

BOTSWANA - USING NCA DATA TO INFORM SECTORAL POLICIES/STRATEGIES AND MONITOR SDGS

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BACKGROUND

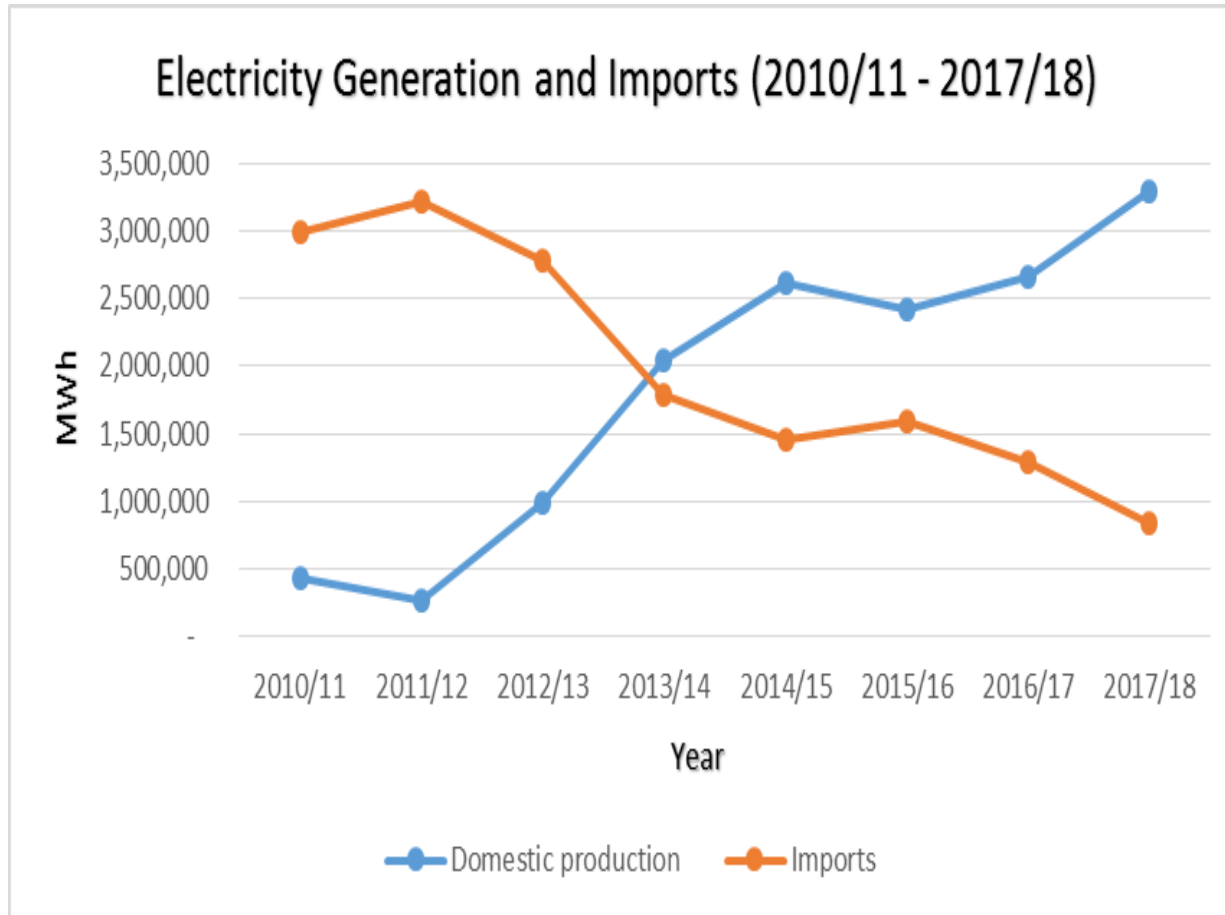
Botswana Energy Accounts cover the period from 2010/11-2017/18.

The current accounts are limited to coal and electricity sources. Main data providers are Morupule Coal Mine (MCM), Botswana Power Corporation (BPC) and Statistics Botswana (SB).

To date, two technical reports have been published and the policy brief shared with stakeholders.

Currently, focus is on construction of the 2018/19 and 2019/20 accounts.

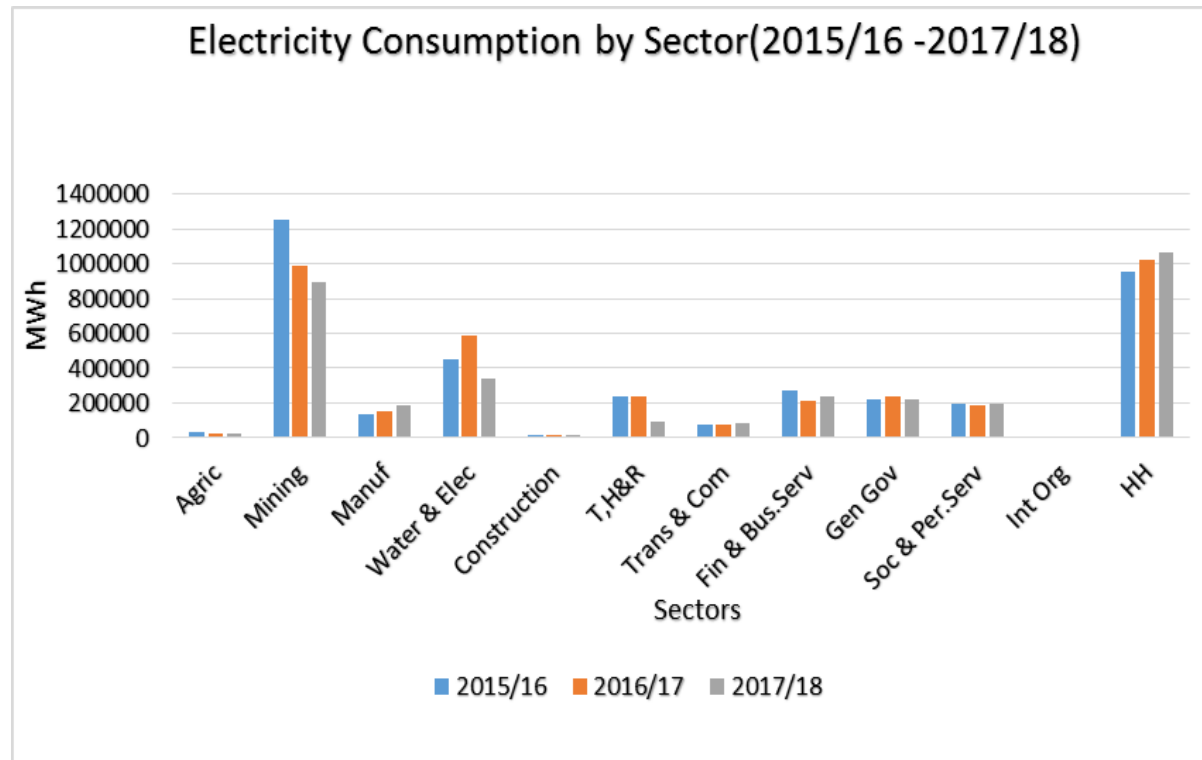
ENERGY ACCOUNTS RESULTS (2010/11 – 2017/18)



During NDP10, there was a departure from reliance on least cost imported energy to self-sufficiency. As a result, local electricity generation sharply rose surpassing electricity imports from 2012/13 to date.

The proportion of imports to total electricity supply stood at 87.4% during 2010/11 and 20.3% during 2017/18.

ENERGY ACCOUNTS RESULTS 2015/16 – 2017/18)

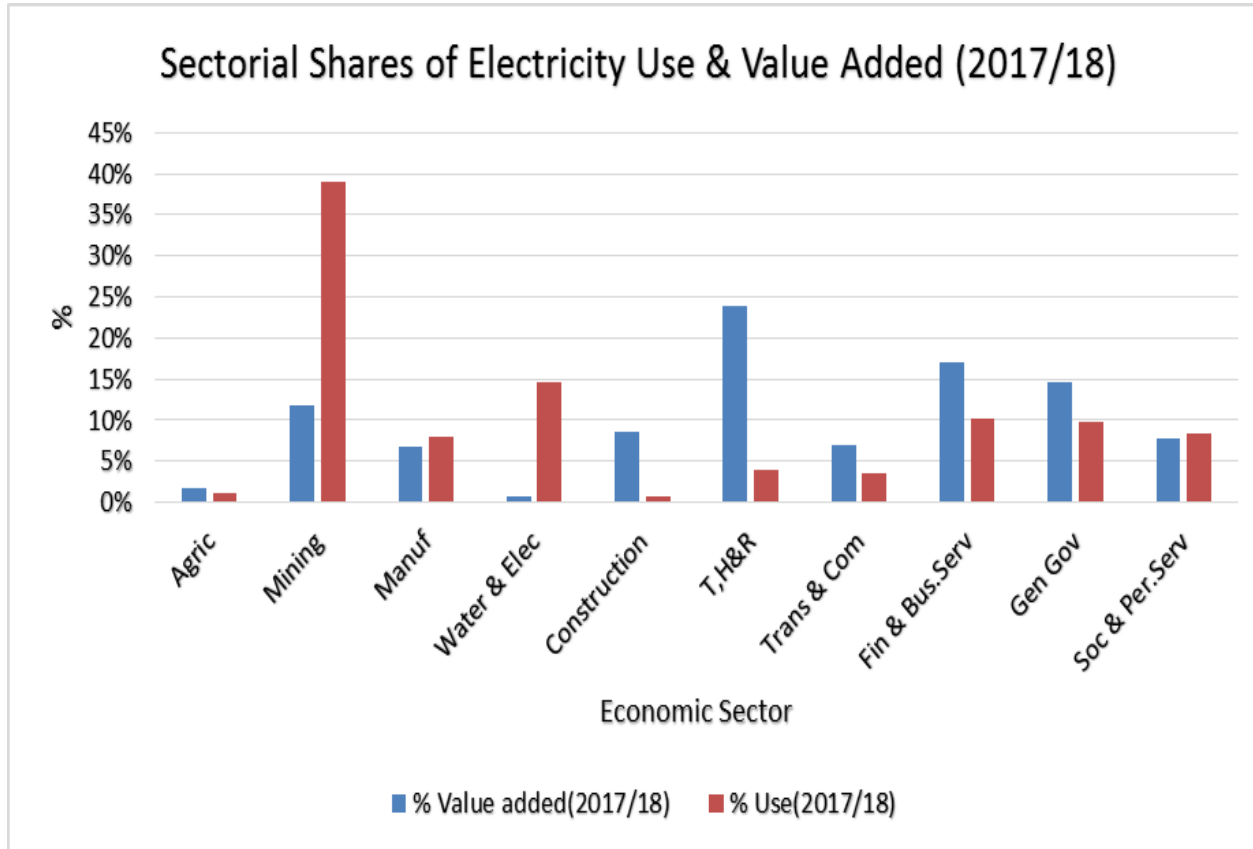


From 2010/11 to date, the main electricity consuming sectors are mining and households respectively.

However, during both 2016/17 and 2017/18, the mining sector's consumption declined resulting in the household sector surpassing the mining sector's consumption.

The decline was due to the shutting down of one of the big mines.

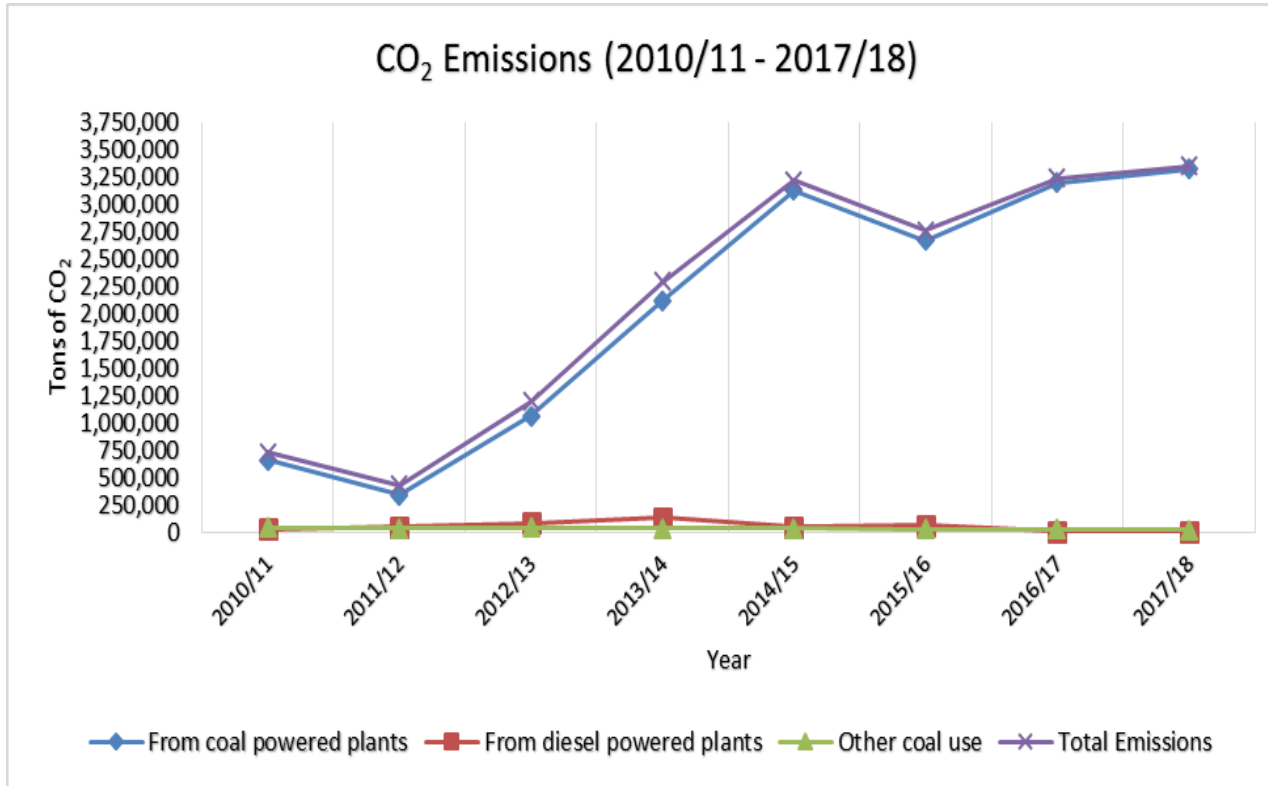
ENERGY ACCOUNTS RESULTS (2017/18)



During 2017/18, just like past energy accounts(2010/11-2015/16), the mining sector used more of productive electricity (39%) than its share in value added, which was 12%. On the other hand, the services sectors' (especially Trade & Hotels; Finance & Business Services; General Government etc.) registered higher value added than their individual shares of electricity use.

This provides a window for diversification of the economy. For such sectors, policy actions on energy efficiency measures can also be considered.

ENERGY ACCOUNTS RESULTS (2010/11-2017/18)



From 2010/11 until 2017/18, total emission levels increased as local electricity generation increased.

The proportion of emissions from coal powered plants to total emissions stood at 90.4% during 2010/11 but increased to 99.2% during 2017/18.

Total emissions were 3,233,941Tons of CO₂ equivalent during 2016/17 and increased to 3,344,534Tons during 2017/18 representing a rise of 3.4%.

SUMMARY OF KEY POLICY MESSAGES

The period 2010/11-2015/16 was a transition period towards greater electricity self-sufficiency. There was rapid increase in local production and a rapid decline in imports. Concerted efforts in the rehabilitation of the two power plants is necessary for the country to achieve self-sufficiency and become a net-exporter.

The contribution of renewables to the energy-mix remains insignificant (estimated at round 0.01%). The radical increase in contribution of renewables could address: SDG 7.2; address environmental impact & Paris Agreement; the Ministry's mandate and energy security.

The Mining and Household Sectors are the main electricity users and need to be targeted for energy conservation initiatives. This is in line with SDG 7.3 and could address the fact that energy expenditure makes a significant component of these sectors budget. However, further work is needed to identify most consuming activities within these sectors).

SUMMARY OF KEY POLICY MESSAGES

Rapid increase in CO₂ emissions is an environmental and cost concern. Therefore, to reduce/ avoid CO₂ emissions, there should be high penetration of renewables especially in electricity generation; increase in energy efficiency measures within the most energy consuming areas in the mining and household sectors, and lastly, switching of fuels, e.g. diesel to Coal Bed Methane (CBM) within existing power stations.

The mining sector uses more electricity than its share in GDP, the opposite is the case for Services Sector. Botswana has been reliant on the mining sector for a long time, this scenario therefore offers an opportunity for economic diversification to promote the services sector.

LINKAGE TO NATIONAL ENERGY POLICY (NEP)

Energy Accounts drive policy development around four main areas:

Availing timely, relevant and reliable energy data for planning and management of energy supply and demand;

Identify high intensity or poor performing sectors by monitoring changes in energy intensities for purposes of energy efficiency improvement;

Tracking the availability and use of different energy sources to inform formulation of policy around diversity in energy supply and improvement in energy security;

Tracking emissions especially CO₂ at sector and national level for purposes of reducing and managing environmental impacts associated with energy use.

LINKAGE TO NEP AND SDG 7 APPLICATION

The Energy Accounts undertakes the following activities which are linked to NEP and SDG 7:

- ***Improve energy efficiency and demand management in all sectors in all sectors:*** This activity is currently focused on the mining sector, plans are to disaggregate some economic sectors and calculate respective EI. This activity is linked to both NEP and SDG7:3
- ***Minimizing energy related impacts on the environment:*** The Energy Accounts calculates CO₂ emissions at sector level although within the electricity sector alone. This activity is linked to NEP.
- ***Increase share of new and renewable sources of energy in the energy supply mix:*** The Energy Accounts currently include the Phakanane 1,3 MW Solar Station. The planned renewable projects under the IRP for the period 2023-2040 will be/can be easily incorporated within the Energy Accounts infrastructure hence contribution of renewables to the energy mix will be calculated and monitored. This activity addresses both NEP and SDG 7:2.

LINKAGE TO INTEGRATED RESOURCE PLAN (IRP); RENEWABLE AND ENERGY EFFICIENCY & CONSERVATION STRATEGIES

The following activities, performed within the Accounts, link the Accounts with the above Plan and Strategies:

Availing timely, relevant and reliable data especially to the Integrated Resource Plan as and when it undergoes reviews.

Currently, the Accounts track energy intensities in order to determine energy efficiencies/inefficiencies within the mining sector. This will be extended to other economic sectors. (Energy Efficiency & Conservation Strategy)

The inclusion of Phakalane 1.3 MW Solar PV Station in the Energy Accounts provides a platform for future inclusion and monitoring of renewable projects and their contribution to the energy mix(New and Renewable Strategy)

WAY FORWARD

The foremost crucial activities that could close most of the existing gaps within the energy accounts for the purposes of enabling them to fully drive policy development and track progress of SDG 7 is:

Conducting of a National Energy Use Survey (NEUS). This will allow for:

- Expansion of energy accounts to other energy sources

- Availability of relevant/current data on all energy sources

- Identification of most electricity consuming activities within the mining and household sectors, as candidates for energy saving measures.

Capacity building especially in the area of generating energy indicators, interpretation of same & linkage to policy and other national issues of importance.