American Energy Market Regulator

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Executive Summary

- ☐ The purpose of this analysis is to understand the
- Energy Stability over the year and common Market Outage type.
- Energy Losses and Market Reliability among all the participants.

Most Common Outage Type

Reason	2016	2017
Consequential	181	127
Forced	1,264	1,622
Opportunistic Maintenan	106	102
Scheduled (Planned)	380	320

- Most common outage type occur is FORCED type events.
- Most least outage occur is Opportunistic Maintenance events.

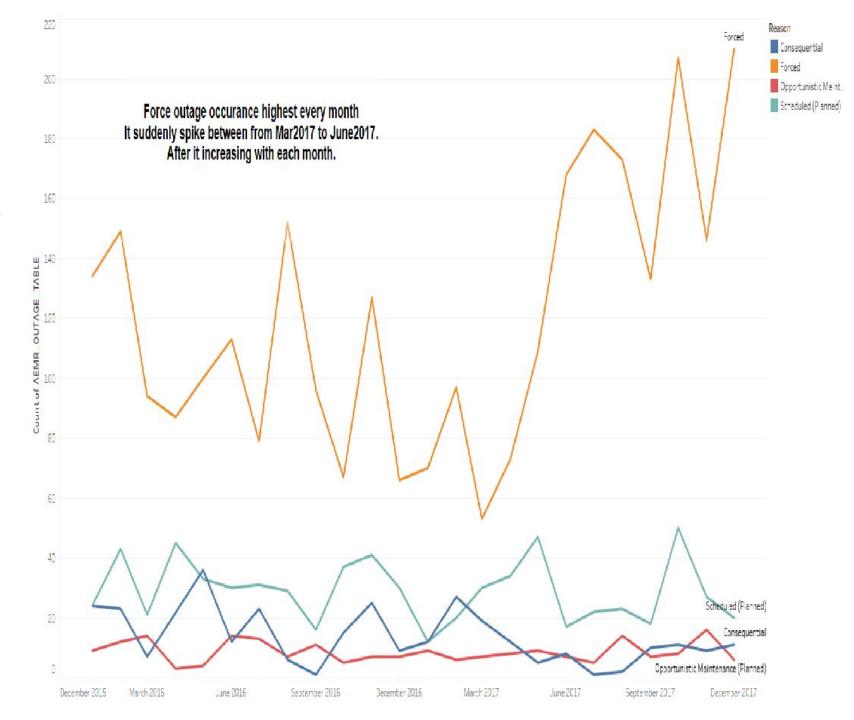
Outage Duration Each Year

Scheduled(Planned) outage stayed longer duration in both 2016 & 2017

Reason	Average_Outage_Duration_Time_Days	Year
Consequential	0.36	2016
Forced	0.56	2016
Opportunistic Maintenance (Planned)	0.32	2016
Scheduled (Planned)	4.57	2016
Consequential	0.33	2017
Forced	0.79	2017
Opportunistic Maintenance (Planned)	0.27	2017
Scheduled (Planned)	5.58	2017

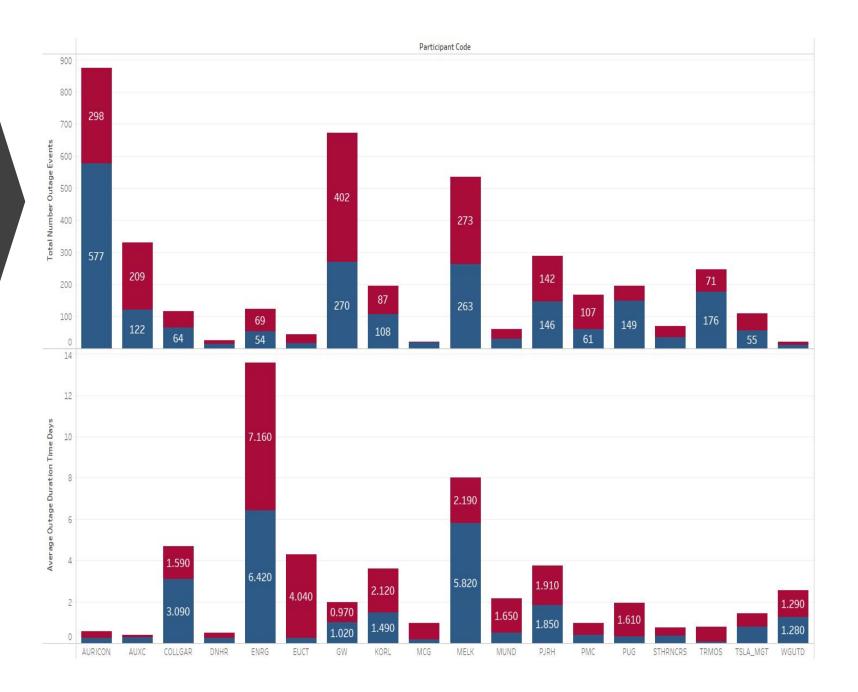
Outage Occur Frequency

- Highest 210 number of times outage (Forced) occur in Dec-2017.
- Lowest occur in Mar-2017



Number of Outage between Providers

- Auricon participant has the most outage of 875 over the years.
- ENGR participant has the longest outage duration period between 2016 and 2017.Average duration stays 13.58 days



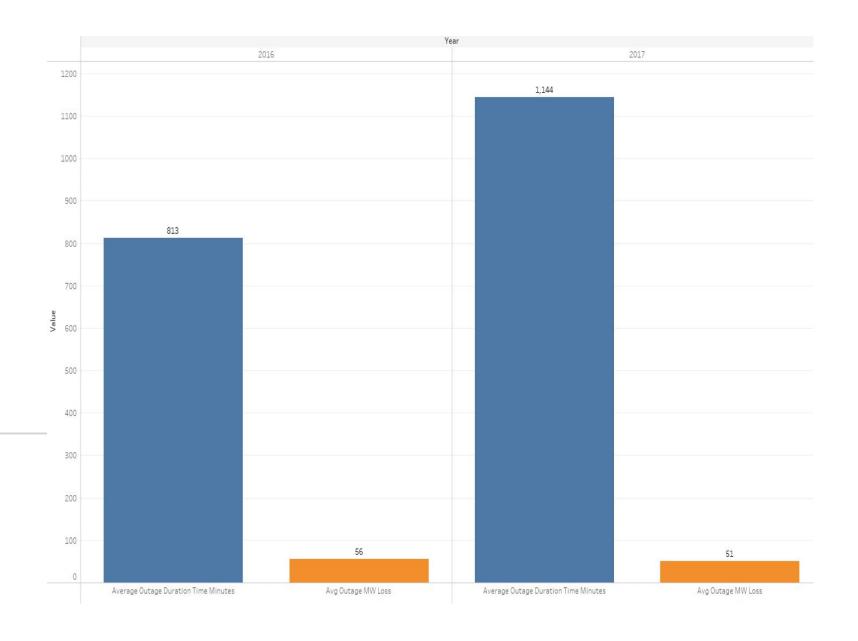
Total_Number_Forced_Outage_Events	Total_Number_	Outage_Events	Forced_Outage_Percentage	Year
1264		1931	65.4	6 2016
1622		2171	74.7	1 2017



Forced outage events almost increase 10% with in the year.

Any increase in the average duration of Forced outage?

The average duration of Forced outage increase 331.7 Minute within the year

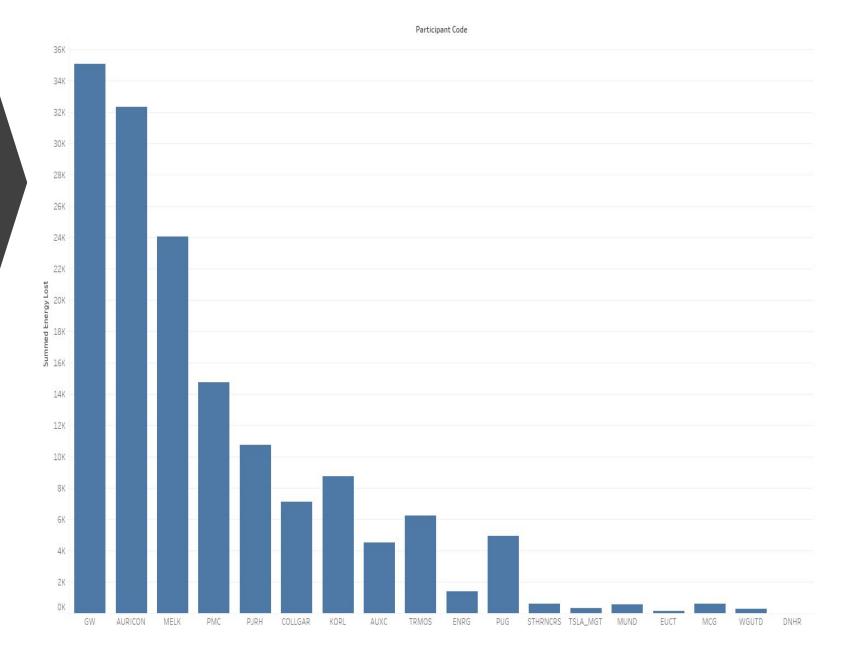


Each Individual Outage Events

Status	Reason	Year	Avg_Outage_MW_Loss	Average_Outage_Duration_Time_Minutes
Approved	Consequential	2016	53.06	518.78
Approved	Forced	2016	55.62	812.92
Approved	Opportunistic Maintenance (Planned)	2016	103.66	456.51
Approved	Scheduled (Planned)	2016	99.1	6582.32
Approved	Consequential	2017	51.03	481.89
Approved	Forced	2017	50.56	1144.09
Approved	Opportunistic Maintenance (Planned)	2017	84.4	387.35
Approved	Scheduled (Planned)	2017	85.47	8034.75

Most Unreliable Providers

 GW , AURICON AND MELK ARE the top 3 providers who has the overall summed outage energy loss among all the providers.



Summary

- Forced outage is the most occurred events. Its average duration time increase from 0.56 to 0.79 days in a Year.
- The percentage of Forced outage type increase 10% with in the year.
- Auricon providers has the most outage with 875 times between the years than their peers.
- GW, AURICON, MELK are the top 3 unreliable providers. It has the highest overall total energy loss.