EMMS

User Manual

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EMMS

1. Introduction

The objective of this document is to provide basic guidelines to users of

Kraft Heinz Emms web application.

This document contains instructions on how to use:

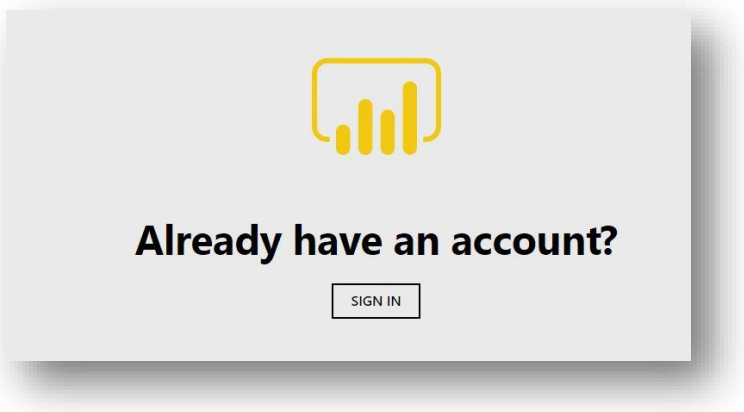
- Global Dashboard
- Global Reports
- Plants Dashboard
- Plants Reports

The purpose of this project is to develop dashboard and reports for monitoring the energy consumption (Electricity, Water, Air, Gas and Steam) of the manufacturing plants which helps **Kraft Heinz** to summarize energy consumption across plants and reduce energy consumption.

2. Login to the Kraft Heinz Web Application

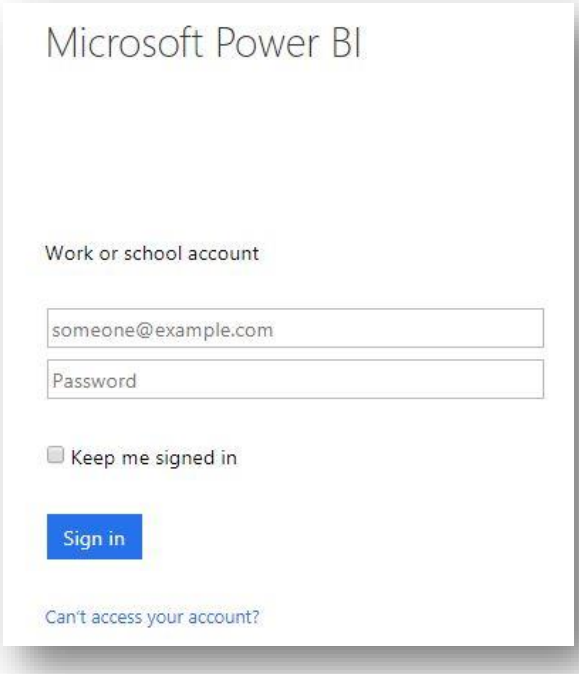
The user can log into the Kraft Heinz Web Application on Power BI website:

http://app.powerbi.com/

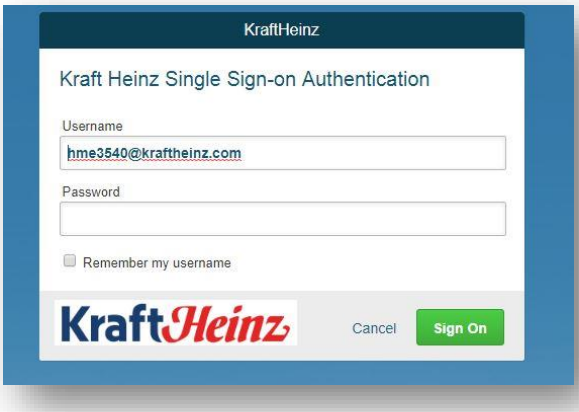


Select **SIGN IN,** in the above screen**.**

After clicking sign in it will be redirecting to this bellow screen, here you can enter yours credentials.

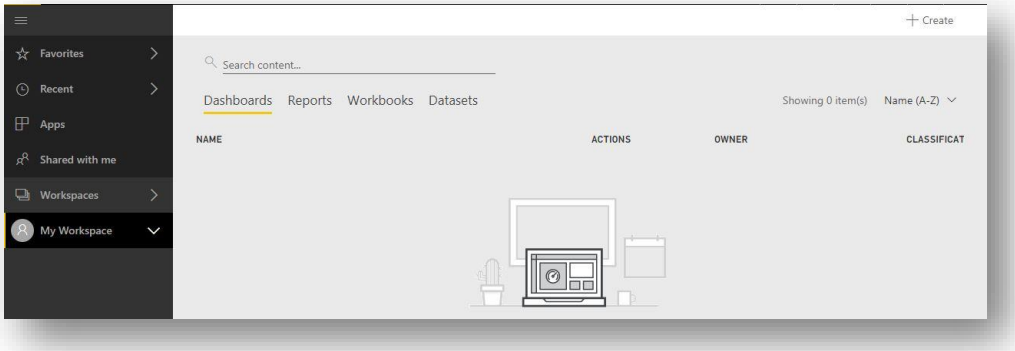


After clicking sign in to Microsoft power BI it will redirect to the in Kraft Heinz single sign-on authentication page.

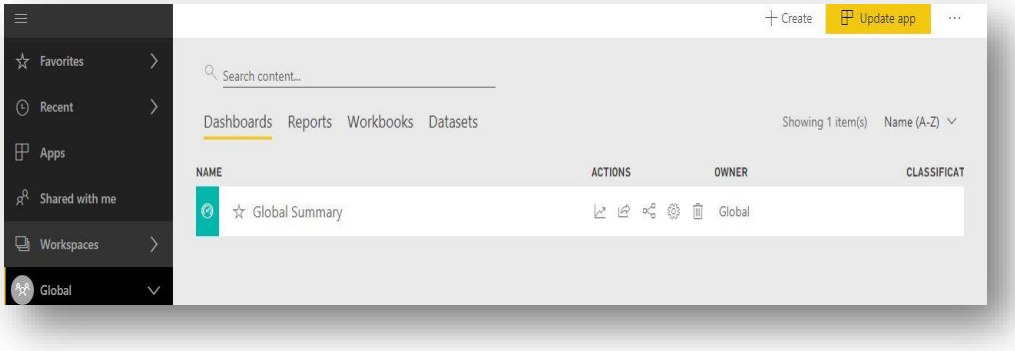


Here enter your password and click sign on.

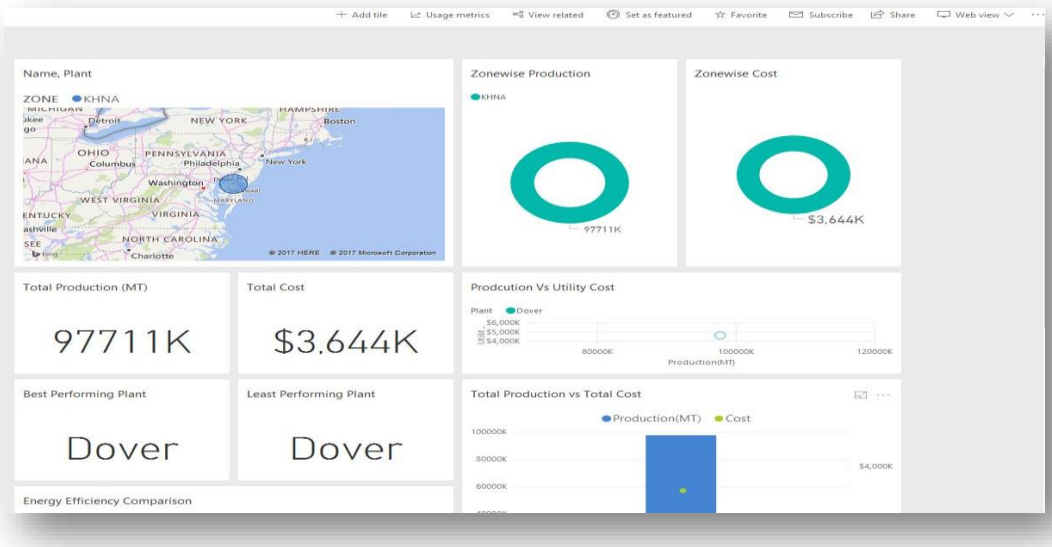
- After clicking sign on to it will redirect to the in-Kraft Heinz Emms web Application page.
- Use the left navigation menu to move through the various screens.
- Click workspace here and you can select global here.



- After select the global app, Click the Dashboard which is in the top left-hand corner
- Click on The Name of Your Dashboard, which is in the quick links at the top of the screen

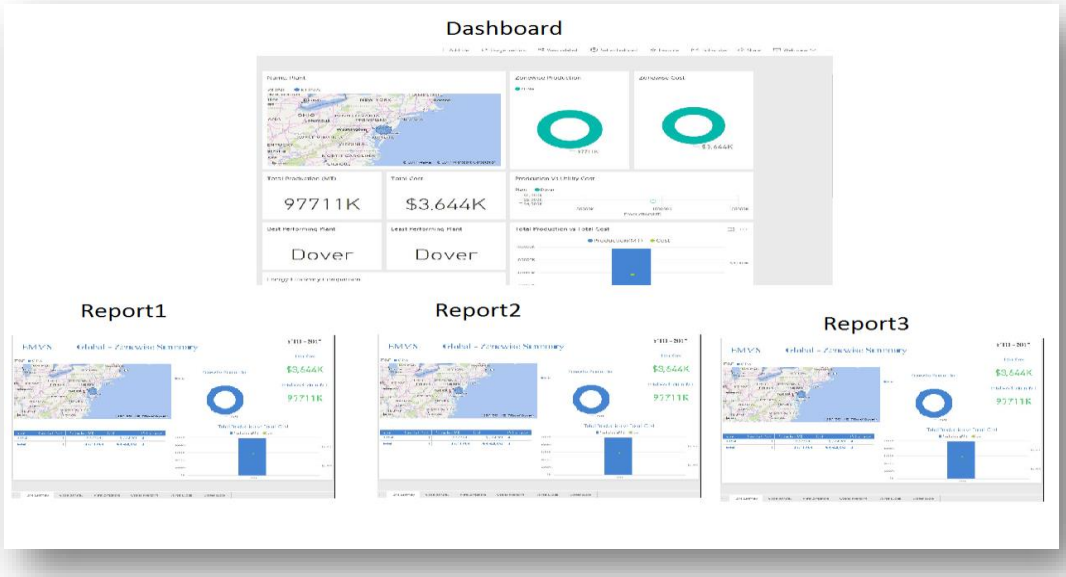


3. Global Dashboard

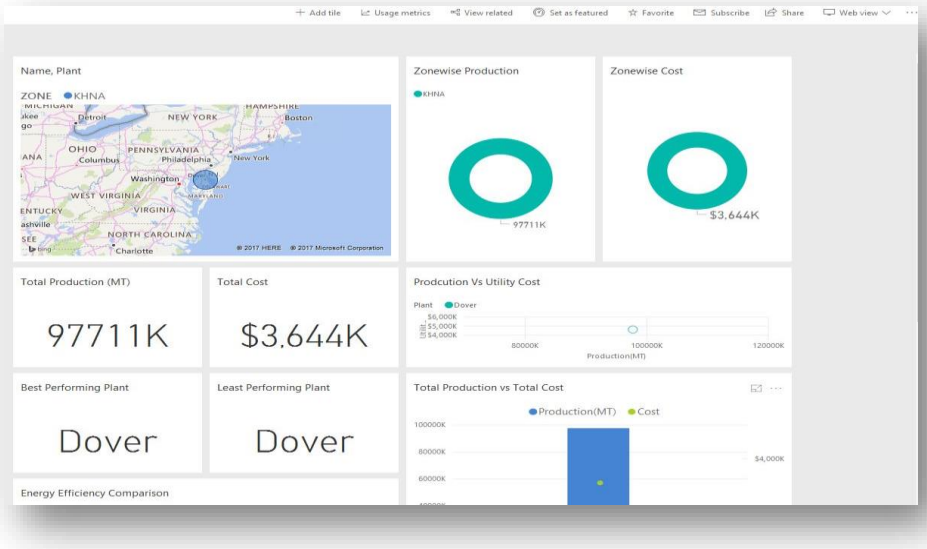


The visualizations you see on the Global dashboard are called ***tiles*** and are ***pinned*** to the dashboard from Global reports.

The visualizations on a Global dashboard come from Global reports and each report is based on Global dataset. In fact, one way to think of a Global dashboard is as an entryway into the underlying Global reports and datasets. Selecting a visualization takes you to the Global report (and dataset) that was used to create it.



3.1 Global Dashboard Tiles



A tile is a snapshot of our data, pinned to the Global dashboard. A tile can be created from a report, dataset, dashboard, from the Azure SQL Database. This screenshot shows many different tiles pinned to a Global dashboard.

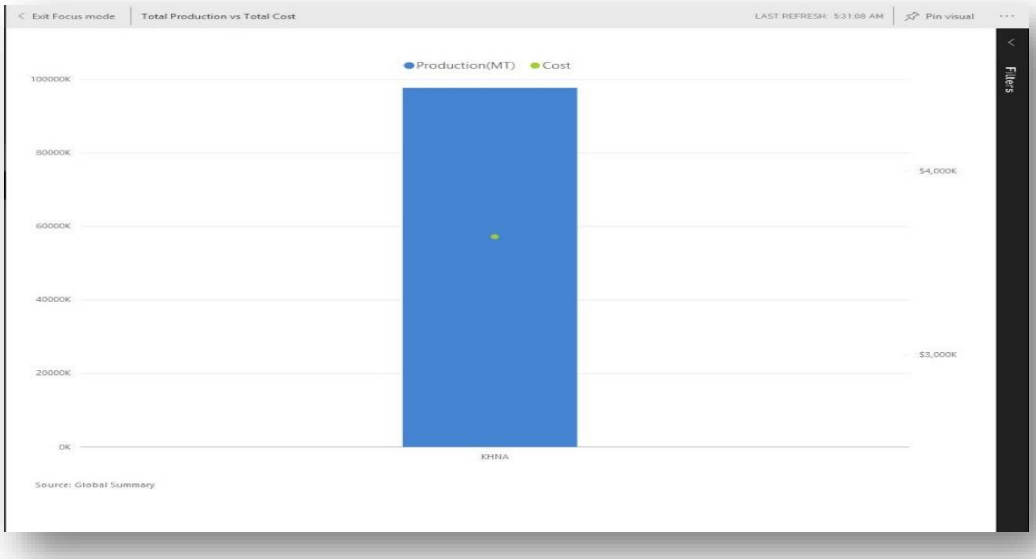
3.1.1 Focus Mode

What is Focus mode?

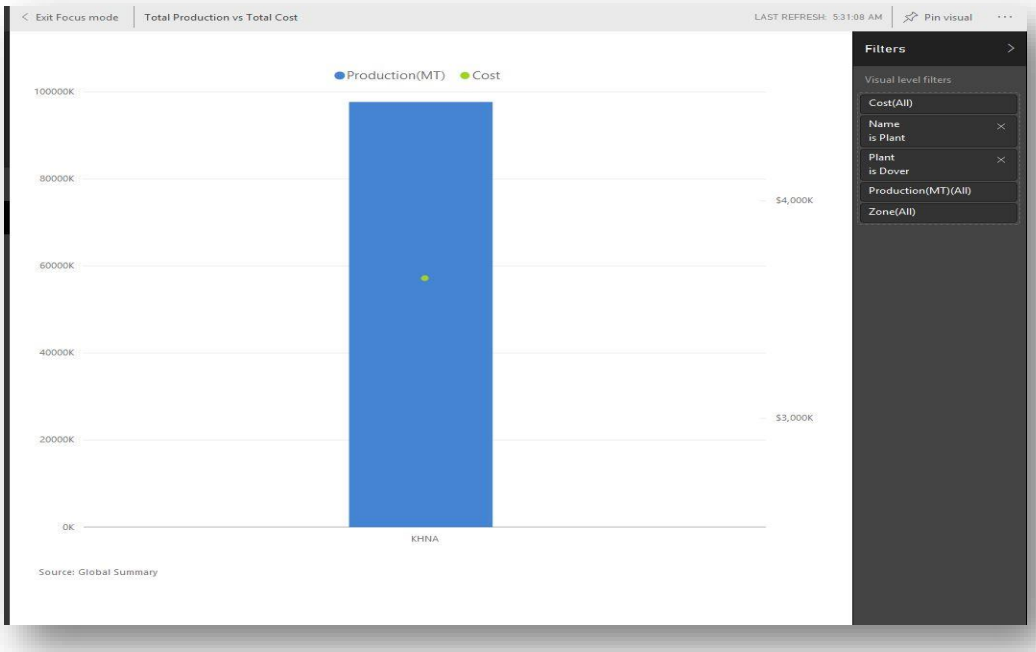
Focus mode lets you expand (pop out) a Global dashboard tile or report visual to see more detail. While in Focus mode for a Global dashboard tile, you can view and modify the filters that were applied when this visual was created. And while in Focus mode for a report visual, you can view and modify the Visual level and Page level filters.

1. Hover over the tile or visual and select the **Focus mode** icon  .

2. It opens and fills the entire canvas.



3. Expand the Filters pane to see all filters applied to this visual.



4. Explore further by modifying the filters and, if you discover something interesting, pin the visual to a dashboard.

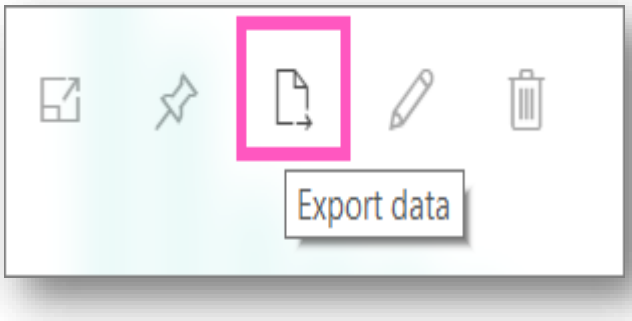
5. Leave Focus mode and return to the dashboard by selecting **< Exit Focus mode** (in the top left corner of the visual).

3.1.2 Export Data

If you'd like to see the data that is used to create a visualization, you can display that data in Power BI or export that data to Excel as an .xlsx or .csv file.

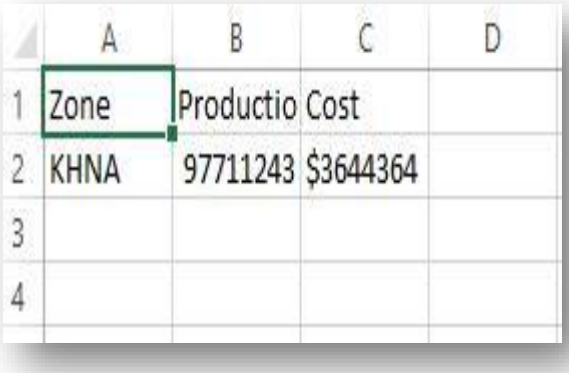
1. Select the ellipses in the top right corner of the visualization.

2. Choose the **Export data** icon.



3. The data is exported to a .csv file. If the visual is filtered, then the downloaded data will also be filtered.

4. Your browser will prompt you to save the file. Once saved, open the .csv file in Excel.



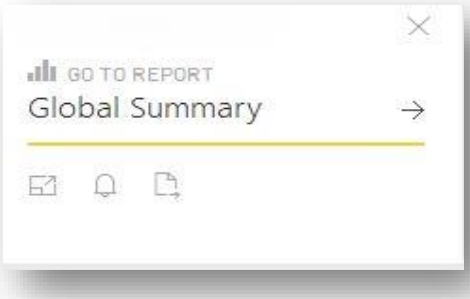
	A	B	C	D
1	Zone	Productio	Cost	
2	KHNA	97711243	$3644364	
3				
4				

3.1.3 Manage Alerts

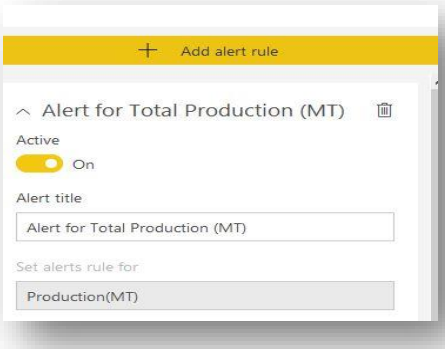
Set alerts to notify you when data in your Global dashboards changes beyond limits you set. Alerts can only be set up on tiles pinned from report visuals (not on streaming tiles), and only on gauges, KPIs and cards. Only you can see the alerts you set, even if you share your Global dashboard. Data alerts are fully synchronized across platforms; set and view data alerts in the Power BI mobile apps and in the Power BI service.

1. Start on a dashboard. From a dashboard gauge, KPI, or card tile, select the ellipses.

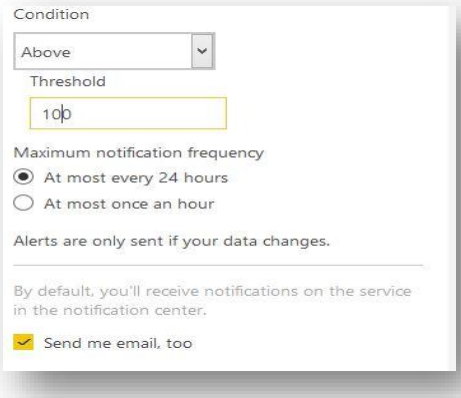
2. Select the bell icon  to add one or more alerts for **Total Production (MT).**



3. To start, ensure the slider is set to **on**, and give your alert a title. Titles help you easily recognize your alerts.



4. Scroll down and enter the alert details. In this example we'll create an alert that notifies us once a day if the number of total stores goes above 100. Alerts will appear in our Notification centres. And we'll have Power BI send us an email as well.



5. Select **Save**.

3.1.4 Ask Question about Our Data

What is Q&A?

Sometimes the fastest way to get an answer from your data, is to ask a question using natural language. For example, "what were total production Current year?" Use Q&A to explore your data using intuitive, natural language capabilities and receive answers in the form of charts and graphs. Q&A is different from a search engine -- Q&A only provides results about the data in Power BI.

4. Global Reports

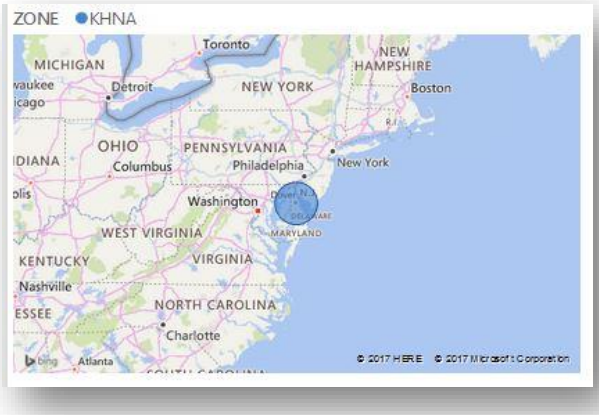
To return to the Global app in Workspace:

- Click the Report, which is in the 2nd top left hand corner.
- In the "Reports" section the user will see the name Global Summary.
- Click on The Name of Your report, which is in the quick links at the top of the screen.

4.1 Global -zone wise Summary

Zone summary report page, we are going to show the plants data zone wise and displaying thorough visualization .This will give the insight the user about energy consumption and production level which will help to understand zone is performing good or bad.

4.1.1 Power BI Map



We are used basic map visualization and is associate with both zone and plant information with spatial locations, above legends are clickable.

4.1.2 Zone Summary Table

Zone	Count Of Plants	Production (Tonn...	Utility Cost (USD)	Performan...
KHNA	3	44,360.90	$2,324,692.00	▲
APAC	9	29,806.00	$767,654.51	▼
HEU	1			▼
RIMEA	3			▼
Total	**16**	**74,166.90**	**$3,092,346.51**	▲

We are used Table visualization and if you have numerical information in a table, such as production, cost, a total sum will appear at the bottom. Last column name is performance here performance is good showing up-arrow and performance is not good showing down-arrow .You can manually sort by each column by clicking on its header to toggle ascending or descending order. If a column is not wide enough to display all of its contents, click and drag the header sideways to expand it. And showing zone wise production and cost.

Performance formula = Sum of Current year Cost by Production –Sum of Base Year Cost by Production **divided by** Sum of Base Year Cost by production

4.1.3 Total Cost and Production

We are used card visualization and showing Total Production and Total Cost Globally.

4.1.4 Total Production vs Total Cost

We are used line and clustered chart visualization. Here we are creates two axes, thus allowing the datasets to be scaled differently; the left measures Total Production and the right measures Total Cost.

4.2 Global -Plant Wise Summary

Plant summary report page, we are going to show the data plant wise and displaying thorough visualization .This will give the insight the user about energy consumption and production level which will help to understand Plants is performing good or bad.

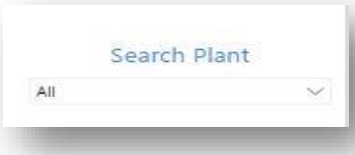
4.2.1 Power BI Map

We are used basic map visualization and is associate with both zone and plant information with spatial locations. Above legends are clickable.

4.2.2 Zonewise Plant Cost and Plant Production

We are used Donut chart visualization and doughnut chart is similar to a pie chart in that it shows the relationship of zone wise plants cost and zone wise plants production. The only difference is that the centre is blank and allows space for a label or icon.

4.2.3 Search Plant



We are used Smart filter visualization and Smart Filter works like an observer, showing the current filters set in the report page, or like a slicer, allowing you to choose plant from a drop-down list or search plants by typing a few letters.

4.2.4 Plant Summary Table

Plant	Production (Tonnes)	Utility Cost (USD)	Electricity (kWh)	Water (M3)	Gas (kWh)	Solidwaste (Tonnes)
Dover	44,360.90	$23,24,692.00	2,14,37,436.00	6,820.00	1,21,175.00	3,742.74
Total	44,360.90	$23,24,692.00	2,14,37,436.00	6,820.00	1,21,175.00	3,742.74

We are used Table visualization and if you have numerical information in a table, such as production, cost, WGES a total sum will appear at the bottom. .You can manually sort by each column by clicking on its header to toggle ascending or descending order. If a column is not wide enough to display all of its contents, click and drag the header sideways to expand it.

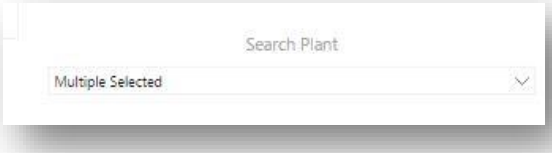
4.3 Plant Comparison

Plant Comparison report page, we are going to comparison between two plants and View Total Energy consumption and production data of Plants

4.3.1 Production Vs Utility Cost

We are used scatter chart visualization always has two value axes to show one set of numerical data along a horizontal axis and another set of numerical values, here we are comparison between production and utility cost.

4.3.2 Search Plant



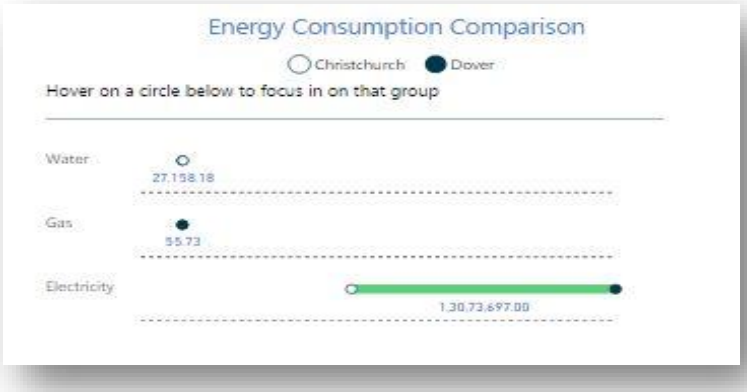
we are used Smart filter visualization and Smart Filter works like an observer, showing the current filters set in the report page, or like a slicer, allowing you to choose plants from a drop-down list or search plants by typing a few letters.

4.3.2 Cost Efficiency Comparison

We are used clustered bar chart visualization. Here we are creates x and y axes, date wise here we comprising the cost efficiency and sort out through plant legend.

Formula=Cost /Production

4.3.4 Energy Consumption Comparison



We are used Gap Analysis chart visualization. Gap Analysis visualization is a visual used to compare the difference aka gap between two plants across WAGES.

4.3.5 Energy Efficiency Comparison

We are used stacked area chart visualization. Here we are creates x and y axes, date wise here we comprising the Energy efficiency and sort out through plant legend.

Formula=Consumption/Production

4.4 Utility Monitoring

Utility monitoring report page, this report will help to understand efficiency improvement of utilities compared to base year.

4.4.1 Production

We are used Table visualization and if you have numerical information in a table, such as current production, Base production, Difference a total sum will appear at the bottom. First column name is zone and its showing list of zones. Second column name is current production here current year data is showing and third column name is base production here base year data is showing and last column name is Difference here we are showing differentiate between current and base through percentage

Difference Formula=Current (Tonnes)-Base (Tonnes) **divided by** Base (Tonnes)

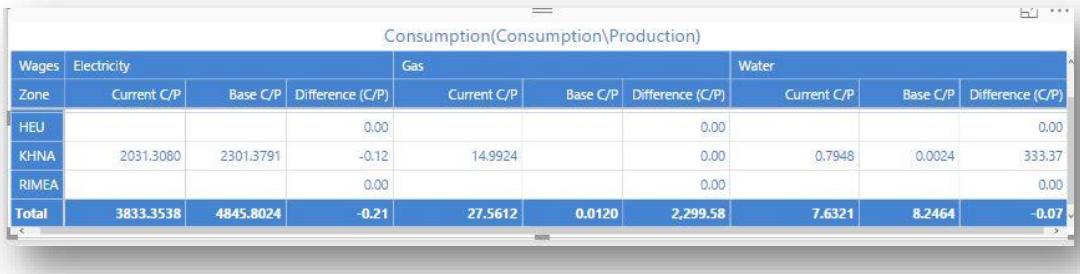
4.4.2 Solid waste

We are used Table visualization and if you have numerical information in a table, such as current solid waste, Base solid waste, Difference a total sum will appear at the bottom. First column name is zone and its showing list of zones. Second column name is current solid waste here current year data is showing and third column name is base solid waste here base year data is showing and last column name is Difference here we are showing differentiate between current and base through percentage

Current solid waste=solid waste (T)/Production (T)
Base solid waste=solid waste (T)/Production (T)

Difference Formula=Current solid waste (T/T)-Base solid waste (T/T) **divided by** Base solid waste (T/T)

4.4.3 Consumption



Consumption(Consumption\Production)

Wages	Electricity			Gas			Water		
Zone	Current C/P	Base C/P	Difference (C/P)	Current C/P	Base C/P	Difference (C/P)	Current C/P	Base C/P	Difference (C/P)
HEU			0.00			0.00			0.00
KHNA	2031.3080	2301.3791	-0.12	14.9924		0.00	0.7948	0.0024	333.37
RIMEA			0.00			0.00			0.00
Total	**3833.3538**	**4845.8024**	**-0.21**	**27.5612**	**0.0120**	**2,299.58**	**7.6321**	**8.2464**	**-0.07**

We are used Table visualization and if you have numerical information in a table, such as current consumption, Base consumption, Difference a total sum will appear at the bottom.
First row is differences wages type, First column name is zone and its showing list of zones. Second column name is current consumption here current year data is showing and third column name is base consumption here base year data is showing and last column name is Difference here we are showing differentiate between current and base through percentage

Current consumption= consumption/Production
Base consumption= consumption/ Production

Difference Formula= Current consumption - Base consumption **divided by** Base consumption

4.4.4 Zonewise Consumption

We are used line chart visualization. Here we are creates x and y axes, here we are comparing consumption date wise and sort out through WAGES legend.

4.4.5 Efficiency improvement compared to base year

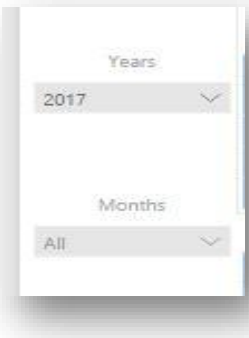
EFFICIENCY IMPROVEMENT COMPARED TO BASE YEAR

DATEID	EFFICIENCY IMPROVEMENT COMPARED TO BASE YEAR
01-06-2017	538.12
01-05-2017	205.22
01-04-2017	384.33

We are used Table Visualization and here showing last three months efficiency improvement compared to base year thorough percentage. For data we are adding total difference of Solid waste, electricity, water and gas and divided by 4 after that we can take the percentage values.

Formula=sum (Difference solid waste) +sum (Difference electricity) +sum (Difference water) +sum (Difference gas) **divided by 4**

4.4.6 Years & Months



We are used dropdown slicer visulaization.In this dropdown slicer we are showing years and months.

4.5 Utility Budget

Utility budget report page, this report will help to understand cost efficiency improvement of utilities compared to base year.

4.5.1 Production

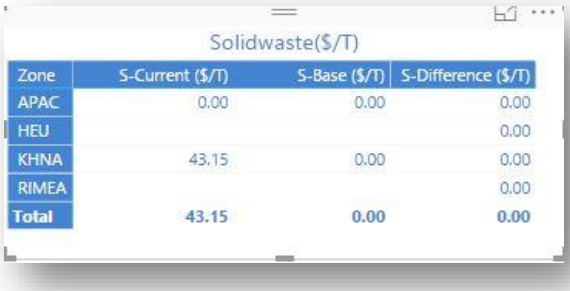
Production(Tonnes)

Zone	Current (Tonnes)	Base (Tonn...	Difference (production)
APAC	29,806.00	24,302.00	0.23
HEU			0.00
KHNA	44,360.90	60,366.68	-0.27
RIMEA			0.00
Total	**74,166.90**	**84,668.68**	**-0.12**

We are used Table visualization and if you have numerical information in a table, such as current production, Base production, Difference a total sum will appear at the bottom. First column name is zone and its showing list of zones. Second column name is current production here current year data is showing and third column name is base production here base year data is showing and last column name is Difference here we are showing differentiate between current and base through percentage

Difference Formula=Current (Tonnes)-Base (Tonnes) **divided by** Base (Tonnes)

4.5.2 Solid waste



Solidwaste($/T)

Zone	S-Current ($/T)	S-Base ($/T)	S-Difference ($/T)
APAC	0.00	0.00	0.00
HEU			0.00
KHNA	43.15	0.00	0.00
RIMEA			0.00
Total	**43.15**	**0.00**	**0.00**

We are used Table visualization and if you have numerical information in a table, such as current solid waste, Base solid waste, Difference a total sum will appear at the bottom. First column name is zone and its showing list of zones. Second column name is current solid waste here current year data is showing and third column name is base solid waste here base year data is showing and last column name is Difference here we are showing differentiate between current and base through percentage

Current solid waste=solid waste cost ($)/Production (T)
Base solid waste=solid waste cost (T)/Production (T)

Difference Formula=Current solid waste ($/T)-Base solid waste ($/T) **divided by** Base solid waste ($/T)

4.5.3 Consumption

Consumption($/T)

Wages	Electricity			Gas			Water		
Zone	Current $/T	Base $/T	Difference ($/T)	Current $/T	Base $/T	Difference ($/T)	Current $/T	Base $/T	Difference ($/T)
APAC	117.62	224.82	-0.48	68.43	70.64	-0.03	0.00	0.00	0.00
HEU			0.00			0.00			0.00
KHNA	153.75	0.00	0.00	27.79		0.00	2.39	0.00	0.00
RIMEA			0.00			0.00			0.00
Total	**271.37**	**224.82**	**0.21**	**96.22**	**70.64**	**0.36**	**2.39**	**0.00**	**0.00**

We are used Table visualization and if you have numerical information in a table, such as current consumption, Base consumption, Difference a total sum will appear at the bottom.

First row is differences wages type, First column name is zone and its showing list of zones. Second column name is current consumption here current year data is showing and third column name is base consumption here base year data is showing and last column name is Difference here we are showing differentiate between current and base through percentage

Current consumption= consumption cost ($)/Production (T) Base consumption= consumption cost ($)/Production (T)

Difference Formula= Current consumption ($/T) - Base consumption ($/T) **divided by** Base consumption ($/T)

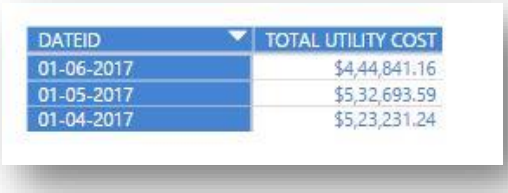
4.5.4 Cost Efficiency

DATEID	COST EFFICIENCY
01-06-2017	$20.10
01-05-2017	$85.56
01-04-2017	$101.92

We are used Table Visualization and here showing last three months cost efficiency. For data we are adding current year cost of Solid waste, electricity, water and gas.

Formula=sum (Current solid waste) +sum (Current electricity) +sum (Current water) +sum (Current gas)

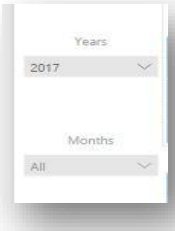
4.5.5 Total Utility Cost



DATEID	TOTAL UTILITY COST
01-06-2017	$4,44,841.16
01-05-2017	$5,32,693.59
01-04-2017	$5,23,231.24

We are used Table Visualization and here showing last three months current utility cost.

4.5.6 Years & Months

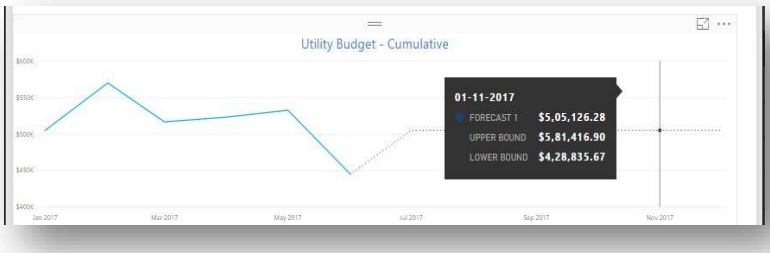


We are used dropdown slicer visualization, this dropdown slicer we are showing years And months.

4.6 Utility Budget Charts

Utility budget charts report page, this report will help to understand cost efficiency improvement of utilities.

4.6.1Utility Budget – Cumulative



We are used line line chart visualization. Here we are creates x and y axes, date wise here we comprising the Utility Budget cumulative and generate forecasts for next six months.

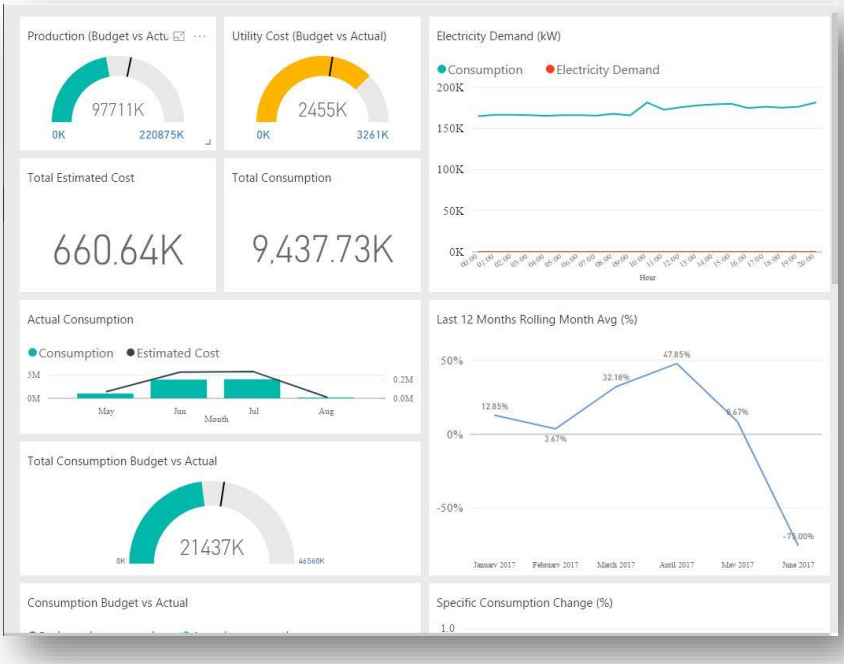
4.6.2 Consumption wise Specific Utility Cost

We are used line line and clustered column chart visualization. Here we are creates x and y axes, in consumption wise we are comprising the Specific Utility cost and sort out through zone.

4.6.3 Specific Utility Cost

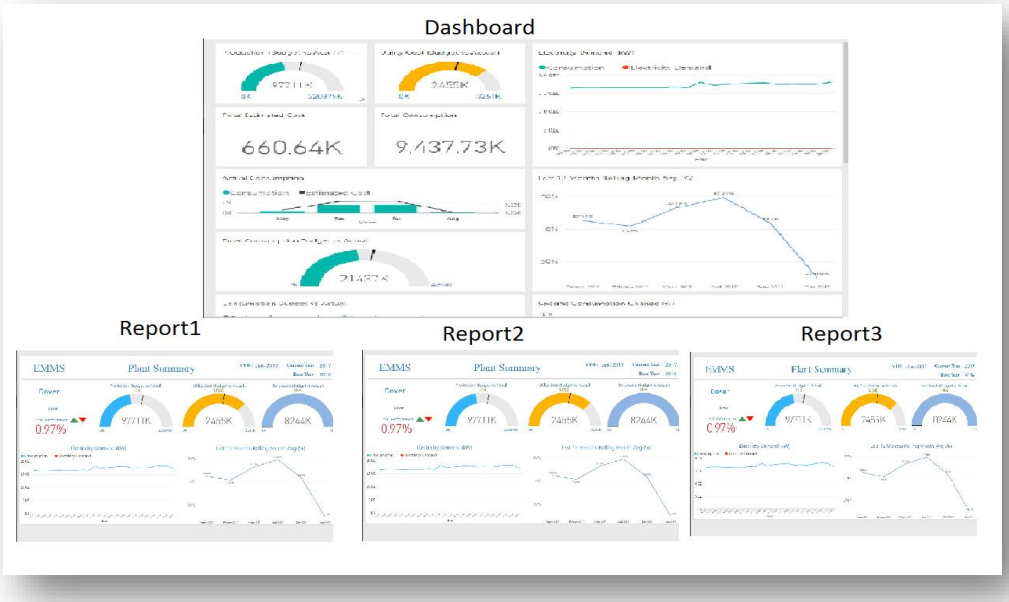
We are used line line and clustered column chart visualization. Here we are creates x and y axes, date wise we are comprising the Specific Utility cost and sort out through zone.

5 Plant Dashboard

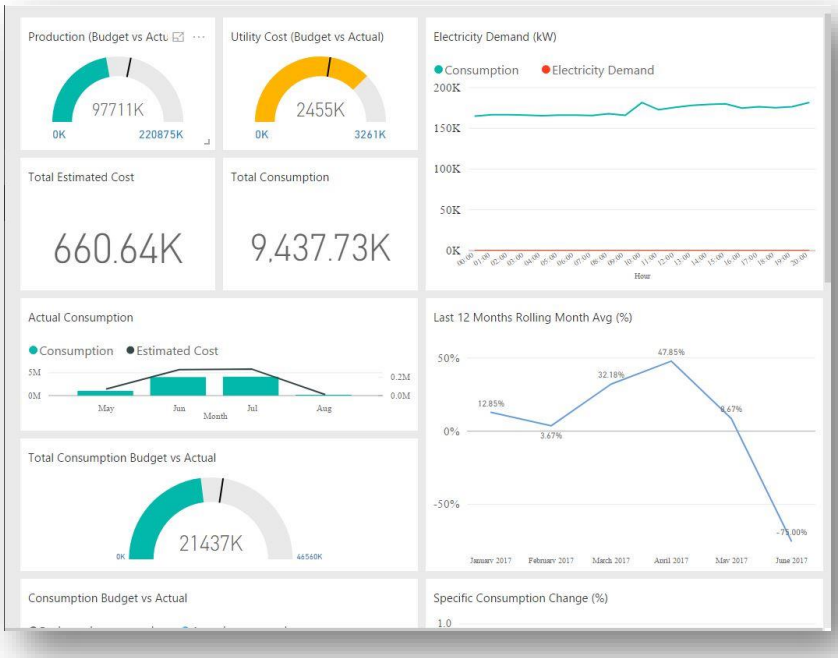


The visualizations you see on the Plant dashboard are called *tiles* and are *pinned* to the dashboard from Plant reports.

The visualizations on a Plant dashboard come from Plant reports and each report is based on Plant dataset. In fact, one way to think of a Plant dashboard is as an entryway into the underlying Plant reports and datasets. Selecting a visualization takes you to the Plant report (and dataset) that was used to create it.



5.1 Global Dashboard Tiles



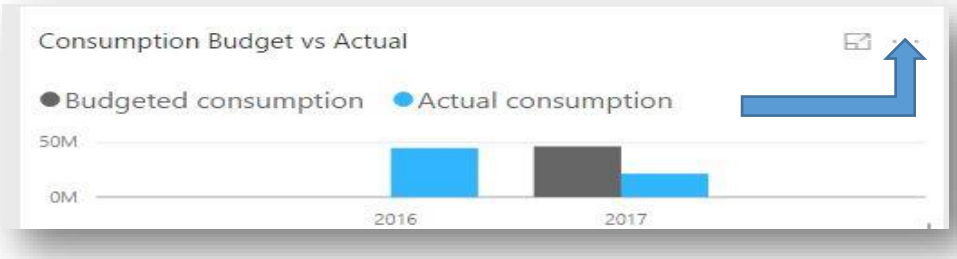
A tile is a snapshot of our data, pinned to the Plant dashboard. A tile can be created from a report, dataset, dashboard, from the Azure SQL Database. This screenshot shows many different tiles pinned to a Plant dashboard.

5.1.1 Focus Mode

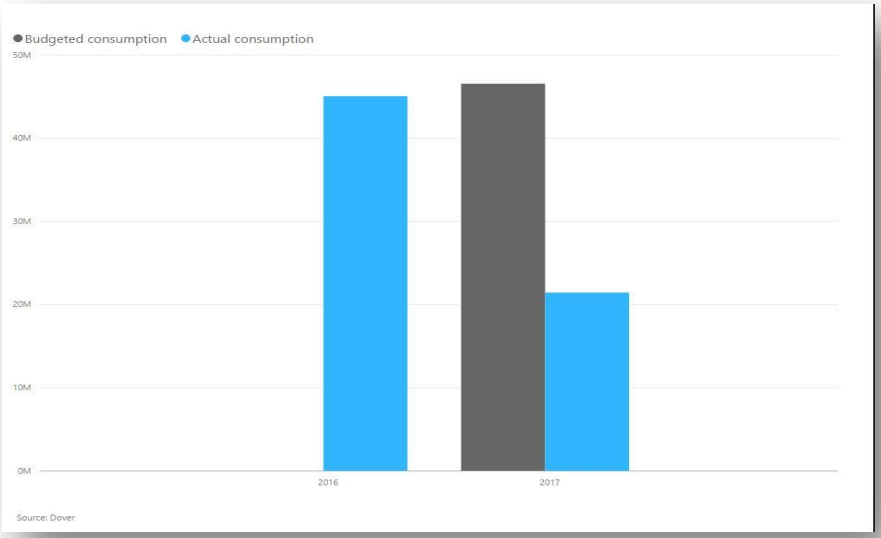
What is Focus mode?

Focus mode lets you expand (pop out) a Plant dashboard tile or report visual to see more detail. While in Focus mode for a Plant dashboard tile, you can view and modify the filters that were applied when this visual was created. And while in Focus mode for a report visual, you can view and modify the Visual level and Page level filters.

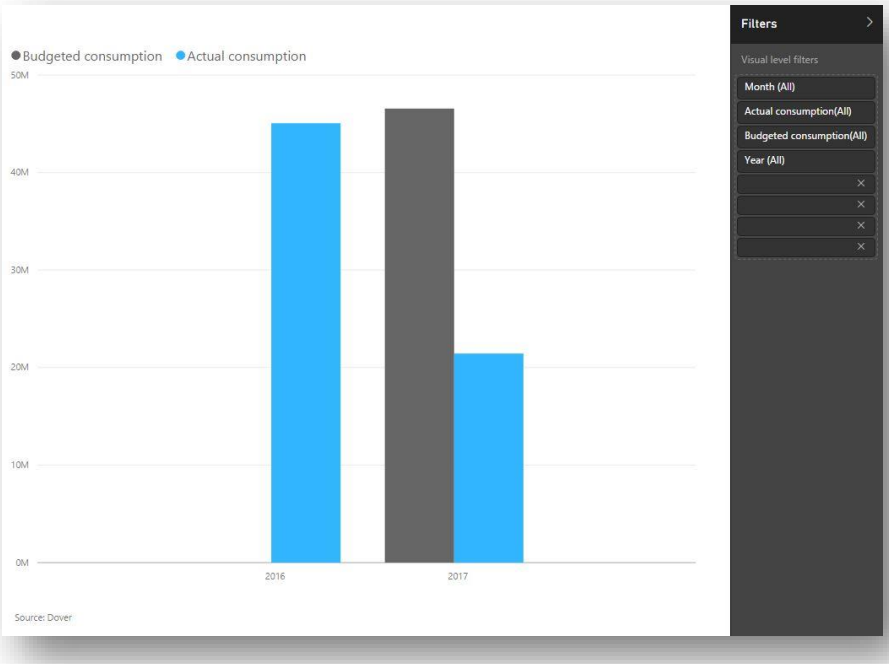
1. Hover over the tile or visual and select the **Focus mode** icon  .



2. It opens and fills the entire canvas.



3. Expand the Filters pane to see all filters applied to this visual.



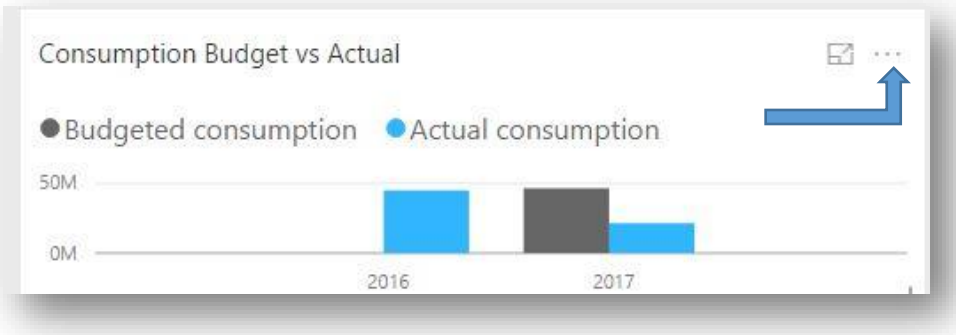
4. Explore further by modifying the filters and, if you discover something interesting, pin the visual to a dashboard.

5. Leave Focus mode and return to the dashboard by selecting **< Exit Focus mode** (in the top left corner of the visual).

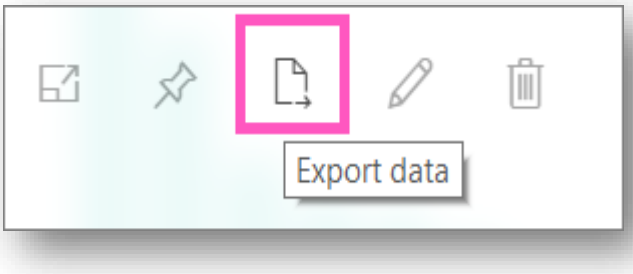
5.1.2 Export Data

If you'd like to see the data that is used to create a visualization, you can display that data in Power BI or export that data to Excel as an .xlsx or .csv file.

1. Select the ellipses in the top right corner of the visualization.



2. Choose the **Export data** icon.



3. The data is exported to a .csv file. If the visual is filtered, then the downloaded data will also be filtered.

4. Your browser will prompt you to save the file. Once saved, open the .csv file in Excel.

	Year	Month	Budgeted	Actual consumption
2	2016	Jan	0	3105131
3	2016	Feb	0	3694990
4	2016	Mar	0	3910808
5	2016	Apr	0	3765103
6	2016	May	0	3767627
7	2016	Jun	0	3939903
8	2016	Jul	0	3789361
9	2016	Aug	0	4287906
10	2016	Sep	0	3815214
11	2016	Oct	0	3775860
12	2016	Nov	0	3908332
13	2016	Dec	0	3294107
14	2017	Jan	5228751	2967621
15	2017	Feb	4217253	3737615
16	2017	Mar	4256375	3389637
17	2017	Apr	4577115	3471122
18	2017	May	3661423	3722026
19	2017	Jun	3581638	4149415
20	2017	Jul	3933218	0
21	2017	Aug	3164367	0
22	2017	Sep	3262215	0
23	2017	Oct	4149491	0
24	2017	Nov	3315370	0
25	2017	Dec	3213272	0

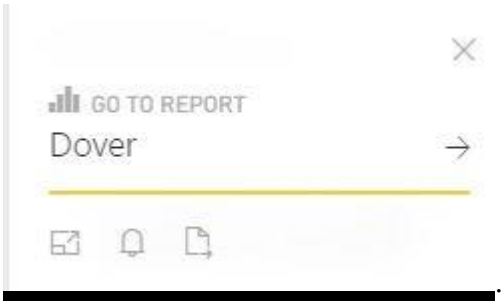
5.1.3 Manage Alerts

Set alerts to notify you when data in your Plant dashboards changes beyond limits you set. Alerts can only be set up on tiles pinned from report visuals (not on streaming tiles), and only on gauges, KPIs and cards. Only you can see the alerts you set, even if you share your Plant dashboard. Data alerts are fully synchronized across platforms; set and view data alerts in the Power BI mobile apps and in the Power BI service.

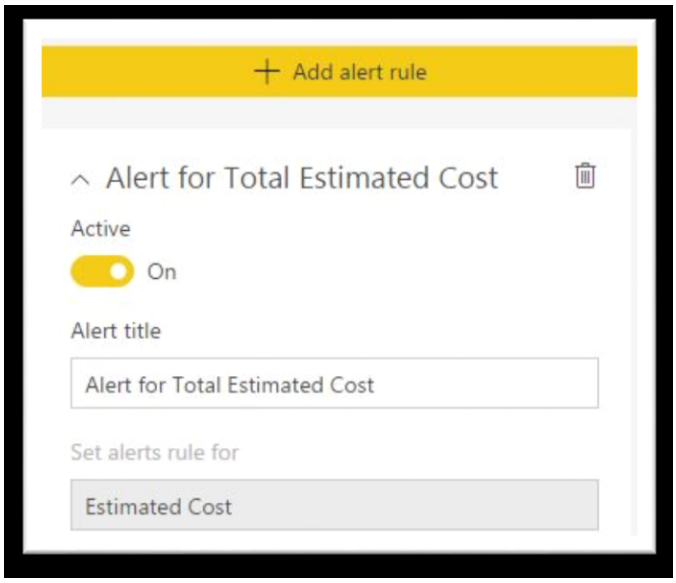
1. Start on a dashboard. From a dashboard gauge, KPI, or card tile, select the ellipses.

1.

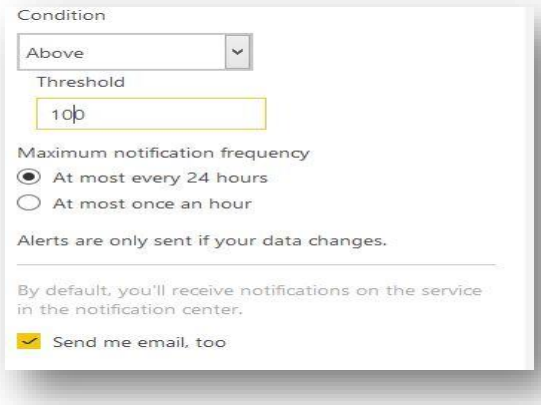
2. Select the bell icon  to add one or more alerts for **Total Estimated Cost.**



3. To start, ensure the slider is set to **on**, and give your alert a title. Titles help you easily recognize your alerts.



4. Scroll down and enter the alert details. In this example we'll create an alert that notifies us once a day if the number of total stores goes above 100. Alerts will appear in our Notification centres. And we'll have Power BI send us an email as well.



5. Select **Save**.

5.1.4 Ask Question about Our Data

What is Q&A?

Sometimes the fastest way to get an answer from your data, is to ask a question using natural language. For example, "what were total consumption Current year?" Use Q&A to explore your data using intuitive, natural language capabilities and receive answers in the form of charts and graphs. Q&A is different from a search engine -- Q&A only provides results about the data in Power BI.

6. Plant Reports

To return to the Plant app in Workspace:

- Click the Report, which is in the 2nd top left hand corner.
- In the "Reports" section the user will see the name Dover report.
- Click on The Name of Your report, which is in the quick links at the top of the screen.

6.1 Drill down in a visualization

When a visual has a hierarchy, you can drill down to reveal additional details. For example, you might have a visualization that looks at Olympic medal count by a hierarchy made up of sport, discipline, and event. By default, the visualization would show medal count by sport -- gymnastics, skiing, aquatics, etc. But because it has a hierarchy, selecting one of the visual elements (such as a bar, line, or bubble), would display an increasingly more-detailed picture. Select the **aquatics** element to see data for swimming, diving, and water polo. Select the **diving** element to see details for springboard, platform, and synchronized diving events.

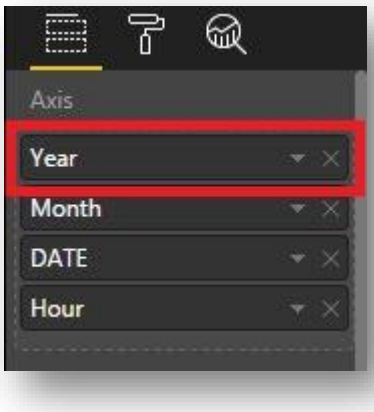
You can add hierarchies to reports you own but not to those shared with you. Not sure which Power BI visualizations contain a hierarchy? Hover over a visualization and if you see these drill controls in the top corners, your visualization has a hierarchy.

6.1.1 Method for drill down

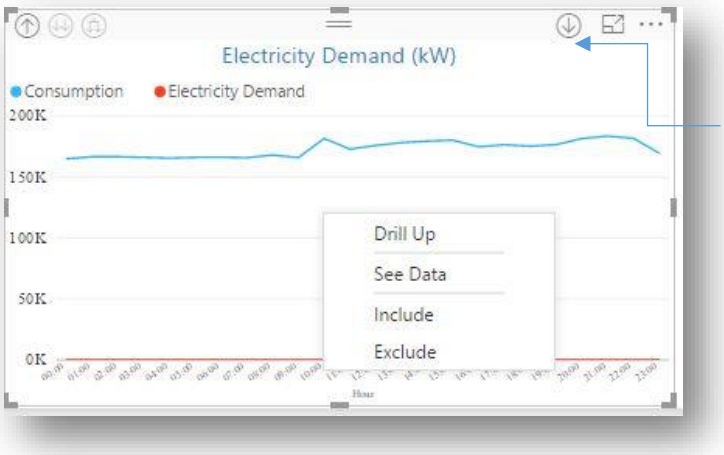
This method uses the drill icons that appear in the top corners of the visualization itself.

1. In Power BI, open a report in Drill requires a visualization with a hierarchy.

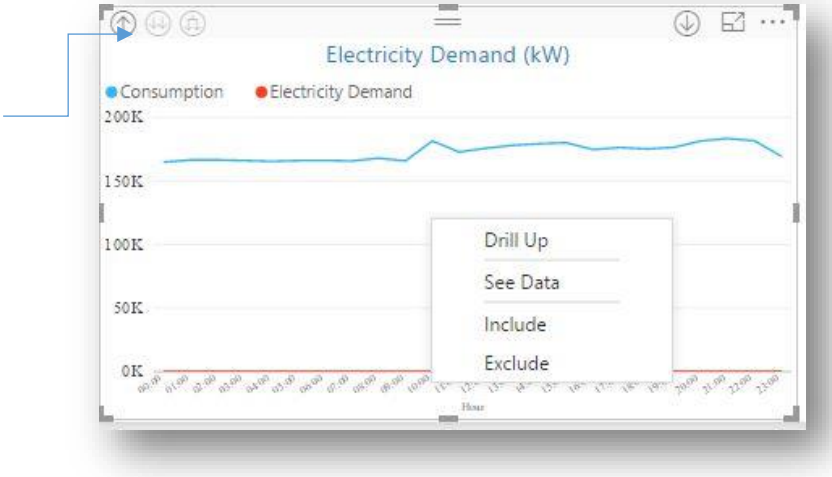
   A hierarchy is shown in the animation below. The visualization has a hierarchy made up of year, month, date and hour. Each year has one or more month, each date has one or more hours. By default, the visualization displays only the year data, because *years* appears first in the list.



2. To enable drill down, select the arrow icon in the top right corner of the visualization. When the icon is dark, drill is enabled. If you don't turn on drill, selecting a visual element (such as a bar or bubble) will cross-filter the other charts on the report page.



3. To drill down ***one field at a time***, click one of the elements in your visualization, in a bar chart this means clicking one of the bars and in a tree map, this means clicking one of the *leaves*. Notice that the title changes as you drill down and back up again. Drill back up, select the **Drill Up** icon  in the top left corner of the visualization as shown below.



4. To drill down ***all fields at once***, select the double arrow in the top left corner of the visualization.

5. To drill back up, select the up arrow in the top left corner of the visualization.

6.2 Plant Summary

Plant summary report page, we are going to show the particular plant data and displaying thorough visualization. This will give the insight the user about Electricity Demand and Rolling Month Avg and user can see the budgeted vs actual value of production, utility cost, solid waste and it will help to understand Year to Date is performance.

6.2.1 Production (Budgeted vs Actual)

We are used Gauge chart visualization, in the example above, we are comparing actual vs budgeted vs YTD. YTD is represented by the black needle. The minimum possible average budgeted is 0 and we've set the maximums as per our data. The blue shading shows that is actual production.

6.2.2 Utility Cost (Budgeted vs Actual)

We are used Gauge chart visualization, in the example above, we are comparing actual vs budgeted vs YTD. YTD is represented by the black needle. The minimum possible average budgeted is 0 and we've set the maximums as per our data. The yellow shading shows that is actual Utility Cost.

6.2.3 Solid Waste (Budgeted vs Actual)

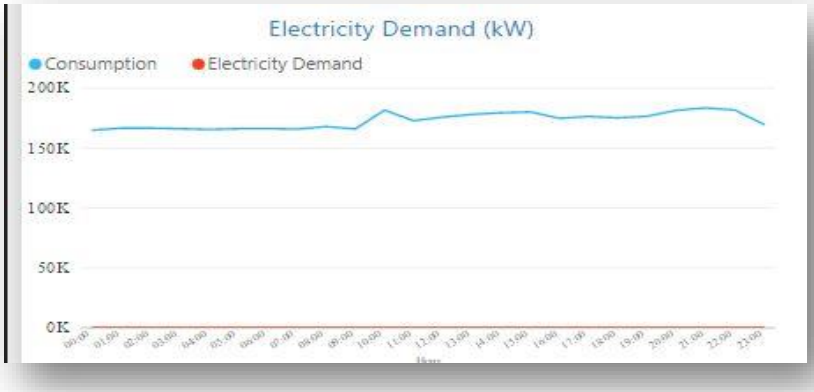
We are used Gauge chart visualization, in the example above, we are comparing actual vs budgeted vs YTD. YTD is represented by the black needle. The minimum possible average budgeted is 0 and we've set the maximums as per our data. The blue shading shows that is actual Solid waste.

6.2.4 YTD Performance

We are used KPI visualization, in the example above, we are showing our plant Year to Date performance .Performance is good showing green colour and performance is not good showing red colour.

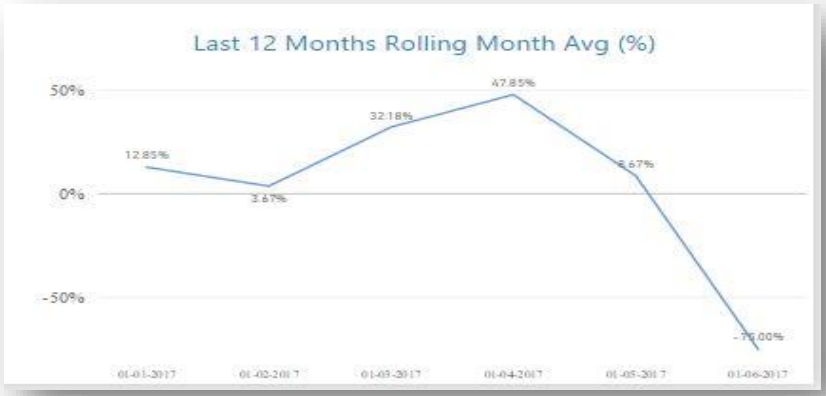
Performance Formula= (Base YTD (consumption/production) - Current YTD (consumption/production)) /Base YTD (consumption/production))

6.2.5 Electricity Demand (Kw)



We are used line chart visualization. Here we are creates x and y axes, here we are comparing consumption through time series date wise and user set the electricity demand as a target. This line chart visualization drill down option is available for more information reference 6.1 table of contents.

6.2.6 Rolling Month Avg (%)



We are used line chart visualization. Here we are creates x and y axes, here we are displaying last 12 month rolling month avg data through time series date wise This line chart visualization drill down option is available for more information reference 6.1 table of contents

Rolling Month AVG formula = Average (All ((Base year Wages consumption/Base year production)-(current year Wages consumption/current year production)) / (base year Wages consumption/base year production)

Note: Only include - electricity, thermal fuel, water and solid waste, +ve number means less consumption/cost, -ve number means extra consumption/cost.

6.3 Energy Efficiency

Energy efficiency report page, we are going to show the energy efficiency data and filtering thorough Chiclet slicer visualization. This report will give the insight the user about Actual Specific Consumption and Base Specific Consumption and user can see the Specific Consumption change through percentage and graph and it will help to see the department and plant wise data through tree hierarchy visualization.

6.3.1 WAGES

We are used Chiclet slicer chart visualization. Here filtering the data through WAGES.

6.3.2 Specific Consumption

We are used line chart visualization. Here we are creates x and y axes, here we are comparing Specific consumption through date wise and sort out YTD Actual and Base. This line chart visualization drill down option is available for more information reference 6.1 table of contents.

Formulas

Specific consumption base YTD= base year consumption / base year production
Specific consumption Actual YTD= YTD consumption / YTD production

6.3.3 Specific Consumption Change (%)

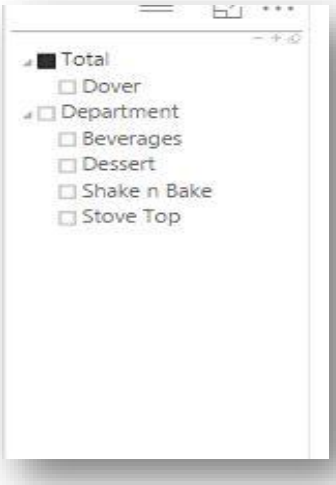
This visualization is card and here am showing specific consumption change in percentage value.

This visualization is line chart and here we are creates x and y axes, here we are comparing Specific consumption change through date wise. This line chart visualization drill down option is available, for more information reference 6.1 table of contents.

Formulas

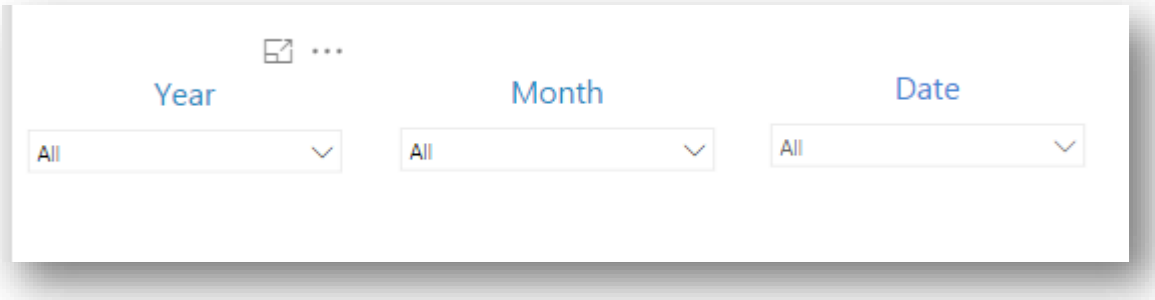
Specific consumption base YTD= base year consumption / base year production
Specific consumption Actual YTD= YTD consumption / YTD production
Specific consumption percentage change= (Specific consumption base YTD - Specific consumption current YTD)/ (specific consumption base YTD)

6.3.4 Department and Plant Hierarchy



This visualization is hierarchy slicer and here you can filter your data through department and plant wise.

6.3.5 Months



We are used dropdown slicer visualization this dropdown slicer we are showing Years, months and date.

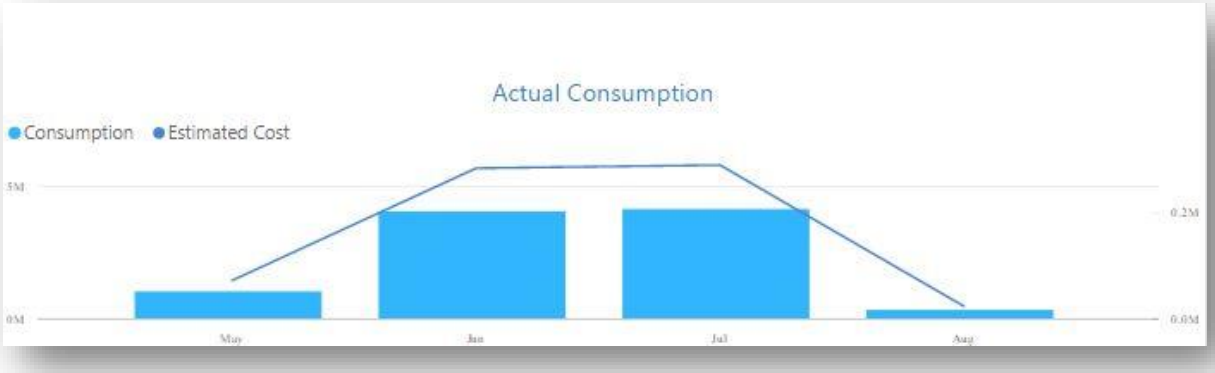
6.4 Utility-Consumption and cost

Utility consumption and cost page, we are going to show the utility consumption and cost data and filtering thorough Chiclet slicer visualization. This report will give the insight the user about Total Consumption and Total estimate cost and user can see the Actual Consumption also and it will help to see the department and plant wise data through tree hierarchy visualization.

6.4.1 Total Consumption and Total Estimated Cost

We are used card visualization and showing Total Consumption and Total Cost Globally.

6.4.2 Actual Consumption



We are used line and clustered chart visualization. Here we are creates two axes, thus allowing the datasets to be scaled differently; the left measures Total Consumption and the right measures Total Estimated Cost.

6.5 Budgeted Vs Actual

Budgeted Vs Actual page, we are going to show the Budget Vs Actual consumption and cost data and filtering thorough Chiclet slicer visualization. This report will give the insight the user about Total Consumption Budgeted vs Actual and Total cost Budgeted vs Actual and user can see the Budget Vs Actual Consumption and cost also and it will help to see the department and plant wise data through tree hierarchy visualization.

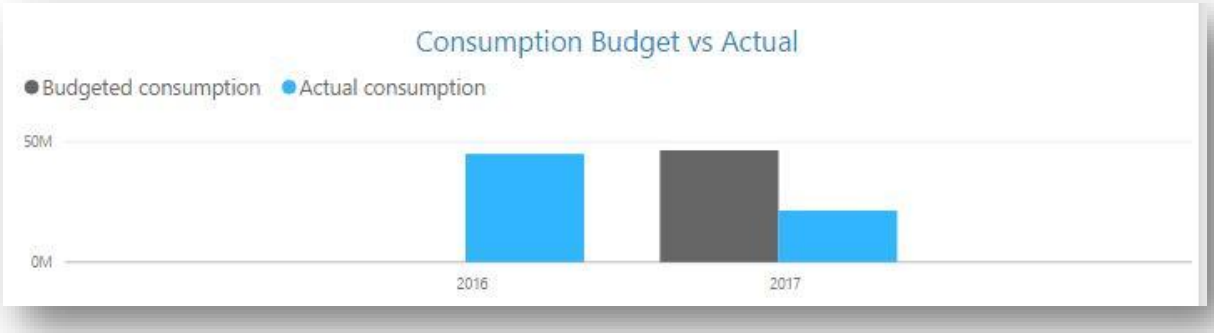
6.5.1 Total Consumption Budget vs Actual

We are used Gauge chart visualization, in the example above, we are comparing actual vs budgeted vs YTD. YTD is represented by the black needle. The minimum possible average budgeted is 0 and we've set the maximums as per our data. The blue shading shows that is actual consumption.

6.5.2 Total Cost Budget vs Actual

We are used Gauge chart visualization, in the example above, we are comparing actual vs budgeted vs YTD. YTD is represented by the black needle. The minimum possible average budgeted is 0 and we've set the maximums as per our data. The green shading shows that is actual cost.

6.5.3 Consumption Budget vs Actual



We are used Clustered Column chart visualization. Here we are creates x and y axes, and here we are displaying consumption budget vs actual in date wise and sort out through Actual and Budget Consumption legend.

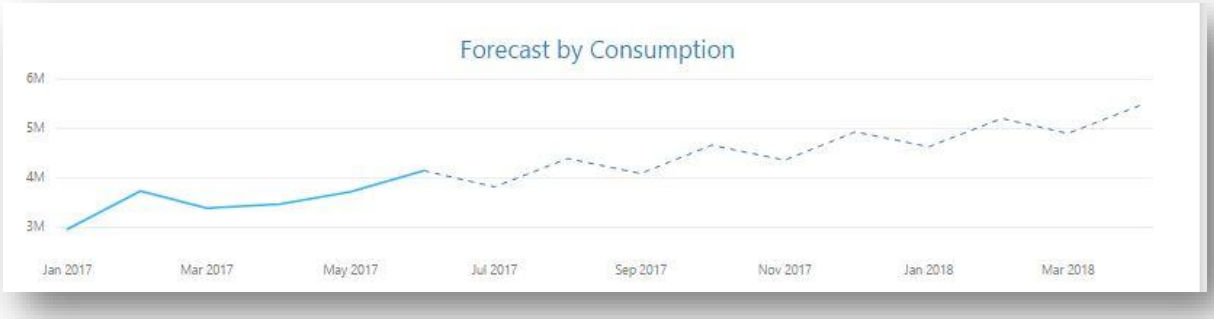
6.5.4 Cost Budget vs Actual

We are used Clustered Column chart visualization. Here we are creates x and y axes, here we are displaying consumption budget vs actual in date wise and sort out through Actual and Budget Consumption legend.

6.6 Forecast

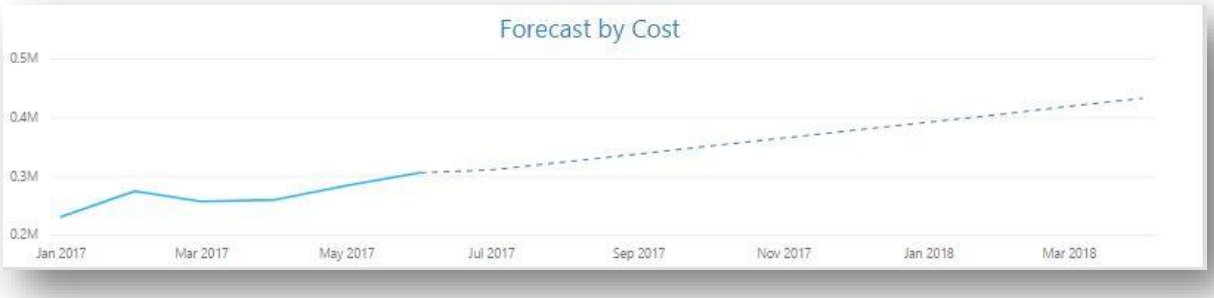
Forecast page, we are going to show the Forecast consumption and cost data and filtering thorough Chiclet slicer visualization. This report will give the insight the user about Forecast Consumption and Forecast cost and it will help to see the department and plant wise data through tree hierarchy visualization.

6.6.1 Forecast by Consumption



We are used line chart visualization. Here we are creates x and y axes, date wise here we displaying the Consumption and generate forecasts for next 12 months.

6.6.2 Forecast by Cost



We are used line chart visualization. Here we are creates x and y axes, date wise here we displaying the Cost and generate forecasts for next 12 months

6.7 Boiler Performance

Boiler performance page, we are going to show the boiler performance steam and fuel. This report will give the insight the user about Combustion Efficiency Steam to Fuel Ratio and Condensate Return Efficiency and user can see the Total steam and Total fuel generated also and it will help to see the department and plant wise data through tree hierarchy visualization.

6.7.1 Combustion Efficiency Steam to Fuel Ratio

This visualization is line chart and here we are creates x and y axes, here we are displaying Combustion Efficiency Steam to Fuel Ratio through year wise. This line chart visualization drill down option is available, for more information reference 6.1 table of contents.

6.7.2 Condensate Return Efficiency

This visualization is line chart and here we are creates x and y axes, here we are displaying Condensate return efficiency through month wise. This line chart visualization drill down option is available, for more information reference 6.1 table of contents

6.7.3 Total Steam Generated

This visualization is line chart and here we are creates x and y axes, here we are displaying total steam generated through year wise. This line chart visualization drill down option is available, for more information reference 6.1 table of content.

6.7.4 Total Fuel Consumed

This visualization is line chart and here we are creates x and y axes, here we are displaying total fuel consumed through month wise. This line chart visualization drill down option is available, for more information reference 6.1 table of content.

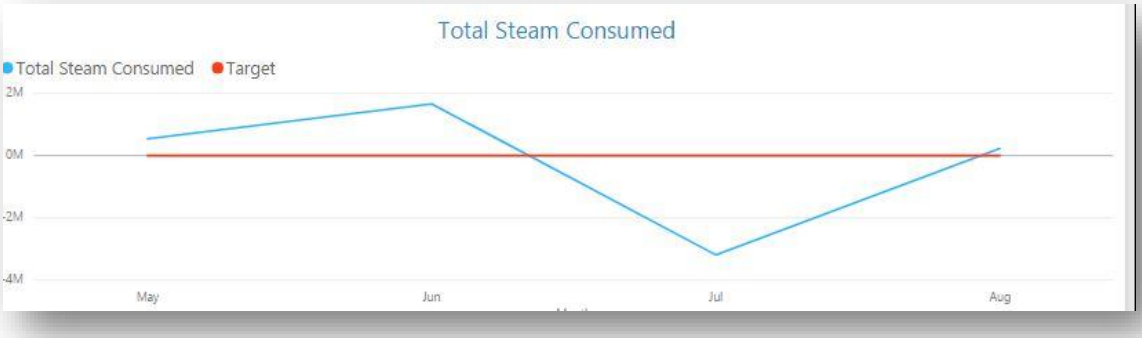
6.8 Dryer Performance

Dryer performance page, we are going to show the dryer performance specific steam consumption and total steam. This report will give the insight the user about specific steam consumption and total steam generated and it will help to see the department and plant wise data through tree hierarchy visualization.

6.8.1 Specific steam consumption

This visualization is line chart and here we are creates x and y axes, here we are specific steam consumption through year wise. This line chart visualization drill down option is available, for more information reference 6.1 table of content.

6.8.2 Total Steam Generated



This visualization is line chart and here we are creates x and y axes, here we are displaying total steam generated through month wise. This line chart visualization drill down option is available, for more information reference 6.1 table of content.

6.9 Air Compressor Performance

Air compressor page, we are going to show the compressed air flow and consumption. This report will give the insight the user about compressed air flow and electricity consumption and user can see the specific power consumption also and it will help to see the department and plant wise data through tree hierarchy visualization.

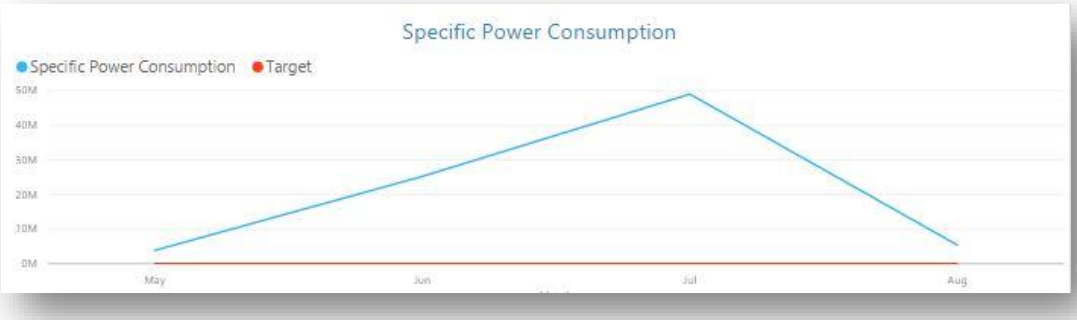
6.9.1 Compressed Air Flow

We are used Clustered Column chart visualization. Here we are creates x and y axes, here we are displaying compressed air flow in year wise and this clustered column chart visualization drill down option is available, for more information reference 6.1 table of content.

6.9.2 Electrcity Consumption

This visualization is line chart and here we are creates x and y axes, here we are displaying electricity consumption through month wise. This line chart visualization drill down option is available, for more information reference 6.1 table of content.

6.9.3 Specific Power Consumption



This visualization is line chart and here we are creates x and y axes, here we are displaying specific power consumption through month wise. This line chart visualization drill down option is available, for more information reference 6.1 table of content.

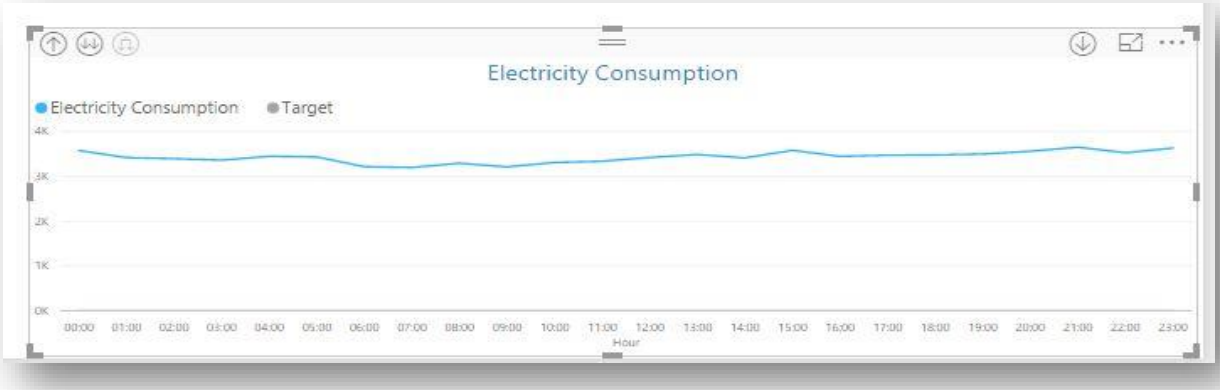
6.10 Chiller Performance

Chiller Performance page, we are going to show the coefficient of performance and electricity consumption. This report will give the insight the user about coefficient of performance and electricity consumption and it will help to see the department and plant wise data through tree hierarchy visualization.

6.10.1 Coefficient of Performance

We are used Clustered Column chart visualization. Here we are creates x and y axes, here we are displaying coefficient of performance in year wise and this clustered column chart visualization drill down option is available, for more information reference 6.1 table of content.

6.10.2 Electricity Consumption



This visualization is line chart and here we are creates x and y axes, here we are displaying electricity consumption through our time series date wise. This line chart visualization drill down option is available, for more information reference 6.1 table of content.