

THE BARBADOS ECONOMIC REPORT
ENERGY CHAPTER

OIL AND GAS EXPLORATION

ONSHORE

Three (3) new wells were drilled by the Barbados National Oil Company Limited during 2005. The product derived from these wells, in addition to the existing stock brought the reserves to their current levels of 3.011 million barrels (bbls) of crude oil and 6,192,218 million cubic feet (mcf) of gas. The new wells contributed approximately 7,146 barrels (bbls) of oil and 7,075 million cubic feet (mcf) of gas, to total production of Barbados National Oil Company Limited (BNOCL).

PRODUCTION

During the period 2004-2005 the production of crude oil decreased by approximately 8 percent. It decreased from 377,655 barrels (bbls) to 348,728 barrels in 2005. This decrease was due to the late drilling of wells to help complement the existing ones. Natural Gas production increased by 18 per cent to 847,416 mcf in 2005, compared with 718,020 mcf in 2004. There was no liquefied Petroleum Gas (LPG) production during 2005 since the LPG plant was taken out of commission in September 2003 and early in 2004 the decision was made not to extract condensate from the Gas in order to boost gas sales.

OIL AND GAS SALES AND CONSUMPTION

Oil sales decreased by 10 per cent in 2005 from 380,165 bbls to 342,164 bbls, while gas sales rose by 5.7 per cent to 504,205 mcf in 2005. Total sales by volume in the National Petroleum Corporation (NPC) inventory increased by 20 per cent, from 9,902,099 mcf in 2004 to 11,918,416 mcf in 2005. This was, in turn, responsible for the rise in the value of sales by 18 per cent to 12,276,374 in 2005. Slight increases were seen in residential and commercial sectors consumption, these

can be attributed to an increase in the average use by the various consumers along with an increase in the category of Special Industrial Gas. The expansion programme of the NPC continued by increasing its network of mains by 3.08 miles and its connections by 5 per cent to 21,091 customers.

ELECTRICITY

Sales for 2005 increased by 6.5 per cent to \$884.7 compared to \$830.7 million in 2004. This can be attributed to an increase in sales to all categories of customers. The largest category of users continues to be the Domestic Sector, accounting for 33 per cent of total sales or \$293.7 million. The Barbados Light & Power Company Limited (BL&PL) expanded its services by investing \$40.4 million to upgrade its capital infrastructure and to accommodate forecasted demand.

REFINED PETROLEUM PRODUCTS

There was an overall increase in the demand for refined petroleum products during 2005 when compared to 2004. The consumption of gasoline rose by 1 per cent to 819,505 bbls from 811,700 bbls in 2004 while diesel consumption declined by 5 per cent to 640,488 bbls from 673,018 bbls in the previous year. Fuel oil, in contrast with the previous year increased some 23 per cent to 1,338,711 bbls. Kerosene sales declined 20 per cent to 12,999 bbls from 16,216 bbls in 2004. In response to price increase on the international market, the domestic fuel prices were increased in April 2005. The local price of gasoline was increased from \$1.65 to \$2.10 per litre; kerosene was raised from \$0.83 to \$1.10 per litre and the price of diesel from \$1.23 to \$1.35 per litre.

RENEWABLE ENERGY

WIND ENERGY

Barbados has designated three (3) areas as wind sites. These are found at Lamberts East, Upper Salmonds and Bissex Hill.

These sites have wind speeds over 7.5 metres per second annually. Lambert's East has 8.5 metres per second wind speeds.

The premier site at Lamberts East is being evaluated by the BL&PL for a 10MW wind farm. This project has passed technical and financial viability assessments and is available to the BL&PL through a proposed lease with the owner Barbados Farms Limited. This project will generate 3.2 Gwh annually if developed, at an investment cost of over twenty-four (24) million Bds dollars.

The Barbados Light & Power Company believes that up to ten percent (10%) of the minimum average demand (90MW) is the prudent limit of the electricity grid network capacity to absorb wind energy without creating instability.

This grid has over two hundred and thirty (230MW) mega watts of installed capacity and produced eight hundred and thirty-one (831 Gwh) of electricity in the last twelve (12) months.

SOLAR ENERGY

The total number of solar water heaters is now estimated at over thirty eight thousand (38,000) units. This is the second largest number per households in the world and is over five (5) percent of the Barbadian national energy budget and saves consumers over twenty-two (\$22) million Bds annually. The estimated market is considered to be seven (\$7) million Bds locally but there is excess production among manufacturers. The local factories have the capacity to produce over \$14,000,000 worth of systems and therefore exports have to be a critical component of the Solar Energy Policy. To this end the Barbados Manufacturing Association (BMA) is working with the Ministry of Energy and Public Utilities to develop and export this strategy.

There has been a continued thrust to leverage greater exports throughout the region and globally.

Over one hundred and fifty (\$150,000) thousand dollars Bds was spent in exploring the exporting of solar water heater intellectual property through a joint venture in Nigeria. Extensive negotiations have led to a local company reaching an agreement that could lead to the production of over ten thousand (10,000) water heaters per year through a Barbadian managed company in Nigeria with royalties repatriated to Barbados. This is over five (5) times the water heaters being produced in Barbados, annually.

As expected, there is intellectual property exported via ventures in St. Lucia, Jamaica and Trinidad and sales agents are located in another eight (8) countries in the Caribbean.

FUEL CANE

The major source of bio-fuel has been bagasse, which is used to drive the sugar industry (evaporating sugar from cane juice, driving machinery and producing electricity). This bagasse has yielded approximately 1.19 giga joules, at a value of over three (3) percent of the national energy budget. Very little of this was converted for supply to the electricity grid network.

A plan to produce a high fibre “fuel cane” has reached the conclusion of a feasibility study costing two hundred thousand (\$200,000) dollars Bds. This study suggests five hundred and fifty (550,000) thousand tones of fuel cane can be harvested as a new energy crop. This fuel cane would produce twenty-seven (27,000) thousand tones of sugar and one hundred and twenty-three (123) Gwh of electricity. This would be fourteen (14%) percent of the current electricity supply and constitutes in addition to the bagasse used for heat in the factory.

LANDFILL GAS

A study was carried out that suggested that the naturally produced landfill gas at the mangrove land fill could be

harvested to run 1.5 MW power plant yielding 10.5 Gwh of electricity or 1% percent of current electricity production.

ENERGY CONSERVATION

With the price of fossil fuels peaking just around US\$70 dollars per barrel the Government, has committed to an Energy Conservation Programme with an exemplary lead by the public sector, beginning with vehicles.

It is expected that over 5% percent of and \$350) million Bds in fuel imports or \$17 million dollars Bds can be saved annually while sustaining existing levels of productivity and domestic spending power.

RENEWABLE ENERGY CENTRE

Government is still committed to the increased use and research of renewable energy alternatives and the establishment of a Renewable Energy Centre. The process for its creation has been approved by the Planning and Priorities Committee and thus far \$220,000 Bds has been allocated for the first phase of activities. The application for the conversion of two (2) acres of land at Coverley, Christ Church for the use of a renewable energy centre has been approved by the Town Planning Department and access to this land is being sought from the Ministry of Housing, Lands and Environment. An architect has been hired to prepare the initial plan for submission to Priorities Planning Committee.