D	5	11
21	No. 8 Secondary School	NO. 8 VILLAGE WEST COAST BERBICE	5	11
22	Berbice Magisterial District Court	Berbice	6	11
23	Central Corentyne Secondary School	Berbice	6	11
24	Deeds Registry	Berbice	6	11
25	Port Mourant District Hospital	Berbice	6	33
26	Bartica Learning and Resource Centre	Bartica	7	11
27	Police/GRA	Bartica	7	11
28	St John The Baptist Primary School	Bartica	7	11
29	Two Miles Primary School	Bartica	7	11
30	RDC Main Building	Mahdia	8	11
31	Guest House	Mahdia	8	11
32	Mahdia Secondary School Boys Dormitory	Mahdia	8	11
33	Mahdia Secondary School	Mahdia	8	5.5
34	Mahdia Secondary School Girls Dormitory	Mahdia	8	5.5
35	Mahdia Primary School	Mahdia	8	5.5

	Buildings	Location	Region	System Size (kWp)
36	Regional Hospital Lethem	Lethem	9	22
37	Regional Democratic Council (Main Office)	Lethem	9	16.5
38	GRA/Police/Health	Lethem	9	22
39	Saint Ignatius Secondary School	Lethem	9	16.5
40	Linden Foundation Secondary School	68 DAVID ROSE AVE, MACKENZIE, LINDEN	10	16.5
41	Linden Hospital Complex	Linden	10	55
42	Wismar Hospital	Linden	10	22
43	Mackenzie High	Linden	10	11
44	Wisbury Secondary School	Linden	10	11
45	Department of Environment MOP	High St, Georgetown	4	10
46	Ministry of Natural Resource & Environment	Duke St, Georgetown	4	42
47	North Ruimveldt Secondary School	Ruimveldt, Georgetown	4	20
48	New Amsterdam Regional Hospital	New Amsterdam, Berbice	4	50
49	St. Stanislaus College	Brickdam, Georgetown	4	20
50	Guyana Police Force Police Headquarters , Eve Leary	Young St, Georgetown	4	22
51	Ministry of Public Infrastructure (WSG Building)	Kingston, Georgetown	4	44
52	Prime Minister Residence	Georgetown	4	10
53	Leonora Cottage Hospital	Leonora, WCD	3	44
54	Central Immigration Passport Office	Camp Street, Georgetown	4	22
55	Ministry of Public Infrastructure (Murley Building)	Kingston, Georgetown	4	11
56	Magistrate Court Plaisance	Plaisance, ECD	4	11
57	Ministry of Telecommunications	Camp Street, Georgetown	4	11
58	Teaching Service Commission	Brickdam, Georgetown	4	11
59	Scholarship Division Ministry Of the Presidency	Durban & Vlissingen Rds	4	11
60	Public Utilities Commission	Albertown, Georgetown	4	11
61	Civil Defense Commission	Thomas Lands	4	11
62	Guyana Defense Force Camp Ayanganna	Thomas Lands	4	40
63	NAREI	Mon Repos	4	16
64	Parliament Building	Georgetown	4	120
65	Carnegie School of Home Economics	Georgetown	4	22
66	Guyana Defence Force Coast Guard	Georgetown	4	33
67	Institute of Applied Science and Technology	Turkeyen, Greater Georgetown	4	66
68	Ministry of Public Security	Brickdam	4	26
69	Ministry of Social Protection	Lot 357 East and Lamaha Streets	4	26
70	Guyana Sugar Corporation Inc. (Ground Mounted)	LBI Estate Compound	4	132

	Buildings	Location	Region	System Size (kWp)
71	Civil Defence Commission	Camp Stephenson Compound, Timehri, East Bank Demerara	4	26
72	Diamond Diagnostic Centre	East Bank Demerara	4	26
73	Buxton-Vigilance MoA/NDIA Drainage Pump Station	Buxton	4	9
74	Enmore MoA/NDIA Drainage Pump Station	Enmore	4	9
75	Lusignan MoA/NDIA drainage pumps stations	Lusignan	4	9
76	Guyana National Broadcasting Agency	18 Lamaha St, Georgetown	4	11
77	National Public Health Reference Lab	New Market Street	4	22
78	Guyana Defence Force Camp Stephenson (Administrative Building)	Timehri	4	55
79	Abrams Creek Primary School	Abrams Creek	2	2.6
80	Linden Enterprise Network Inc	Linden	10	33
81	Amelia's Ward Primary School	Linden	10	11
82	New SilverCity Secondary School	Linden	10	11
83	National Library	Linden	10	11
84	Guyana Lands & Surveys	Linden	10	11
85	National Intelligence Centre	Georgetown	4	33
86	Ministry of Foreign Affairs (Main Building)	Georgetown	4	44
87	Bureau of Statistics	Georgetown	4	44
88	North Georgetown Secondary School	Georgetown	4	11
89	Guyana Energy Agency, Bartica Base	Bartica	7	8
90	Kato Primary School	Kato	8	1
	Total (kWp)			1,942.60

In addition to the above, GEA's Engineers provided technical and procurement support, monitoring and supervision for the following installations:

- 22 kWp solar PV system and 160 kWh of battery storage at State House. This installation is in addition to a 43kW grid-connected solar PV system installed in 2017.
- 130 kWp grid-connected solar system at the Ministry of the Presidency
- For the Ministry of Communities:

Location	Building	System Size (kWp)
Anna Regina	Town Hall	12
Corriverton	Town Hall	8
Rosehall	Town Hall	6
New Amsterdam	Town Hall	12
Bartica	Town Hall	10
Bartica	Community Center Ground	6
Linden	Town Hall	25

- 16 kWp of solar array and 130 kWh of energy storage at 5 NAREI buildings in Regions 4, 8, 9 and 10.
- 4.2kWp stand-alone solar PV system at the operator's hut, Hope High Level Sluice, Hope Village, East Coast of Demerara for the National Drainage and Irrigation Authority (NDIA). This system provides lighting of the sluice gates at the Hope High Level Sluice and the operator's hut.
- Office of the Prime Minister and Hydromet as follows:



Location	Agency/Building	System Size (kWp)
Aishalton	OPM/NCN	4.0
Orealla	OPM/NCN	2.5
Georgetown	Hydromet	9.54

- As part of the Green Bartica Initiative, a 21.5 kW grid connected solar PV system at 3-Miles Secondary School Dormitory financed by the Japan Caribbean Climate Change Partnership (JCCCCP).
- A total of 30kWp Solar PV Systems to power elevators and lights at 5 Pedestrian Overhead Crossings and Solar grid-tied PV systems for the Document Centre, Ministry of Public Infrastructure.



MINISTRY OF PUBLIC INFRASTRUCTURE (MERLE BUILDING)



Ministry of the Presidency



Linden Foundation Secondary School

1.4.2 Repairs to Existing Solar PV Installations

In 2016 four schools without electricity were retrofitted with standalone solar PV systems by the Guyana Energy Agency (GEA). Three (3) of the systems were installed along the Pomeroon River and the other at 58 miles. In March 2018, it was reported that two schools, Hackney and Abrams Creek Primary Schools, on the Pomeroon River were experiencing difficulties with the systems. Upon visiting the locations, it was found that the inverters were defective. An interview was conducted with the teachers who operate the systems and based on their responses it appears that the inverters were improperly used. The teachers of these schools indicated that they were new and did not know the limitations of the inverters. The inverters were collected and sent to the supplier (Farfan & Mendes) for examination and it was found that transistors (a non-warranty component) were damaged in both inverters. The inverters were repaired and reinstalled at the schools in August:

Abram's Creek: The 600 watts inverter was reinstalled and the P.V cables from the P.V panel were tested and the charge controller was reinstalled and tested. The battery was found depleted and was placed to recharge by the solar system. A follow up with the school indicated that the system is operational.

Hackney: The 2000 watts inverter was installed and tested, batteries and cable were installed and additional loads were removed from the distribution breaker panel. The system was placed in operation since the batteries were at a high state of charge.

Energy Engineers Mr. Brian Constantine and Mr. Hemanchan Gokoel replaced the defective batteries, for emergency lighting system, at President's College. They continued to inspect and test the system with the new batteries.

1.4.3 Solar-Powered Street Lights

Engineers of GEA monitored the installation of forty-five (45) integrated stand-alone solar powered 80W Light Emitted Diode (LED) street lights at the Guyana National Park which was financed by the British High Commission in Georgetown, through the UK's Prosperity Fund, at a total cost of G\$8,158,288.





GEA also supported the installation of Seven (7) Integrated Solar Powered 80W LED lights at the Hope High Level Sluice. Based on the current electricity tariffs, the simple payback is 4 years with an estimated savings of about 2,452 kWh and 1,768kg of CO₂ annually.

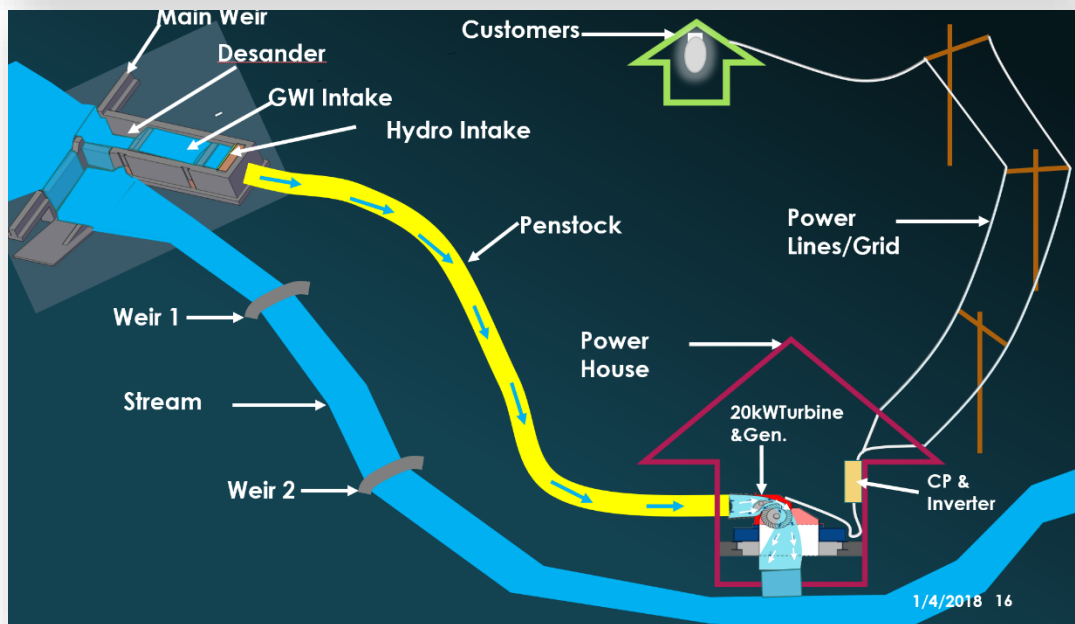
1.5 Hydropower

In May 2018, based on a request in 2017, GEA received a Grant of EUR 63,851.11 from the Government of the Federal Republic of Germany towards the construction and operationalizing of a 20kW hydropower power plant at Hosororo, Region 1.

GEA, in June 2018, held a public consultation with residents of Mabaruma and other stakeholders as a part of the process to ensure that they were aware of what the project entails and its benefit to the community.

Construction works commenced in September 2018 and were completed in December 2018. Testing





and commissioning of the plant commenced during December 2018 and is expected to be completed in the first quarter of 2019.



Additional Accomplishments in 2018:

- GEA's Engineers revised the design, updated the feasibility study and prepared tender-ready documents for a 150kW Kato Hydropower Project. The project was tendered in 2018 and the bid submissions are currently being reviewed by Evaluators and HECI.
- GEA's Engineers have commenced review and assessment of a 5MW Hydropower potential at Eclipse Falls, Region 1. Additional assessments will be advanced in 2019.
- Engineers updated the feasibility study for a proposed 1MW hydropower plant at Ikuribisi, Region 7, for possible supply to the Bartica grid.
- GEA supported HECI in advancing the geotechnical investigation of the Moco-Moco hydropower project.
- GEA's Engineers updated the Kumu Feasibility Study from 1 MW to 1.5 MW based on additional technical assessments.
- In seeking to study the Ilubia Hydropower site located in the village of Paruima, Region 7, the GEA engineers and a HydroMet Representative organised and conducted a visit to the site. On the visit, the team installed a water level Gauge and Staff Gauge on the Ilubia river, conducted flow measurements and assessed the layout of the village in relation to the site and its current mini grid with the use of a drone.



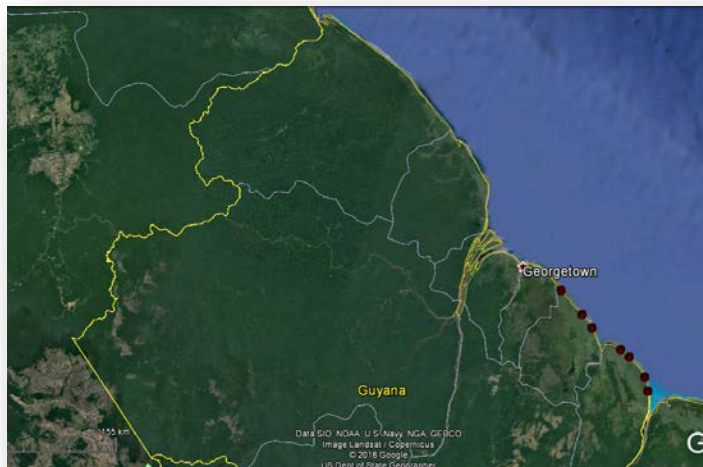
- Reviewed a possible 12MW hydropower development at Tiger Hill on the Demerara River.
- In continuing efforts to collect data on potential hydropower sites for future development, an initial assessment was conducted in the village of Monkey Mountain located in Region 9. A level logger will be installed in 2019 and the results will be assessed.

Seventeen (17) visits were conducted at seven (7) potential hydropower sites in Guyana during the year 2018. The Table below depicts the sites visited, their location and the number of visits conducted at each site:

Name of Site	Location	Number of Site Visits
Hosororo	Region 1	9
Eclipse Falls	Region 1	1
Paruima	Region 7	1
Kato	Region 8	1
Monkey Mountain	Region 8	1
Moco Moco	Region 9	1
Kumu	Region 9	3

1.6 Wind Energy

1.6.1 Wind Sites Prospecting



GEA had identified 7 potential locations/sites along Guyana's coast for the development of utility scale (grid connected) wind farms.

GEA has supported HECI towards the installation of Wind measurement towers at 4 potential locations/sites along Guyana's coast. These four sites are currently being zoned by CH&PA.

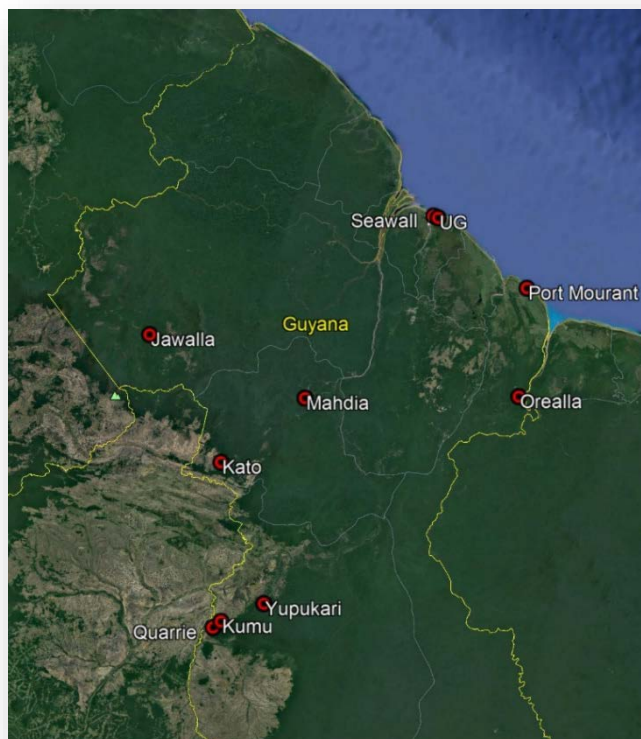
EPA is expected to grant a no-objection for the

identified sites.

Wind Resource Assessment

To date wind resource assessments have been conducted at the following 10 locations:

1. Georgetown Seawall, Region 4
2. UG, Turkeyen Campus, Region 4
3. Port Mourant, Region 6
4. Orealla, Region 6
5. Jawalla, Region 7
6. Mahdia, Region 8
7. Kato, Region 8



8. Yupukari, Region 9
9. Kumu, Region 9
10. Quarrie, Region 9

During 2018, GEA had active wind measuring stations at the following 2 locations: Quarrie and Kato.

1.7 Energy Efficiency Interventions

1.7.1 2018 Energy Efficiency Programme

One of the Guyana Energy Agency's strategy to influence energy efficiency focuses on the area of conservation and careful use of energy through wise equipment choices and circumventing unnecessary energy consumption. The Government's energy efficiency programme for 2018 resulted in a Contract for the replacement of inefficient lights and the installation of 10,978 LED lights and 1,120 occupancy sensors with resultant energy reduction of about 768MWh and savings of about G\$45 million per year:

Region	Location	LED Lights Installed	Occupancy Sensors	Outdoor LED Lights
1	RDC Admin. Building 1	19	17	0
	Port Kaituma Police Station	0	17	0
	Port Kaituma Sec. School Dorm	55	26	0
	Doctors Living Quarters	0	5	0
	Port Kaituma Sec. School	64	10	0
	Port Kaituma Hospital	8	0	0
2	8th of May Nursery School	0	3	0
	Essequibo Technical Institute	0	136	7
	Department of Education - Region 2	0	44	0

Region	Location	LED Lights Installed	Occupancy Sensors	Outdoor LED Lights
	Dartmouth Health Center	0	16	0
	Walton Hall Nursery School	0	2	0
	Hampton Court Primary	0	17	0
	Sparta Primary School	0	21	0
	Cotton Field Secondary School	56	0	0
	Anna Regina Health Center	0	4	0
	8th of May Secondary	0	33	0
	RDC Region #2	48	42	0
	General Registrar Office	98	62	0
	Abrams Zuil Secondary School	97	26	0
	Guyana Credit Union	3	0	0
	CV Nunes Primary School	326	0	0
	GECOM - Region 2	23	0	0
	Hampton Court Primary School	106	0	0
	Guyana Revenue Authority - Region #2	28	0	0
	Anna Regina Technical Institute	356	0	0
	8th of May Secondary	0	33	0
	Dartmouth Health Center	0	16	0
	Walton Hall Nursery School	0	2	0
	Hampton Court Primary	0	17	0
	Sparta Primary School	0	21	0
	Cotton Field Secondary School	56	0	0

Region	Location	LED Lights Installed	Occupancy Sensors	Outdoor LED Lights
	Anna Regina Health Center	0	4	0
3	Belle West Health Center	26	10	0
	West Demerara Regional Hospital	655	52	0
	Leonora Health Center	0	5	0
	Leonora Diagnostic Center	0	11	0
	Meten-en-Zorg	0	5	0
	Windsor Forest Health Center	0	4	0
	La Grange Health Center	0	5	0
	Canal No.1 Health Center	0	5	0
	No. 2 Health Center	0	4	0
	Regional Education Office, Region 3		6	0
4	Charlestown Dispensary	0	3	0
	GHPC	0	97	0
	Kitty Health Center	0	3	0
	East La Penitance Health Center	0	5	0
	North La Penitance Health Center	0	6	0
	Campbellville Health Center	0	4	0
	NCN	0	15	0
	NAREI	153	0	0
	Madewini Training Centre	20	0	0
	New Campbellville Sec. School	186	0	0
	Scholarship Division MOTP	97	0	0

Region	Location	LED Lights Installed	Occupancy Sensors	Outdoor LED Lights
	Civil Defense Commission	71	0	0
	Cummings Lodge Sec. School	142	0	0
	MOPI (Merle Building)	8	0	0
	LBI Nursery School	11	0	0
	LBI Primary School	2	0	0
	LBI Secondary School	70	0	0
	CPCE	1073	0	0
	University of Guyana	1895	0	40
	Burrowes School of Arts	120	19	0
	Institute of Applied Science & Technology	335	0	0
	Durban Backlands Practical Instruction Center	59	10	0
	Ministry of Legal Affairs	226	1	0
	Demerara Harbour Bridge	206	2	0
	Guyana Marketing Cooperation	148	0	0
	Ministry of Amerindian Affairs	115	19	0
5	Fort Wellington Health Centre	77	1	0
	MMAADA	84	1	0
	Mahaicony Sec. School	135	13	0
	No.8 Sec. School	5	4	0
6	Central Corentyne Sec. School	61	8	0

Region	Location	LED Lights Installed	Occupancy Sensors	Outdoor LED Lights
	Port Maurant District Hospital	234	0	0
	New Amsterdam District Hospital	63	0	4
	Berbice Magisterial District Court	26	10	0
	Deeds Registry/ High Court	237	18	0
7	Bartica Learning & Resource Center	31	4	0
	Police/GRA	16	9	0
	St John Baptist Primary School	72	10	0
	Two Miles Primary School	40	0	0
	Three Miles Secondary School	72	6	0
8	RDC Main Building Mahdia	43	6	0
	Guest House Mahdia	2	4	0
	Mahdia Sec. School	1	6	0
	Mahdia Nursery School	14	2	0
	Mahdia Police Station	2	0	0
	Geology & Mines substation Mahdia	27	0	0
	Gecom Mahdia	4	0	0
9	Regional Hospital Lethem	8	1	0
	Regional Democratic Council Lethem	62	14	0
	GRA/Police/ Health/ Court Lethem	52	10	4

Region	Location	LED Lights Installed	Occupancy Sensors	Outdoor LED Lights
	Saint Ignatius Sec. School	60	0	0
	Saint Ignatius Hostel	93	0	0
	Arapaima Primary School	68	4	2
	Guyana Geology and Mines Commission	25	9	3
10	Linden Foundation Secondary School	710	8	0
	Linden Hospital Complex	1186	61	0
	Wismar Hospital	104	0	
	Mackenzie High	301	29	0
	Wisburg Secondary School	42	17	0
Total		10,918	1,120	60

GEA provided support to the Ministry of Finance towards the installation of eight (8) energy efficient inverter type air conditioning units to replace old inefficient air conditioning units.

GEA supported the Ministry of Public Infrastructure for a grant funded project from JICA to procure 10,740 energy efficient street lights.

Guyana is one of the beneficiary countries under the second phase of the Latin America and the Caribbean Energy Efficiency Program (PALCEE) supported by the Austrian Development Cooperation and the Latin American Energy Organisation (OLADE). This project aims to achieve sustainable energy savings, prioritize investment needs in the energy sector, and improve the country's finances and reduce carbon dioxide emissions. These aims would be realized by enhancing local capacity to improve energy efficiency and by strengthening the institutions responsible for guiding and directing the energy efficiency programmes nationwide. In 2018, 32 old/inefficient air conditioning units were

replaced with energy efficient Inverter type air conditioning units, 400 inefficient lights (MV & fluorescent) were replaced with LEDs. The beneficiary organizations were the Leonora Cottage Hospital, National Cultural Center and the Ministry of Public Infrastructure.



1.7.2 Energy Assessments

During 2018, GEA's Engineers conducted energy audits/assessments and prepared Energy Assessments reports for the following 21 Buildings:

1	Royal Castle Sheriff Street Location
2	Guysuco Head Office Building
3	Guysuco Information Service Department
4	Royal Castle Regent Street Location
5	Demerara Bakery
6	Ministry of Foreign Affairs
7	National Intelligence Centre
8	Royal Castle Croal Street Branch
9	Royal Castle Hinck Street Branch
10	Royal Castle Head Office
11	Royal Castle South Ruimveldt Branch
12	Royal Castle Diamond Location
13	Royal Castle Vreed-en-Hoop Location
14	National Insurance Scheme Brickdam

15	National Insurance Scheme Camp Street
16	CJIA Air Traffic Control Center
17	GRDB Burma Research Institute
18	National Insurance Scheme Leonora
19	National Insurance Scheme Bartica
20	British High Commission
21	Guyana Marketing Corporation

1.8 Caricom Energy Month

CARICOM Energy Month (CEM) is now an annual feature that is celebrated simultaneously by CARICOM member states. CEM 2018 was celebrated under the theme ***“Clean Energy, Good Governance and Regulation: Generating Growth and Resilience”***. The Guyana Energy Agency planned the following core activities to commemorate Energy Month 2018: Express Your Energy (For Primary School students), School Presentations (Secondary Students), An Art Competition and a Renewable Energy Seminar. This year, the Hinterland Electrification Company (HECI), through the IDB’s Sustainable Energy Promotion Project, collaborated with GEA to execute some of the activities.

1) EXPRESS YOUR ENERGY

This activity, attended by sixty exuberant students of grades 5 and 6, was held on Friday November 2, 2018 in the auditorium of Cotton Field Secondary School Region 2 and jump started GEA’s activities for CEM 2018.

Representing 6 Primary schools that were selected by the Regional Educational Office, the students hailed from: 8th of May Primary, Sparta Primary, CV Nunes Primary, Taymouth Manor Primary, Queenstown Primary and Suddie Primary. Students were encouraged to convey their interpretation and knowledge of energy sources, sustainability, energy conservation and energy efficiency through artwork/pictorial illustrations, word search and conservation tips.

From its conception in 2012, the activity has targeted Primary School Students and was hosted this year by the GEA, in collaboration with the Hinterland

Electrification Company (HECI) through the IDB funded Public Awareness Project - "Promoting the Benefits of Renewable Energy Technologies and the Rational Use of Energy". Though each group of students were placed in teams that activity is non-competitive. Students were therefore not judged or ranked based on their illustrations but rather, each student (and teacher) was awarded tokens of appreciation as an honorary 'Energy Champion'.

Ms. Shondelle Hercules, District Education Officer Primary, who gave remarks on behalf the Regional Education Officer Ag. Miss Nicola Matthews, expressed thanks to GEA for hosting the activity in Region 2. She said that the Regional Office "...appreciates the timely initiative which was educational and presented in a fun format which both students and teachers enjoyed...The activities that were done can be integrated into our school's curriculum....". While Primary Officer Mr. Netram Doobay said that "...the activity, even though it focused on energy, demonstrated extensive curriculum integration as the tasks the students had to complete exposed them to Social Studies, Grammar, Science, Art and would even aid them in composition writing...". He too expressed sentiments of thanks to the GEA and HECI for remembering Region 2 and choosing to have their students benefit from the exercise.

The Guyana Energy Agency wishes to extend heartfelt thanks to Regional Education Officer Ag. Ms. Nicola Matthews and team for their collaboration and assistance in making this activity a success. A special thank you is also being extended to the Head Teacher and Deputy Head of the host school, Cotton Field Primary.





2) SCHOOL PRESENTATIONS:

The Guyana Energy Agency facilitated 17 school presentation during the month of November. While school presentations are an ongoing information dissemination activity of GEA the Agency sought to target schools from outlying areas as part of its Energy Month Activity. Presentations were facilitated at schools in Regions 1, 4, 6, 7 and 10. The schools that were recipients of this ongoing communication exercise during CEM 2018 were:

- **Region 1:** *Port Kaituma Secondary*
- **Region 2:** *8th of May, Taymouth Manor Primary and Suddie Primary*
- **Region 4:** *Lodge, East Ruimveldt, Tucville, Richard Ishmael & North Georgetown Secondary, Tutorial High and North Ruimveldt Multilateral.*
- **Region 6:** *Tutorial Academy & Berbice Educational Institute*
- **Region 7:** *Bartica Secondary & Three Mile Secondary.*
- **Region 10:** *McKenzie High and Wisburg Secondary*

The presentations were conducted in the form of viewing a ten minute documentary followed by a power point on Sustainable Energy Initiatives and Conservation Practices. Students were engaged in discussions on energy and energy related issues such as global warming and climate change, while being encouraged to practice energy efficiency and conservation. Key definitions were highlighted for example 'Sustainable Energy', 'Energy Conservation' and 'Energy Efficiency' among others. The theme for energy month was also discussed.

After the delivery of the presentation students were encouraged to answer questions and tokens (T'Shirts LED bulbs, Mugs and pens) were distributed to those who answered correctly. Samples of the Agency's brochures and 'Guideline to an Energy Efficient Home' booklets were presented to the respective Principals to facilitate them being placed in the schools' libraries for informational purposes.





3) ART COMPETITION

In April of this year GEA launched an art competition for Secondary School students titled 'Powering a Green Guyana'. Featured as one of the activities to commemorate CEM 2018 the activity implemented in an effort to sensitize youth, between the ages of 15-19, about energy use, environmental issues and sustainable development and their inextricable links at a national level. It also aimed to facilitate discussions on such topics among students and teachers with encouraged learning throughout the process.

On November 05th 2018, GEA facilitated the judging of the entries. The judging panel included representatives from the Burrowes School of Arts and GEA with Mr. Ivor Thom, Principal of the Burrowes School of Art and Renowned Sculptor acting as chief judge. At the end of the exercise Students of Queens College emerged in 1st and 3rd place while Hope Secondary copped the second position.



The conferral of plaques and other prizes to the winners will take place in January 2019 while selected submissions will be used to further promote and educate the

general Guyanese public about alternative energy and energy conservation by being incorporated into the design of GEA's 2019 Calendar.

1.9 Information Dissemination and Awareness Activities

GEA participated and facilitated many information dissemination and awareness activities in 2018:

- o Conducted 45 Sustainable Energy presentations to schools reaching about 4,000 students.
- o Conducted 6 Presentations to Ministries, Agencies, Private Sector and NGOs.
- o Conducted 2 Seminars and 2 Workshops on Sustainable Energy
- o Broadcasted 1,305 Radio Advertisements
- o Broadcasted 114 Television adverts, 120 infomercials and 104 documentaries
- o Published 136 print advertisements
- o Distributed 5,400 brochures, 1,040 booklets and 170 posters.





2.0 Legal & Licensing Division

The Legal & Licensing Division serves to execute a primary function of the GEA through 'monitoring the performance of the energy sector in Guyana, including the production, importation, distribution and utilisation of petroleum and petroleum products' (s. 5(2)(c) GEA Act cap 56:05). This is exercised through the corroboration of the **Petroleum and Petroleum Products Regulations 2014** permitting the issuance of licences of the various categories (*import, wholesale, retail, bulk transportation carrier, storage, export, consumer installation*) and site and vehicle inspections to ensure safety and environmental compliance.

The Licensing Division issued at total of 1,279 licences in 2018. This represents a 13% decrease from 2017. The largest decline was seen in Consumer Installation licences due to the non-renewal of 41 sites owned by one licence holder.

		2018												2017 YTD	Total Growth %	
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			YTD
Importing Wholesale		0	5	7	6	3	1	1	5	1	3	1	1	34	34	0%
	Export	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
Wholesale		0	0	1	5	3	0	1	1	0	2	0	0	13	14	-7%
Retail	Petrol Filling Stations	4	0	8	8	19	7	3	9	0	7	8	5	78	70	11%
	Others	17	41	46	58	40	33	44	77	39	37	24	17	473	473	0%
Consumer Installation		0	3	6	28	54	4	6	7	10	9	0	1	128	232	-45%
Bulk Transportation Carrier	Road Tanker Wagons	10	22	17	15	16	24	16	11	12	16	16	5	180	189	-5%
	Trucks	43	37	28	18	30	27	27	24	27	23	27	12	323	394	-18%
	Fuel Barges	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0%
	Boats	9	2	5	3	3	7	6	6	2	2	4	0	49	55	-11%
Total		83	110	118	141	169	103	104	140	91	99	80	41	1279	1462	-13%

Table Showing Licences Issued in 2018

In addition to the 1279 licences issued in 2018, there are an additional 165 multiple year licences issued by the Division in various years, of which were still valid in 2018.

Multiple years as of 31 Dec 2019

Category of Licences		Multiple Years up to 31 Dec 2019
Importing Wholesale		7
	Export	1
Wholesale		2
Retail	Petrol Filling Stations	46
	Others	15
Consumer Installation		58
Bulk Transportation Carrier		
		36
Total		165

The Division recorded a 12% increase in the number of sites inspected from 749 in 2017 to 837 in 2018.

Type of Inspection	2018														Growth
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	YTD	2017 YTD	
Petrol Filling Stations	17	10	4	24	55	6	8	1	1	11	7	2	146	151	-3%
Others	49	41	8	55	36	2	79	5	0	3	23	19	320	171	87%
Consumer Installations	4	1	2	21	9	0	8	0	2	8	29	2	86	59	46%
Road Tanker Wagons	14	9	7	17	22	17	4	1	8	0	3	3	105	108	-3%
Trucks/ Canters	26	28	12	7	12	19	14	7	8	13	7	7	160	248	-35%
Barges	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
Boats	0	1	0	1	11	0	0	0	0	1	0	1	15	12	25%
Imports	1	0	0	0	0	1	0	0	0	0	0	0	2	0	200%
Wholesale	1	1	0	0	0	1	0	0	0	0	0	0	3	0	300%
Total	112	91	33	125	145	46	113	14	19	36	69	34	837	749	12%

3.0 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.

Marking Officers supported a total of 354 bulk marking operations in 2018 compared to 329 for 2017.

The Authentix representative provided the following oversight functions:

- Verifying marker concentrate received by GEA
- Supervision of the decanting of marker concentrate from drums
- Reconciling marker concentrates
- Auditing marker concentrates/ marking operations
- Assistance in repairing/maintaining the injectors
- Training of new staff - bulk marking and daily marking

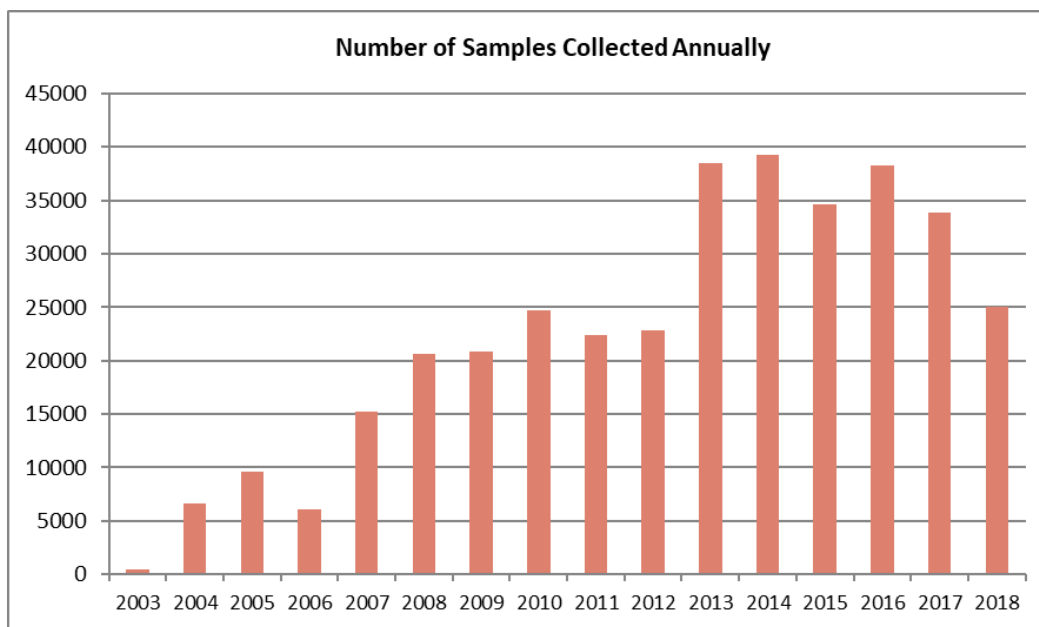
- Training of staff to repair and service the bulk marking injectors

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.



3.1 Sample Analysis

The number of fuel samples collected/logged each year:



While samples collection has dropped in 2018 from the preceding year, samples collected in the fields have remained relatively high compared to the pre-2013 levels. Samples are effectively being collected at a rate of about 2:1 i.e. two samples to every site visited which is consistent for the previous years.

Given the decrease in sites visited for the year 2018 it is of no surprise that samples collected declined due to the correlative nature of the two variables. For 2018 this decrease has been recorded at 26% from the previous year. Again, the decrease was more pronounced for Linden (33%) compared to the other areas combined (14%). The table below shows the breakdown of analyses by Region. 27,388 analyses were completed in 2018 compared to 36,494 analyses done in 2017.



Region	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
1	157	20	55	59	273	-	20	41	2	3	0
2	613	1,173	1,920	1,408	1,673	2,250	1,894	1,261	2,663	1,502	1,569
3	3,386	3,927	3,741	2,419	3,479	4,167	2,727	1,926	2,582	2,524	2,112
4	2,212	1,848	4,420	3,289	4,595	5,291	5,189	3,866	6,112	6,011	5,672
5	354	420	1,160	827	1,479	1,274	710	500	1,134	870	920
6	618	376	627	829	931	1,167	919	659	1,673	1,078	850
7	561	170	286	140	295	354	377	1,982	2,279	2,369	1,527
8	95	76	130	12	135	25	62	72	77	36	89
9	-	5	93	1	64	-	53	94	122	93	68
10	12,457	12,236	15,839	15,858	12,770	24,671	30,452	24,505	26,517	22,008	14,581
Total	20,453	20,251	28,271	24,842	25,694	39,199	42,403	34,906	43,161	36,494	27,388

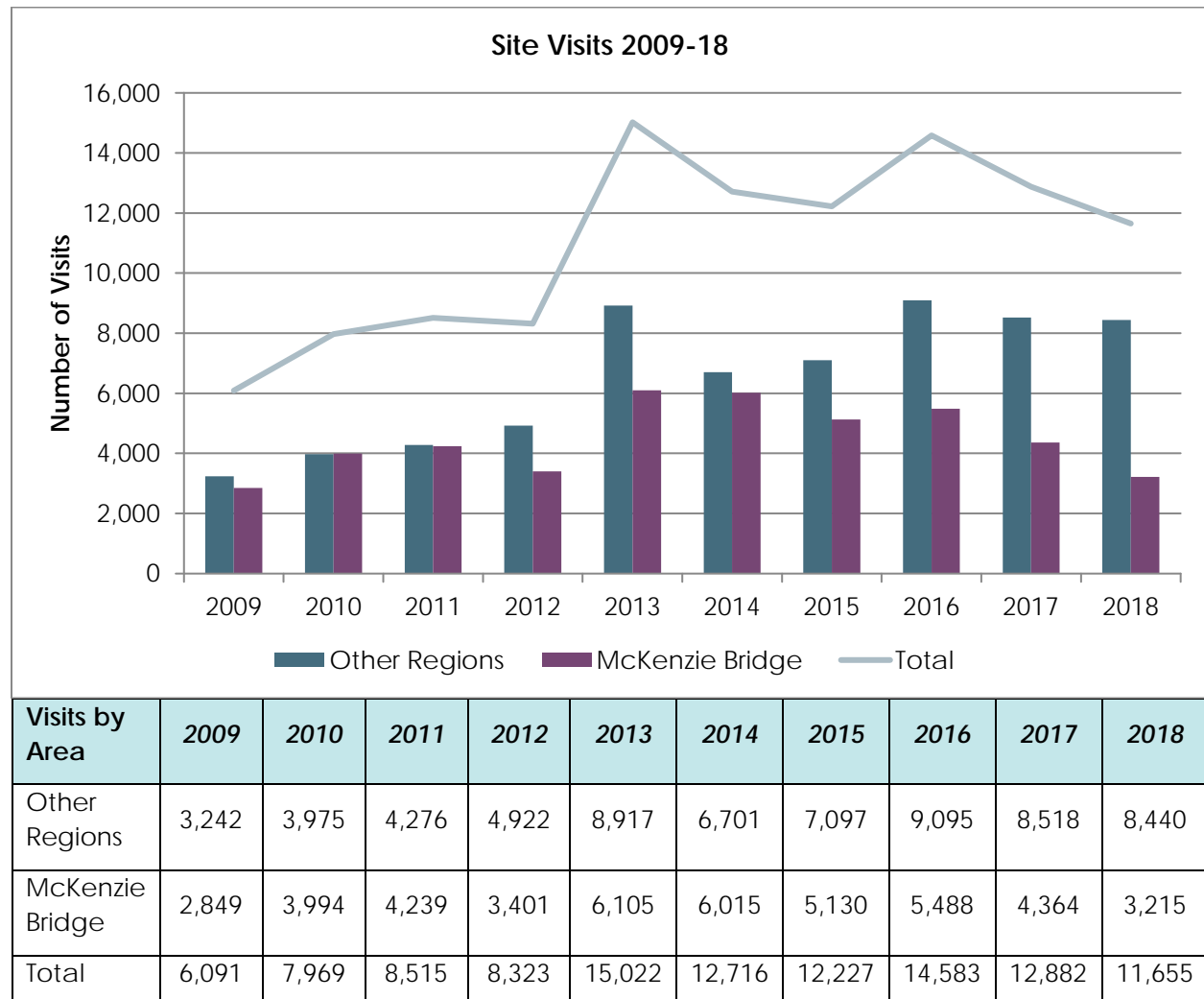
Number of Quantitative Analyses by Region

A rigorous quantitative testing exercise continued in 2017 for samples taken across all regions despite a fall from the previous year by 15%. Noted declines occurred in Regions 2, 5, 6 and 10 over the same period. However, testing was generally similar over the years in Regions 3, 4 and 7. There were some issues with laboratory

supplies that would have affected the ability to up the count in 2017. Again, since 2013 quantitative testing has been above the 30,000 mark.

3.2 Analysis by Site

11,655 site visits were recorded during 2018. Summary of site visits from 2009 to 2018 is illustrated below:



For the year 2018 the Inspection Unit recorded a decline in sites visits from the previous year by about 10%. As can be observed from the data, much of this drop occurred at the Linden checkpoint (26%) as compared to the other areas combined (1%). While a number of factors have affected the final output, it is



apparent that the two transportation accidents suffered by several staff during the course of the year coupled with vehicles seemingly frequently malfunctioning in the fields have contributed somewhat to the end result. For the Linden checkpoint to have slowed so tremendously as well means that mining, logging and other significant consumers of fuel in the interior of the country have limited their activities.

There were irregular reports in 2018 of test columns for conducting quantitative testing running low. However, this is not the only factor that affected the final result. Again, because of the correlative effect of the site visits to sample collection naturally this would affect the ability of the laboratory to conduct any number of analyses.

The unit has conducted special operations in the interior inclusive of Lethem and Mahdia. Additionally, operations were conducted at Tumatumari in Region 8 and Aranka and Arangoy in Region 7. More emphasis was placed on monitoring the Karrau – Blue Mountain trail particularly since the expectation is that it would be linked back to the Buckhall – Aranka roadway.

Of the 11,655 total site visits conducted during the year, 1,874 sites were sampled at least once.

26 (1%) of the sites sampled at least once were found with *significant dilution (defined as more than 50%)* in at least one tank. The percentage of sites found with

significant dilution in at least one tank has progressively decreased from 34% in 2006 to 1% in 2018. The incidence of fuel smuggling continues to be low as the number of sites found with significant dilution in at least one tank remains relatively low.



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
No. of Sites samples at least once	763	656	566	592	1,202	1,313	1,179	1,648	2,146	2,200	1,446	2,253	1,852	1,874
No. of Sites found with significant dilution in at least 1 tank	240	220	128	57	73	45	21	13	35	51	37	27	29	26
% of Sites found with significant dilution in at least 1 tank	31%	34%	23%	10%	6%	3%	2%	1%	2%	2%	3%	1%	2%	1%

3.3 Analysis of Test Results

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 significant dilution reported as 2%, indicative of sustained reduction in the percentage of 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. With the analysis of 64% more samples in 2013, 1% of the samples analysed were found to be significantly diluted. Significant levels of adulteration were detected in only 2% of the samples analysed in 2014, 3% in 2015, 1% in 2016, 2% in 2017 and 1% in 2018.

Test Results (Quantitative Analyses)	03 Dec 2003 (Assessment Phase)		27 Jan 2004 (Post- Assessment)		2004		2005		2006		2007		2008	
0 – 50%	42	12%	28	6%	196	6%	855	9%	764	15%	1,169	8%	593	3%
51 – 70%	59	17%	32	7%	275	9%	1,234	14%	223	4%	343	2%	254	1%
71 – 90%	67	19%	89	19%	475	16%	2,576	28%	928	19%	8,204	55%	8,593	42%
91% & Over	188	53%	329	69%	2,110	69%	4,431	49%	3,091	62%	5,171	35%	11,013	54%
Total	356	100%	478	100%	3,056	100%	9,096	100%	5,006	100%	14,887	100%	20,453	100%
Test Results (Quantitative Analyses)	2009		2010		2011		2012		2013		2014		2015	
0 – 50%	701	3%	511	2%	167	1%	259	1%	303	1%	186	<1%	141	<1%
51 – 70%	767	4%	372	2%	164	1%	128	1%	137	1%	46	<1%	74	<1%
71 – 90%	12,654	62%	10,834	45%	10,990	49%	10,491	49%	29,734	79%	30,440	76%	25,003	76%
91% & Over	6,129	30%	12,612	52%	11,171	49%	11,867	49%	7,252	19%	9,270	23%	7,675	23%
Total	20,251	100%	24,329	100%	22,492	100%	22,745	100%	37,426	100%	39,942	100%	32,893	100%

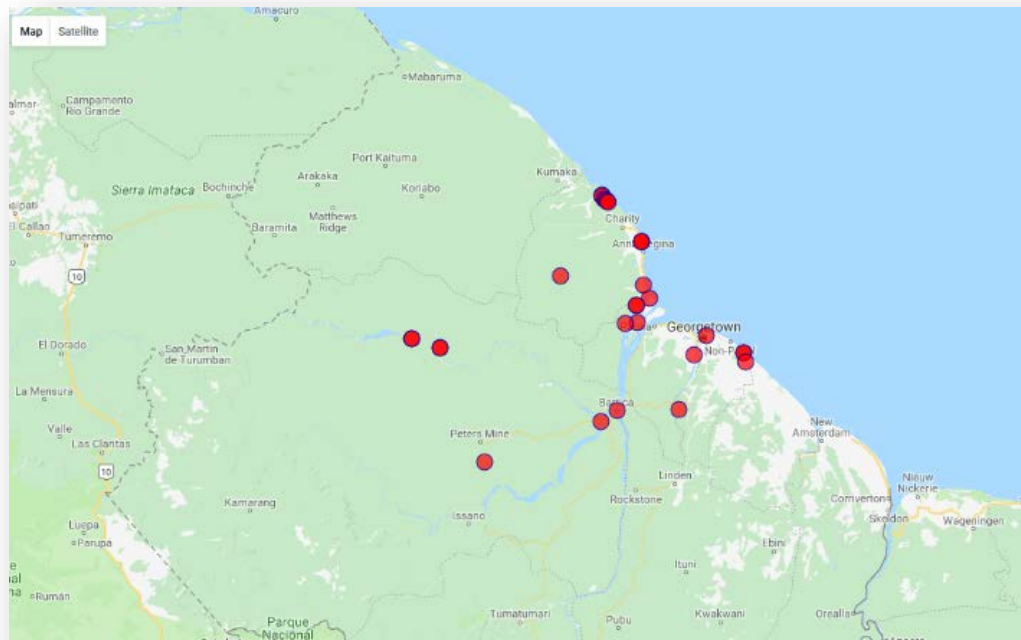
Test Results (Quantitative Analyses)	2016		2017		2018								
0 – 50%	357	<1%	254	<1%	272	1%							
51 – 70%	73	<1%	52	<1%	29	<1%							
71 – 90%	30,322	78%	19,332	58%	15,219	62%							
91% & Over	8,141	21%	13,807	41%	8,872	36%							
Total	38,893	100%	33,445	100%	24,392	100%							

It is apparent that the bulk of samples being tested using this methodology are reading between the 71% - 90% range. Samples reading below this range are less than 2% combined. There is obviously something affecting the marking issues of fuel being tested and will be furthered investigated.

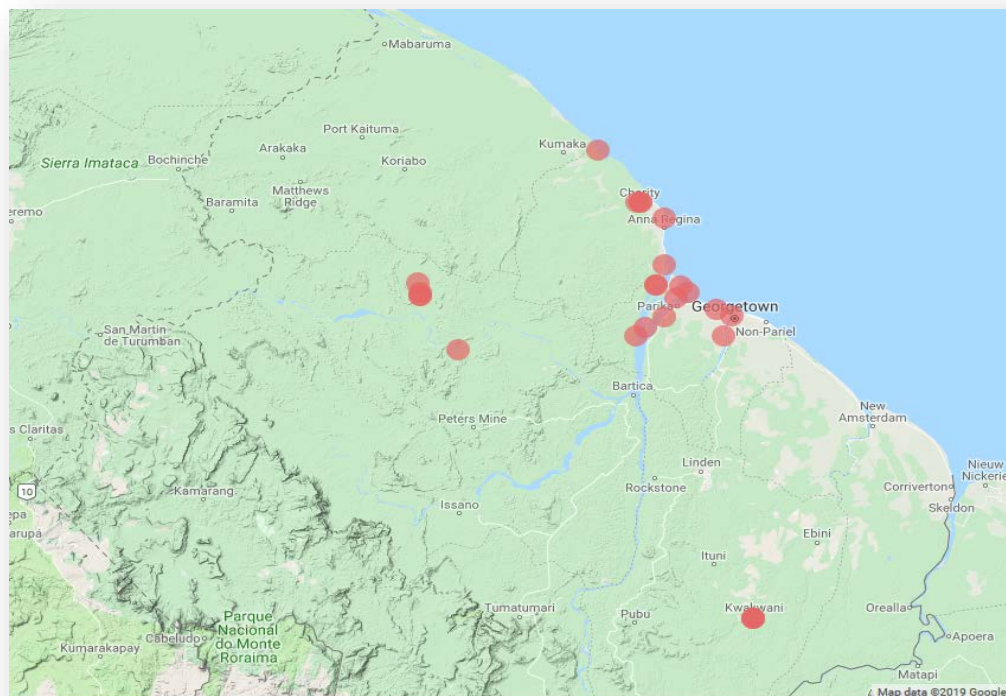
3.4 Incidents of Illegal Fuel

The Division has consistently recorded incidents of fuel smuggling above 20 over the past three years. These incidents in 2018 have general been recorded in and around the Essequibo Coast and Pomeroon area, up the Cuyuni as far as Aranka, and even in Essequibo River. It can be said these are the traditional areas where fuel smuggling has been noted.

Annual Incidents Recorded by Month 2009 – 2018													
Year	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	6	2	3	3	5	3	6	3	2	2	3	10	48
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
2013	1	2	3	3	7	2	3	2	6	0	3	4	35
2014	2	2	1	3	2	1	0	3	2	3	11	21	51
2015	14	1	0	2	1	4	5	1	2	2	1	4	37
2016	3	2	2	2	3	3	4	2	5	1	0	0	27
2017	0	1	4	7	3	3	0	5	0	5	0	1	29
2018	2	4	1	0	1	3	5	3	1	5	1	0	26



Locations of Incidents Recorded in 2017



Locations of Incidents Recorded in 2018

Joint Operations

Operations conducted with member of the Task Force have remained relatively consistent over that past three years. While the GDF did not carry out any aerial reconnaissance for 2018, deployments were done on the floating base in the Pomeroon River. The GPF assisted in the execution of several operations especially into various interior locations. The GRA continued to provide support in monitoring the waterways of the Demerara county.



Month	2018				2017				2016			
	GPF	GDF	GRA	Total	GPF	GDF	GRA	Total	GPF	GDF	GRA	Total
Jan	4	-	2	6	1	1	1	3	2	2	2	6
Feb	2	1	-	3	2	1	-	3	1	2	3	6
Mar	3	1	-	4	4	2	-	6	1	1	-	2
Apr	3	-	2	5	3	1	1	5	0	0	0	0
May	1	-	1	2	-	2	-	2	0	1	3	4
Jun	3	1	-	4	2	1	-	3	3	0	1	4
Jul	-	-	-	-	2	-	1	3	2	1	-	3
Aug	3	-	1	4	3	-	-	3	2	2	1	5
Sep	2	-	1	3	1	-	-	1	1	1	1	3
Oct	-	-	2	2	1	-	2	3	1	-	-	1
Nov	-	-	-	-	2	-	2	4	1	-	-	1
Dec	2	-	-	2	-	-	-	-	-	-	-	0
Total	23	3	9	35	21	8	7	36	14	10	11	35

Key:

GPF - Guyana Police Force
GRA - Guyana Revenue Authority

GDF - Guyana Defence Force

3.5 Quantity of Illegal Fuel Seized

Total Fuel Seized Annually (UK GAL) 2005 – 2018													
2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
3,011	8,001	21,793	33,560	33,443	21,242	10,273	6,004	2,931	3,785	6,200	19,721	11,355	13,929

The total quantity of fuel seized during any given year continues to be above the 10,000-gallon mark for the past three years.

3.6 Volume Analysis

An additional metric to evaluate the performance of the Fuel Marking programme is a measure of gasoline, diesel and kerosene consumption (except

TOTAL CONSUMPTION - OIL COMPANIES (BBLs)					
January - December		2016	2017	2018	% change
	Mogas	1,327,595	1,340,712	1,349,687	0.67%
	Gasoil	2,013,333	2,044,089	2,175,671	6.44%
	Kero	92,048	91,009	83,581	-8.16%
	Avjet	153,309	164,564	154,850	-5.90%
	Fuel oil	84,106	81,320	112,299	38.09%
	LPG	210,763	206,774	217,898	5.38%
	Avgas	1,269	1,412	2,438	72.66%
	Total	3,882,423	3,929,880	4,096,423	4.24%
	Bpd	10,608	10,767	11,223	4.24%

for large duty-free consumers). For the oil companies, 4,096,423 barrels of petroleum-based products were sold in 2018 with an average of 11,223 barrels per day. This represents a 4.24% increase when compared to 2017⁴. There were increases in the consumption of gasoline, diesel, fuel oil, cooking gas and aviation gasoline while consumption of kerosene and jet fuel declined for the year.

The increase in gasoline consumption for 2018 can be attributed to an increase in motor vehicle registration while the decline in kerosene consumption suggests less use of kerosene as a fuel for cooking and there were an increase in LPG consumption and a decrease in kerosene consumption, suggesting greater use of cooking gas over kerosene.

⁴ Gasoil and Fuel oil purchased locally by GPL from the oil companies were discounted to avoid double counting.

The increase in diesel volumes can be attributed to improvements in the rice, forestry and manufacturing industries and LFO consumption by GPL. It may also presumably result from decreased availability of smuggled fuel due to the success of the monitoring and enforcement activities of the Fuel Marking Programme.

3.7 Prosecutions

For the year 2018, four (4) prosecutions resulted in 2 convictions and 2 dismissals.

Compensation was accepted from three (3) individuals under *Section 33A Guyana Energy Agency Act 1997* as amended by *Section 8 Guyana Energy Agency (Amendment) Act 2011*.

4.0 Administration and Human Resource Division

The Agency commenced the year with a staff complement of ninety-six (96) employees and ended the year with one hundred and four (104) employees.

The following positions were filled during the year:

- 2 Accounts Clerks
- 3 Inspectors
- 4 Marking Officers
- Inventory Manager
- Legal Officer
- Office Assistant
- Electrician
- Investigator
- Office Clerk
- Senior Investigator
- Driver/Office Assistant
- Energy Engineer
- Senior Energy Engineer

Resignations:

- Office Clerk
- 2 Accounts Clerks
- Head, Marking Section
- 2 Marking Officers
- Head, Finance
- Driver/Office Assistant

Dismissals:

- Senior Marking Officer
- Marking Officer

Passing:

- Inspector

4.1 Professional Development

		Actual Training for 2018	Target for 2018
Organize and install suitable capacity building and professional development programmes to provide employees with requisite knowledge and skills.	Number of training programmes	51	20
	Number of Officers trained	409	100

Training Summary

	Dates	Facilitator	Aim	Participants	Cost
1	Dec 2-Jan 27	Nations University	Investigation and Intelligence gathering	Keith Williams, Roshawn Heywood, Doneeta Ramlakhan, Shankar Ram, Rolin Wilson, Shamica Isaacs, Doron Julien, Dwayne Edwards, John Rawlins, Nicholae Leacock, Adrian Webster	\$279,918
2	Jan	In-house	Refresher course on statement writing, SoPs (role playing activities).	Keith Williams, Roshawn Heywood, Doneeta Ramlakhan, Shankar Ram, Rolin Wilson, Shamica Isaacs, Doron Julien, Dwayne Edwards, John Rawlins, Nicholae Leacock, Adrian Webster	Free
3	February 19-22, 2018	Regional Exclusive Economic Zone Course	Protecting the exclusive Economic Zone of Guyana e.g Security, Customs, Environmental issues.	Ms. Thandiwe Benn & Deally Arjune	Free

4	March 16 & 23, 2018	Computer World	To understand the barriers to communication and to improve the use of effective communication skills in and organization and dealing with customers.	Nelta Dainty, Farida Mahatoo, Shankar Ram, Dhanomatie Shyamraj, Cindy Williams, Joy Duke, Jonquil Croker, Leon De Souza, Coleen Fletcher-Perry, Diana Mahadeo, Abigail Bijader, Nikita Shung, Dolwin Khan, Monica King, Yota Burgess, Earicka Richards, Ryhan Stephens, Everard Rampersad, Irene Campbell, Gaitri Khemraj, Geneva Cumbermack, Rehana Alli, Lisa Nassy, Dhanmattie Lall, Dale London, Steve Merai, Alecia Horne, Collette Nurse, Frida Rampersaud, Simeon Butcher, Roshawn Heywood, Keshawn Fraser, Deonarine Punwasi	448,000
5	March 19 & 20, 2018	Computer World	For staff to be capable of rendering assistance in CPR and First Aid. E.g Incident management, Resuscitation, Management of the Unconscious Casualty, Control of Bleeding, etc. (First Aid/CPR)	Shankar Ram, Coleen Fletcher-Perry, Irene Campbell, Yota Burgess, Earicka Richards, Doneeta Ramlakhan, Devica Sukhnandan, Lisa Nassy-Marks, Amanda Singh-Trim, Gaitri Khemraj, Yoglata Ruplal, Nikita Drakes, Nelta Dainty, Nikita Shung, Cindy Williams, Diana Mahadeo, Roshawn Heywood, Keshawn Fraser, Geneva Cumbermack, Deonarine Punwasi, Simeon Butcher, Ryhan Stephens, Shanamay Daniels-King, Tracy Brammer, Maurice Cave, Kamala Chatterpaul, Stanley Paul, Winston Setal, Taiwo Wilson-Williams, Steve Merai, Julian Assanah, Dwayne Edwards, Alecia Horne	735,000

6	March 9,16,23, 2018	Centre for Local Business Development	Staff were given insight to Health, Safety, Security & Environment, Introduction to Procurement for Local Suppliers, Introduction to the Offshore Oil & Gas Industry.	Ms. Thandiwe Benn and Ms. Shevon Wood	Free
7	March 2018	Computer World	Office Applications	Cindy Williams,Nikita Shung,Yota Burgess,Rowena Wray,Davindra Moteeran,Erika Richards,Doneeta Ramlakan and 38 others	1,870,000
8	March 10, 2018	Shalom Driving School	Defensive Driving and Mechanical Trouble Shooting (PHASE 1) Drivers learn the skill of driving correctly to prevent accidents and how to identify and fix basic mechanical issues with the vehicles	Robert Nazir, Trevon Newton, Ramkarran Kissoon, Galburn Williams, Maurice Yearwood, Rawle Sam	100,000
9	April 9, 2018	Institute of Private Enterprise Development	Project Management (Foundation)	Geneva Cumbermack, Devica Sukhnandan, Lisa Marks, Nelta Dainty	284,880
10	April 10, 2018	Computer World	Sage Financial Software	Yasoda Matabadal, Devica Sukhnandan, Tracy Brammer, Ryhan Stephens, Rehanna Alli	120,000
11	April 23-25, 2018	Civil Defence Commission	Incident Command Systems. Build capacity among key stakeholders and establish a standardized approach to command, control and coordination of emergency response.	Thandaiwe Benn	Free

12	April 26-28, 2018	CDC-(Splashmins Resort)	Oil Spill Response- to prepare stakeholders to perform on scene emergency response functions in event of an oil spill.	Abigail Bijader, Dhanomatie Shyamraj, Simeon Butcher, Doron Julien, Devon Brummell	Free
13	May 28-29, 2018	Ministry of the Presidency, training Division	Occupational Health & Safety- to be able to identify hazards in the workplace.	Coleen Fletcher, Steve Merai	Free
14	May 2-4, 2018	CDC-Marriot Hotel	Incidents command system and oil spill Management	Arjune Deally, Thandiwe Benn	Free
15	May 7-14, 2018	Barbados	Certified Energy Manager	Kenny Samaroo, Brian Constantine	Partly Funded by Barbados Renewable Energy Association (BREAA) & GEA in the sum of USD840.
16	June	Computer World	Computer training continued for staff until November 2018		
17	June 25-26	IDB	Risk Management	Shevon Wood, Kenny Samaroo, Leon DeSouza, Brian Constantine, Gayle Primo-Best, Yasoda Matabadal, Ryhan Stephens, Geneva Cumbermack, Seema Greene	Free
18	June 21	Ministry of Finance	Budget Sensitization Sessions	Mahender Sharma, Gayle Primo-Best, Yasoda Matabadal	Free
19	June 26	Ministry of Finance	Budget Sensitization Sessions	Gayle Primo-Best, Yasoda Matabadal, Seema Greene	Free
20	July 30-31	GEA	Occupational Safety & Health	Cindy Williams, Nikita Shung, Narisa Samuels, Crystal Bascom, Janella Charles, Rehana Ali, Winston Setal, Alecia Horne, Irene Campbell, Nelta Dainty, Lisa Massy	60,460

21	July 23-27	GNBS	ISO Lab Standards	John Rawlins	Free
22	August 7-23, 2018	IPED	Emotional Intelligence	Stieve Rafeek, Rehana Alli, Diana Maxwell, Rowena Wilson- Wray, Mohanram Persaud	\$175,000
23	August 7-9, 2018	PSM	Customer Care	Kamala Chatterpaul, Adrian Webster	Free
24	August 3-September 7, 2018	Nations University	Sentence Construction & Grammar	Cindy Williams, Doron Julien, Nikita Shung, Keshawn Fraser, Mohanram Persaud, John Rawlins, Shamica Isaacs, Devon Brummell, Simeon Butcher	\$254,000
25	August 25, 2018	Guyana Fire Service	Fire Prevention Strategies	Aliza Pooran, Kiefer Robin, Greganne Garnett, Doneeta Ramlakhan, Doron Julien, Dwayne Edwards, Quasen Nedd, John Rawlins, Nikita Shung, Cindy Williams, Narisa Samuels, Crystal Bascom, shareefa Munsammy, Amanda Singh, Christins Seepersaud, Richard Henry, Royale Melville, Lisa Marks	\$85,000
26	August 2018	Harvard Extension School	Conflict Resolution, Organizational Behaviour	Leon DeSouza, Shevon Wood, Thandiwe Benn	USD10,000
27	September 1- November 10, 2018	Nations University	Foreign Language	Quasen Nedd, Devon Brummel, Simeon Butcher, Doneeta Ramlakhan, Rolin Wilson, Doron Julien	334,000
28	September 4-6, 2018	Department of Public Service Training Division	Personnel Practices and Policies	Dhanmattie Lall	Free
29	September 10-14, 2018	MATPAL Marine Institute(Critchlow Labour College)	Basic Safety Training (STCW '95) Course	Wayne Nurse	150,000
30	September 8- November 10, 2018	Nations University	Effective Investigation	Cindy Williams, Nikita Shung, Paul Fraser, Roshawn Heywood, Simeon Butcher, Keshawn Fraser.	308,000

31	September 13, 2018	In-House	Inspectors Training Session	Doron Julien, Keith Williams, Adrian Webster, Nikita Shung, Rolin Wilson, Aliza Imdad, Gaitri Khemraj, Quasen Nedd, John Rawlins, Cindy Williams, Devon Brummell, Greganne Garnett, Kelfer Robin, Dwayne Edwards, Earika Richards, Paul Fraser, Simeon Butcher, Ramish Amyan, Rashawn Heywood, Nicholae Leacock	In-House
32	September 17-21, 2018	Department of Public Service Training Division	ICT Training Course	Abigail Bijader	Free
33	September 18 & 19, 2018	Nations University	Workplace Behaviour	Gaitri Khemraj, Yoglata Ruplal, Crystal Bascom, Nikita Drakes, Rowena Wray, Amanda Trim, Dale London, Royale Melville, Diana Mofette, Namesh Persaud, Maurice Cave, Nelta Dainty, Farida Rampersaud, Steve Merai, Aleza Imdad, Roshawn Heywood, Nikita Shung, Shereefa Munsammy, Ryhan Stephens, Shanamay King, Alecia Horne, Jonquil Croker, Yota Burgess, Diana Maxwell, Narisa Samuels, Geneva Cumbermack, Tracy Brammer, Irene Campbell, Lisa Marks, Devica Sukhnandan, Deochand Boodhoo, Rehana Ali, Kendra Drakes, Kalama Chatterpaul, Cindy Williams, Keshun Fraser	153,000
34	September 18 & 19, 2018	Department of Public Service Training Division	Principles of Professional Secretarial Practices Module 11	Dhanmattie Lall	Free
35	September 20, 2018	New Guyana School	PMP	Brian Constantine, Kenny Samaroo	918,000
36	September 26-27, 2018	Department of Public Service Training Division	Office Assistants Seminar	Royale Melville	Free

37	September 26, 2018	Guyana Lands and Survey Commission	National Spatial Data Infrastructure	Kenny Samaroo	Free
38	October 10, 2018	Computer World Limited	Advanced MicroComputer Studies	Nelta Dinaty, Namesh Persaud, Coleen Fletcher, Nikita Drakes, Jonquil Croker, Deonarine Punwasi, Narisa Samuels, Devon Brummel, Kiefer Robin	405,000
39	October 10, 2018	Computer World Limited	Graphic Design	Yoglata Ruplal, Everard Rampersaud, Ron Bynoe, Abigail Bijader, Adrian Bascom, John Rawlins, Cindy Williams	315,000
40	October 10 & 11, 2018	Texila American University	Anti-Money Laundering for Compliance Professionals	Yasoda Matabadal, Ryhan Stephens, Valmiki Ramtahal	USD1,050
41	October 10 & 11, 2018	Nations University	Negotiation & Conflict Management	Gaitri Khemraj, Yoglata Ruplal, Dale London, Angela Trotman, Namesh Persaud, Maurice Cave, Nelta Dainty, Farida mahatoo, Mohanram Persaud, Steve Merai, Rolin wilson, Shereefa Munsammy, Shanamay King, Alecia Horne, Jonquil Croker, Diana Maxwell, Crystal Perreira, Geneva Cumbermack, Tracy Brammer, Irene Campbell, Devica Sukhnandan, Deochand Boodhoo, Rehana Ali, Kendra Drakes, Udhan Budhram, Keshun Fraser	138,000
42	October 11, 2018	Institute of Private Enterprise	(ICM) International Business Communication	Diana Mahadeo, Dhanmattie Lall	160,860
43	October 12, 2018	Texila American University	UWI-ALJGSB Fundamentals of Suspicious Activities/Transaction reporting	Yasoda Matabadal, Ryhan Stephens, Valmiki Ramtahal	USD450
44	October 17 & 18, 2018	Texila American University	Introduction to Supply Chain and Logistics Management	Seema Greene, Geneva Cumbermack	USD700
45	October 24 & 25, 2018	GEA Lab	(Authentix) Operation and Troubleshooting of HPLC	Yota Burgess, John Rawlins, Cindy Williams	Free

46	October 29, 2018	Inter-American Development Bank	Overview of IDB Procurement Process	Mahender Sharma, Seema Greene, Kenny Samaroo, Ryhan Stephens, Brian Constantine, Valmiki Ramtahal, Leon DeSouza	Free
47	November 8, 2018	Guyana Fire Service	Guyana Fire Service Stakeholder Consultation	Shanamay Daniels, Thandiwe Benn	Free
48	November 8 & 9, 2018	Nations University	Sexual Harassment, office etiquette, work life balance	Gaitri Khemraj, Yoglata Ruplal, Yota Burgess, Namesh Persaud, Wayne Nurse, Nelta Dainty, Farida Mahatoo, Mohanram Persaud, Steve Merai, Galburn Williams, Shereefa Munsammy, Shanamay King, Alecia Horne, Narisa Samuels, Diana Maxwell, Kamala Chatterpaul, Amanda Singh, Stieve Rafeek, Irene Campbell, Devica Sukhnandan, Julien Assanah, Lisa Nassy, Kendra Drakes, Udhan Budhram, Keshun Fraser, Dhanmattie lall	153,000
49	November 13-15, 2018	Ministry of Public Infrastructure	Aviation Fuel Handling and Quality Assurance Training	Deochand Boodhoo, Dale London, Abigail Bijader, Dhonomatie Shyamraj	7800USD
50	November 14 & 15, 2018	ExxonMobil-Arthur Chung Convention Centre	Metering and Measuring Workshop	Mahender Sharma, Shanamay Daniels, Thandiwe Benn	Free

4.2 Administration and Infrastructural Enhancement

The Division completed **188** procurement transactions under the Current & Capital Programme. These included civil works (washrooms, steps, external) procurement of parts for vehicles, photocopier, etc).

Under the 2018 capital programme, GEA was allocated **\$500M** to implement RE and EE projects as follows:

- LED Lights & Sensors at 54 buildings but actual installations were done on more than 70 buildings.

- Grid Connected Solar PV Systems at 89 buildings, 120kWp system with energy storage at Parliament building.
- Instruments for Engineers use

The GEA also commenced the design phase of its proposed extension to the West of its compound. See proposed design below:





Paint and install rubber type material onto step

Install textured flooring onto existing floor



Replace damaged boards, wash and paint building

5.0 Finance Division

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.

Appendix: Legislation, Mandate and Overview of the Divisions

Legislation

The GEA, a body corporate, was established in 1997 by the **Guyana Energy Agency Act 1997 (Act No. 31 of 1997)**. 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 2014,
- 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).

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-
 - o importation of petroleum or petroleum products;
 - o bulk transportation of petroleum or petroleum products;
 - o storage of petroleum or petroleum products;
 - o wholesale of petroleum or petroleum products;
 - o retail of petroleum or petroleum products;
 - o storage and own-use of petroleum or petroleum products.
- to suspend, cancel, cease licences in accordance with the regulations made under the **Guyana Energy Agency Act 1997** as amended by the **Guyana Energy Agency (Amendment) Acts 2004, 2005 and 2011**;
- 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 Gazette;
- 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.



ORGANISATIONAL STRUCTURE FOR THE GUYANA ENERGY AGENCY (2018)

