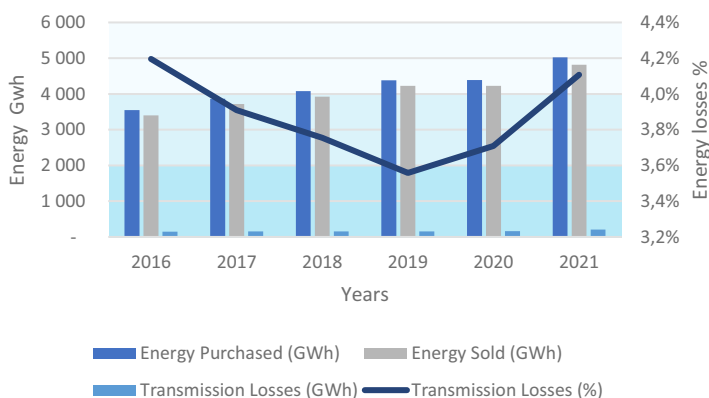


## Transmission losses Energy Purchases

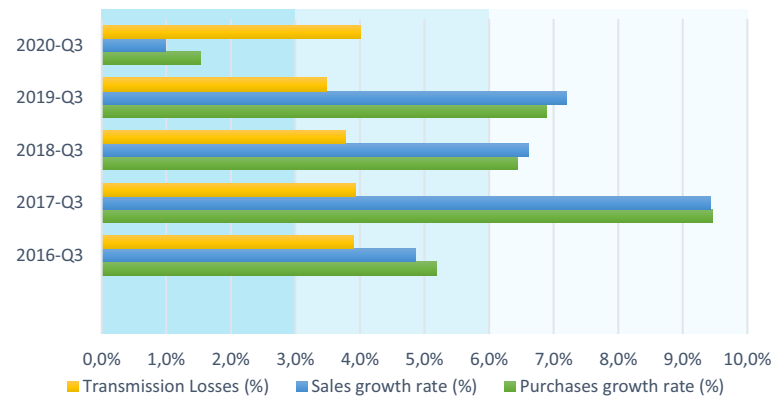
**Uganda operates a single bulk supplier model in electricity transmission.** The Uganda Electricity Transmission Company Limited (UETCL) has a license for bulk power supply, import and export of electricity as well as a system operator.

The growth rate in energy purchases and sales in the FY 2019/20 increased but at a lower rate, recording an annual growth rate of 2%, far below the 6% average annual growth rate observed since FY 2015/16.



Source: Electricity Regulatory Authority of Uganda

UETCL made significant transmission losses<sup>1</sup> relative to the sales and growth in Q3 of 2020 compared to Q3 of 2017. Sales growth grew by only 1% in Q3 of 2020 compared to 7.2% the previous year.



Source: Electricity Regulatory Authority of Uganda

## Source of energy purchases

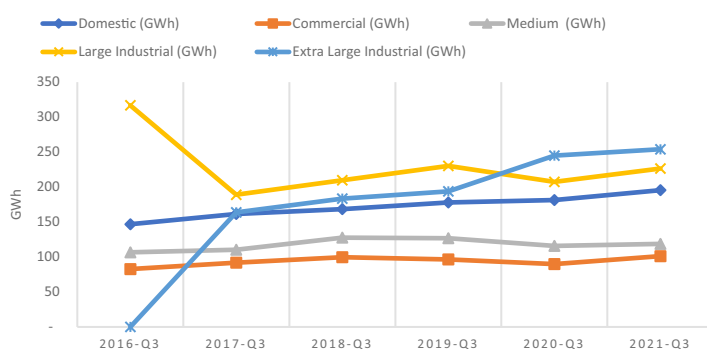
About 91% of the transmission purchases were from Hydro (Large Hydro=77%, Small Hydro=14%) with the other technologies combined constituting 9%. Overall, 98% of the energy supply was from Renewable energy sources including hydro, solar and to a lesser extent bagasse which increased in 2019/20.

	2016	2017	2018	2019	2020	2021
Large Hydro	2967,1	3183,4	3157,5	3505,9	3434,8	3969,7
Small Hydro	293,7	264,0	444,4	479,9	601,9	612,0
Bagasse	177,6	149,8	206,5	196,8	188,3	266,5
Thermal	66,3	231,1	198,9	102,8	57,3	51,2
Solar	3,7	25,4	32,3	78,1	87,5	100,9
Imports	40,7	13,4	39,0	20,5	21,4	23,9
Total	3549,0	3867,1	4078,5	4383,9	4391,1	5024,2

Source: Electricity Regulatory Authority of Uganda

**Umeme is the leading distribution company in Uganda, selling about 98% of the total energy to the end-users.**

Reduction in medium and large industrial activity is reflected in low energy sales to end users. Umeme's energy purchases and sales increased by only 1% in the FY2019/20, compared to 8% observed in the FY2017/18 and FY2018/19. Sales to extra-large industrial customers and domestic customers increased by 8% and 7% respectively in 2019/20 as compared to 2018/19.



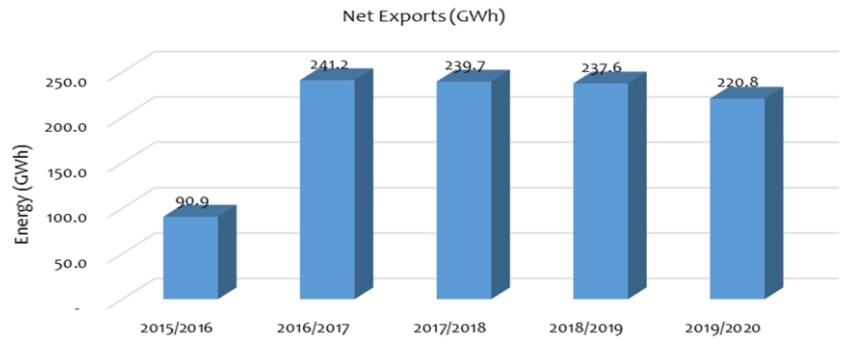
Source: Electricity Regulatory Authority of Uganda

<sup>1</sup>Transmission Losses – are computed as the percentage of energy purchased but not sold

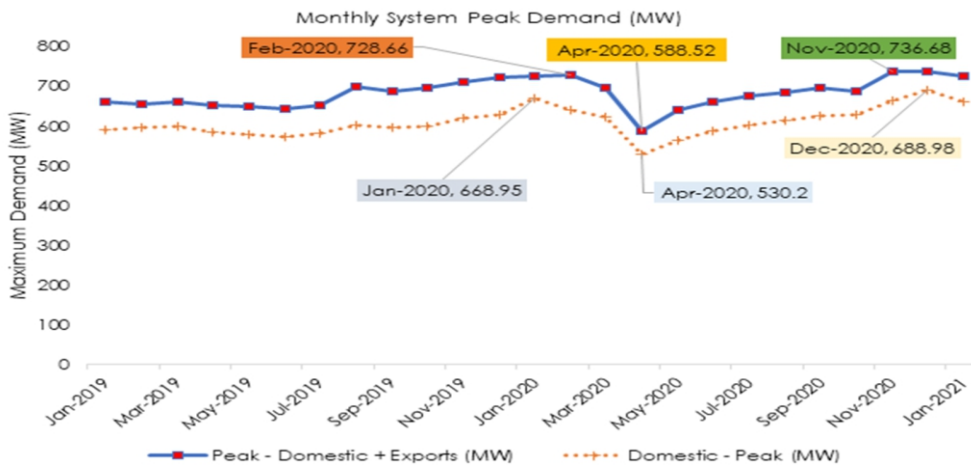
Uganda's Energy Net Exports

Uganda exports electricity to Kenya, Tanzania, Rwanda, and the Democratic Republic of Congo (DRC). On the other hand, electricity imports are from Kenya and Rwanda. The electricity net export is computed as the difference between the electricity Uganda imports and exports to neighbouring countries.

Uganda had a net electricity export of 221GWh during the FY2019/20 signifying a 17% drop from the net exports recorded during the previous financial year.



Source: Electricity Regulatory Authority of Uganda



Source: Electricity Regulatory Authority of Uganda

Electricity Supply Industry was greatly affected by the Covid-19 pandemic, with the peak demand dropping to as low as 588.5 MW in April 2020 having dropped from 728.7 MW in February 2020. The maximum demand registered in 2020 was 736MW in November 2020.

Analysis

The COVID-19 pandemic and subsequent lock down measures had direct impact on the electricity supply industry in Uganda. The disruption of economic activities resulted in the fall in demand for electricity. The energy sector experienced a challenging 2019/20 financial year due to the complications posed by the pandemic such as drops in revenue as a result of low sales growth, reduced industrial demand and challenges associated with low distributions and transmission. Overall, there was a 24% decline in the purchases of energy from the transmission company, a 29.1% decline in energy sales to customers, a 30.6% increase in energy losses, and a 20.8% reduction in revenue collection. Prior to the pandemic demand for electricity was on a steady increase registering a peak in system demand of 728.7 MW in February 2020 before reducing by 19.2% to 588.5 MW in April 2020. Reductions of 17.0%, 20.5% and 26.6% were noted for energy purchases, energy sales to customers, and revenue collection, respectively, in April 2020 compared to April 2019.

Reduced sales also resulted in transmission losses. Although transmission losses increased to 4% in 2020 Q3 from 3.5 % in 2019 Q3, the pandemic induced constraints led to low sales growth of 1% in 2020 Q3 compared to 7.2% the previous year.

Distribution was also affected with some notable declines in demand from industrial sector. For example, in FY2019/20, Umeme's energy sales were majorly to the large and extra-large industrial customers, with both customer categories constituting 52% of the total energy sales while the sales to medium industrial, commercial and domestic customers constituted 15%, 11% and 22%. Net electricity exports declined registering 221GWh during the FY2019/20 signifying a 7% drop from the net exports recorded during the previous financial year. However, as the pandemic measures were eased, sales recovered in 2021 to 4818 (GWh) from 4228(GWh) the previous year.

Outlook

The guidelines and measures imposed by the government to manage the effects of the pandemic are expected to continue to have an impact on economic activity and the energy sector. While the energy sales transmission and purchases are expected to rebound, Omicron and perhaps, some other Covid-19 variants may disrupt recovery and cloud the future trajectory. In the interim though, as the restrictive measures are relaxed, the sector is widely expected to respond in tandem. For example, in the month of May 2020, there was an increase in energy purchases of 16.3%, energy sales to customers were 18.3%, and a reduction in energy losses of 6.6% as compared to April 2020. However, the possibility of negative effects of future pandemics may be curtailed by further improvements in institutional efficiency. The Uganda Electricity Regulatory Authority's new Five-Year Strategic Plan (2020/21 – 2024/25) will likely lead to more improvements in distribution, generation and supply. This is possible through continuous private sector participation. To date, electricity distribution in Uganda has grown from having one company in 2001 to 9 companies by 2021. The growth in distribution will enable wider distribution and coverage increasing affordability, adoption of clean energy technologies and reliable generation and transmission.