



Promoting a Regional Competitive Electricity Market

July 2016

July 2016 Highlights (Compared to June 2016)

Total turnover (all markets)	▲ \$1,653,027.89 / 64.7%
Traded Volumes(All markets)	▲ +16,914.6 MWh / +54.8%
DAM Traded Volumes	▲ +16,319.5 MWh / +107.4%
FPM Monthly traded Volumes	▼ -238 MWh / -3.3%
FPM Weekly traded Volumes	▼ -1, 251.8 MWh / -17.9%
IDM Traded Volumes	▲ +2,085 MWh / +142%

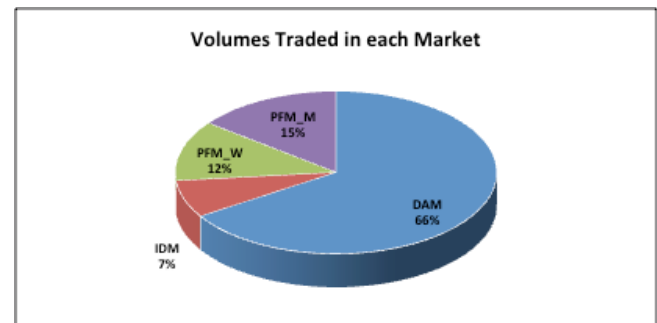
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intra-day market (IDM), Forward Physical Monthly Market (FPM-M) and Forward Physical Weekly Market (FPM-W) increased by 54.8% in the month of July 2016 when compared to June 2016. Total traded volume in July 2016 was at **47,792.1 MWh** compared to 30,877.50MWh traded in the month of June 2016. Below is the overview of volumes traded in DAM, IDM, FPM-M and FPM-W for the month of June 2016.

Fig 1.1: Traded Volumes in MWh for FPM-M, FPM-W, DAM and IDM Markets for the month of June 2016.



Day Ahead Market (DAM)

A total of **31,520 MWh** was traded in the DAM market, registering a 107.4% growth when compared to the June figure of 15,201 MWh. There were more buy bids than sale offers received in DAM in July 2016 where a total of 422,136 MWh Sale offers and 323,262 MWh Buy bids were received. This was an increase of 136,931 MWh or 48% in Sale offers received and a decrease of 53,246 MWh or 14% in Buy bids received in July 2016 when compared to June 2016 figures of 285,205 MWh Sale offers and 376,508 MWh Buy bids received.

Below is a summary of buy and sale bids received on the DAM for the month of June 2016.

Participation Levels

There were ten (10) active portfolios from seven (7) members during the month of July 2016. In June 2016 they were eight (8) active portfolios from seven (7) members.

Market Liquidity

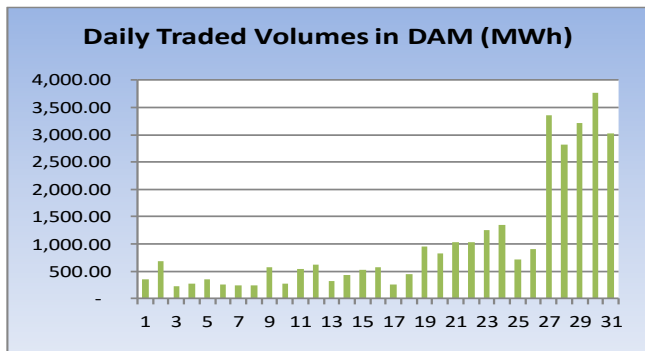
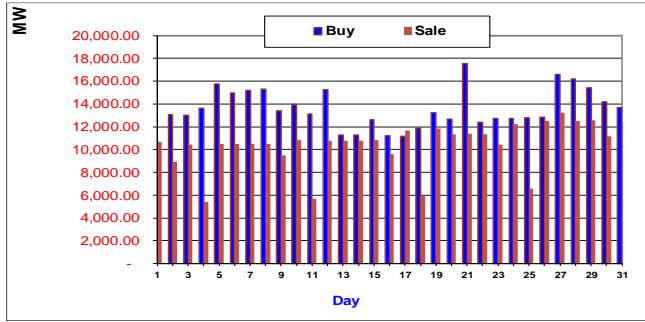
Trading in the market was relatively higher during the month of July 2016 when compared to June 2016. Total traded volumes on the Day Ahead market (DAM),



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Fig 1.2 Total DAM Buy and Sale Bids Received Daily in July 2016 (MWh).



The total energy traded in DAM in July was 31,480.5 MWh which is an increase of 16,279.5 MWh or 107% from the 15,201 MWh recorded in June 2016.

There was matching of bids in DAM for 31 days and 696 hours or 93.55% of the time during the month of July 2016. However, due to transmission constraints, trading occurred for 31 days and 545 hours or 73% of the time. In comparison to June 2016, matching occurred for 30 days and 653 hours or 90.69% with trading occurring for 30 days and 720 hours or 100% of the time.

Forward Physical Market Weekly (FPM-W)

The total volumes matched in the FPM Weekly market increased by 1,354 MWh or 1.7% to 79,765.4 MWh in July 2016 from 78, 411.3 MWh in June 2016. Despite the increase in matched volumes, the total energy traded in July 2016 was 5,720 MWh which is a decrease of 17.9% or 1,251.8 MWh mainly due to increased transmission constraints for FPM-M trades for the month. In June 2016 the traded volumes in the FPM Weekly market were 6, 992.5 MWh.

Fig 2.1 FPM Weekly Market: Traded Volumes for July 2016 (MWh)

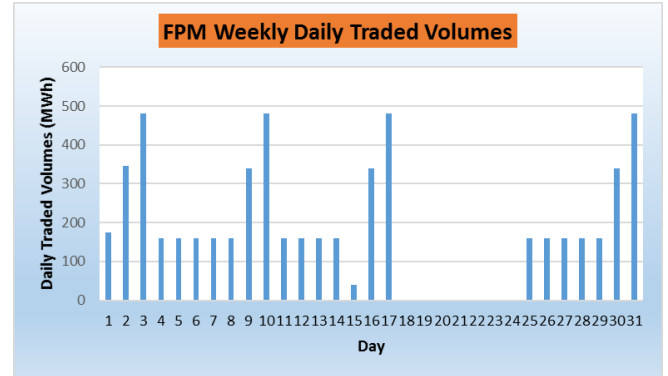
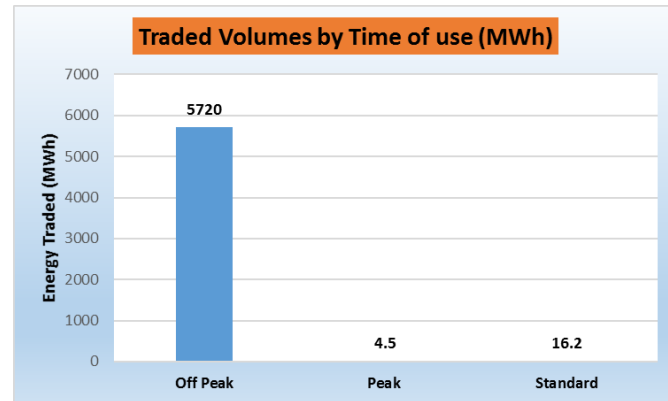


Fig 2.2 FPM Weekly Market: Traded Volumes by time of use for July 2016 (MWh)

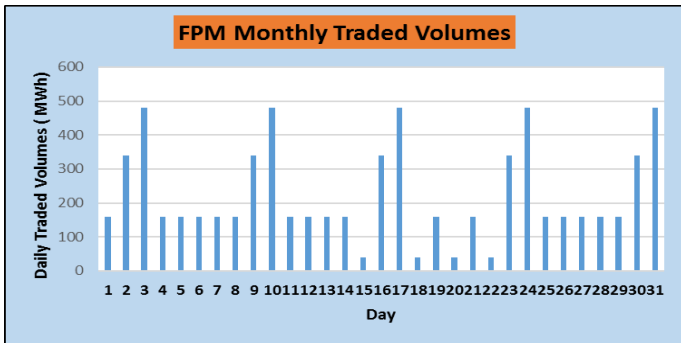


99.7% of the total energy that was traded was during Off Peak period and the remainder was for the Peak (0.1%) and Standard periods (0.2%).

Forward Physical Market Monthly (FPM-M)

Total traded volumes on the FPM-M was marginally lower in July 2016 at 6,980 MWh, representing a marginal decline of 3.3% or 238 MWh from the June traded volumes of 7,218 MWh. The total energy that was matched in the month of June in the FPM-M marginally increased by 0.5% or 220.8 MWh to 50,658.3 MWh from the June 2016 volume of 50,437.5MWh.

Fig 3.1 FPM Monthly Market: Daily Traded Volumes for July 2016 (MWh)



All the volumes traded in the FPM-M were for the Off Peak Period.

Intra-day market (IDM)

Trade in the IDM in July 2016 was significantly higher when compared to June 2016. The buy bids increased by 433% or 10,468 MWh from 2,417 MWh in June 2016 to 12,885 MWh in July 2016. Similarly, the sale bids also increased by 129% from 3,004 MWh in June to 6,868 MWh in July 2016.

IDM also recorded a significant growth in traded volumes of 142% with 3,551 MWh having been traded in July 2016, up from 1,466 MWh achieved in June 2016.

Fig 4.1 IDM: Daily Traded Volumes for July 2016 (MWh)

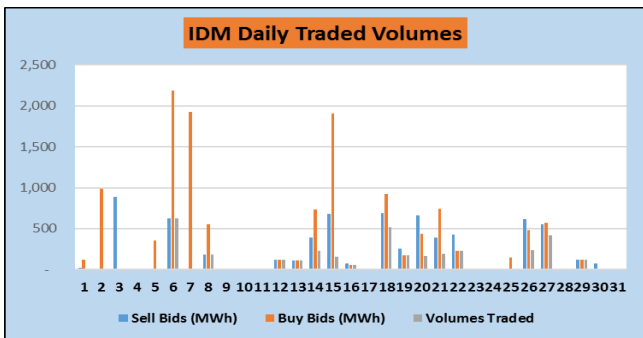


Fig 4.2 IDM: Bids and Traded Volumes for July 2016 (MWh)

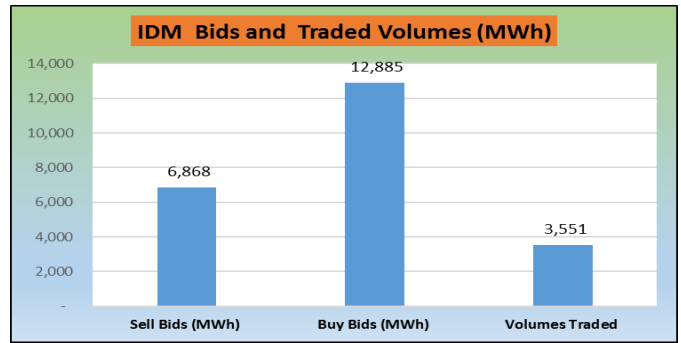
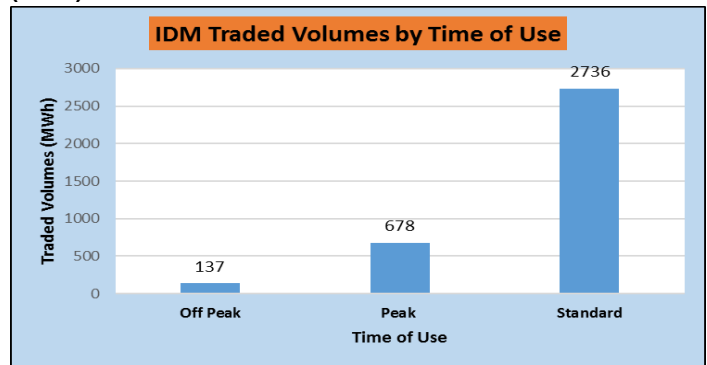


Fig 4.3 IDM: Traded Volumes by time of use for July 2016 (MWh)



77.1% of the energy traded in IDM was during Standard period whilst the remainder was for the Peak (19%) and Off Peak (3.9%) Periods.

Impact of Transmission Constraints

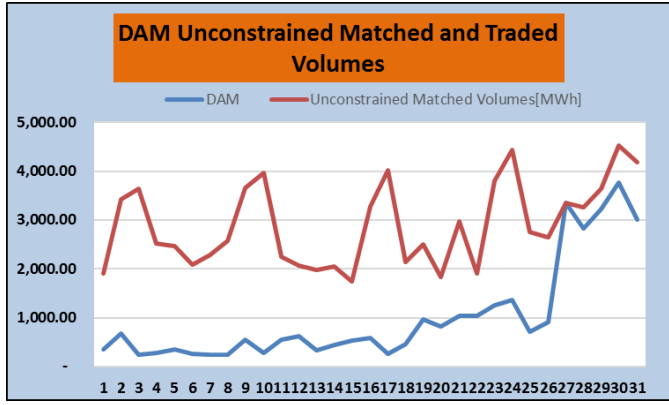
Transmission access for the competitive market was constrained in the month of July 2016. As a result of this, despite 89,794.20 MWh having been matched on the DAM trading platform, only 31,480.50 MWh (35% of the matched volume) was traded. 65% of the matched energy was not traded in July due to transmission constraints mainly within ZESA. June 2016 had a total of 88,762 MWh that were matched on the DAM trading platform whilst 15,201 MWh was able to be traded during the month of June 2016 resulting in 73,561MWh or 83% of the matched volumes failing to get traded.



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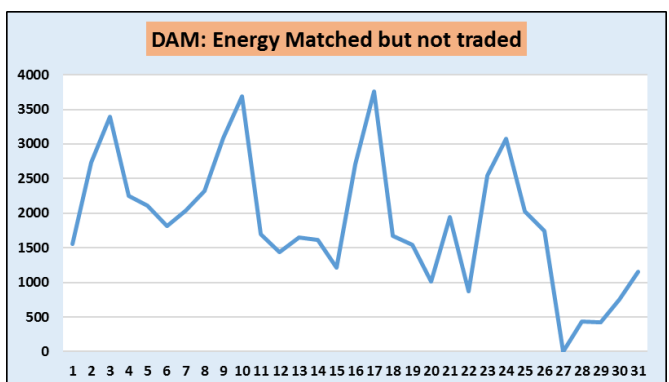


Fig 5.1 Impact of Transmission Constraints on DAM Trading for the month of June 2016.



As shown above there is a significant difference between matched and traded volumes during the month of July 2016 as a result of increased transmission constraints for the competitive market. The gap however narrowed during the last week of July 2016 when there was improvement in transmission capacity.

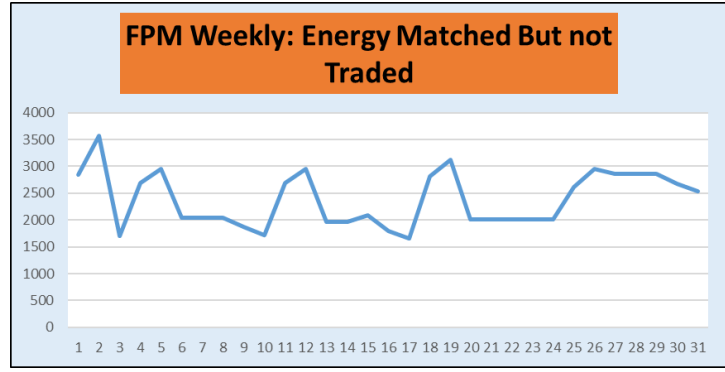
Fig 5.2 Energy Matched but not traded in DAM Trading platform for the month of July 2016.



In comparison, June 2016 had a total of 88,762 MWh that was matched on DAM resulting in 15,201 MWh being traded and 73, 561 MWh or 82.9% failing to be traded in DAM.

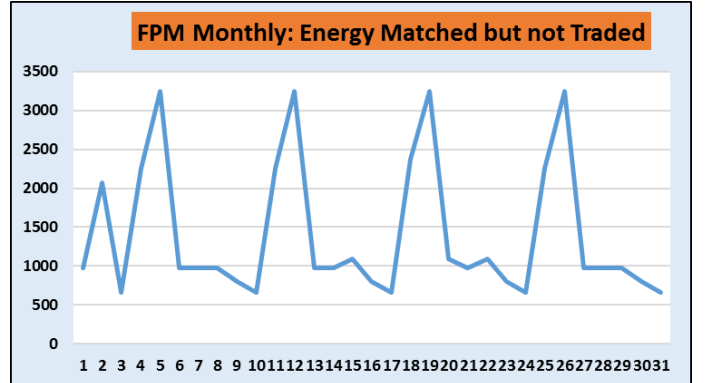
In the FPM Weekly market, 79, 765.4 MWh was matched and 5, 740.7 MWh was traded in July. Consequently, 74, 024.7 MWh (92.8% of matched volumes) was not traded.

Fig 5.3: Energy Matched but not traded in FPM Weekly Trading platform for the month of July 2016.



Energy matched in the FPM-M for the month of July 2016 was 50,658.3 MWh with 43,678.3 MWh or 86.22% of the matched energy failing to be traded due to transmission constraints.

Fig 5.3: Energy Matched but not traded in FPM Monthly Trading platform for the month of July 2016.



Market Clearing Prices

Day Ahead Market

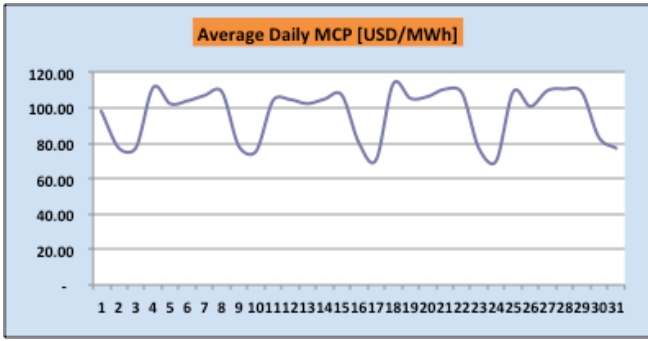
Prices were relatively stable on the competitive market for most of the days during the month of July 2016. The average monthly market clearing price (MCP) was slightly higher during the month of July 2016 at 9.687USc/KWh compared to the 9.323USc/KWh recorded in June 2016. Below is a summary of the daily average MCPs for the month of July 2016.




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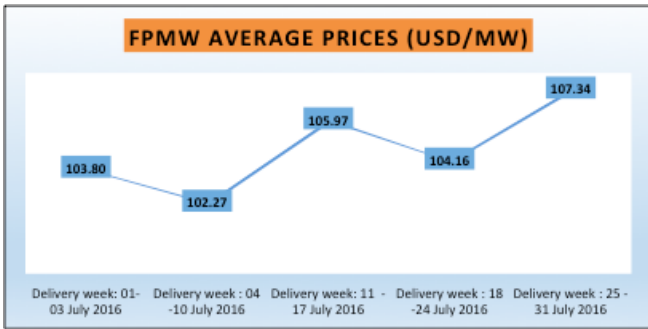

Fig 6.1 Daily Average DAM MCP prices for the month of July 2016.



FPM Weekly Prices

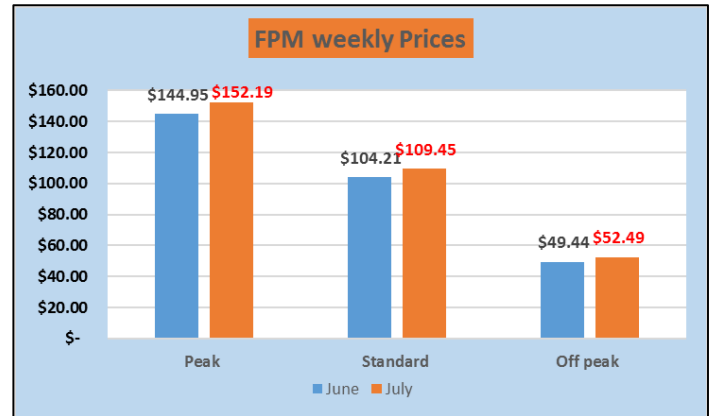
Average prices in the FPM-W market were slightly higher for the month of July 2016 when compared to June 2016. The minimum and maximum weekly average prices registered in July 2016 were 10.227 USc/KWh and 10.734 USc/KWh.

Fig 6.2 FPM-W Average prices for the Month of July 2016.



The average Peak price was slightly higher by 7% at 15.219 USc/KWh in July 2016 from the June average peak price of 14.495 USc/KWh. Similarly, Standard and Off peak average prices also marginally increased from the June average prices of 10.421USc/KWh and 4.944USc/KWh respectively to 10.945 USc/KWh and 5.249 USc/KWh respectively.

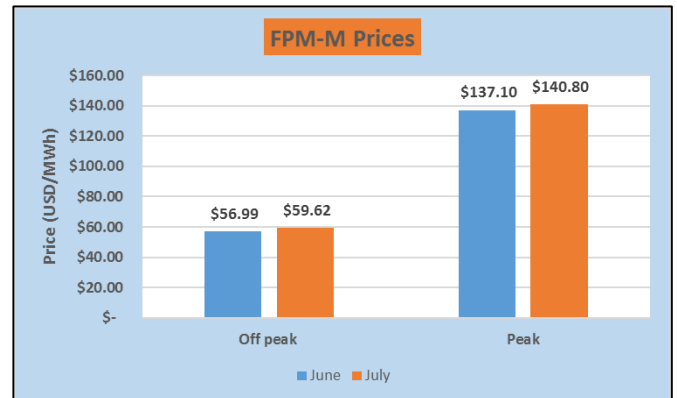
Fig 6.2 FPM-W Average Prices by time of use for the month of July 2016.



FPM Monthly Prices

There was a marginal increase of the FPM monthly prices for the month of July 2016. Off Peak prices marginally increased by 4.7% from 5.699 USc/KWh in June to 5.962 USc/KWh. Non Off-Peak prices were also up by 2.7% from 13.71 USc/KWh in June 2016 to 14.08 USc/KWh in July 2016.

Fig 6.2 FPM-M prices by time of Use for the month of July 2016.



Revenue Performances

A total of **USD4,207,872.55** was exchanged on the DAM, IDM, FPM-W and FPM-M market during the month of July 2016 when compared to a total of **USD2,554,844.66** exchanged in June 2016. The increase is mainly attributed to the increase in traded volumes.



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