Southern Water Corporation

Solving an Organization's problem with Data Analytics

"This project analyzed financial and Production data over a period of time to be able to describe the corporation's financial health and identify cost effective operations"

Problem Statement Worksheet (Hypothesis Formation)

How will Southern Water Corporation maximize the availability of it's desalination plants to meet increased demand from agricultural and residential usage through strategic overview of her business financial health from year to date.

1 Context

Southern Water Corporation is one of the largest desalination plants in Israel. It retails fresh desalination water for residential, public and private consumption.

Having witnessed a surge in demand from customers, she is taking a strategic overview of the business financial heath to determine the impact that scaling up to meet this demand is having on EBITDA.

2 Criteria for success

- **A high level slide that aggregates revenues, production cost and overheads and their impact on EBITDA**
- **Year to date Variance Analysis highlighting sizeable discrepancies between actual and budget figures**
- **Highlight plant cost effectiveness vis-a-vis weighted market price**

3 Scope of solution space

Focus on financials, taking into account revenues, production costs, and the associated impact this has on (EBITDA). Considering that the desalination plants have been running harder to meet demand,

4 Constraints within solution space

- **We may not be able to pull off enough people from their normal duties to work on this project given time constraints.**
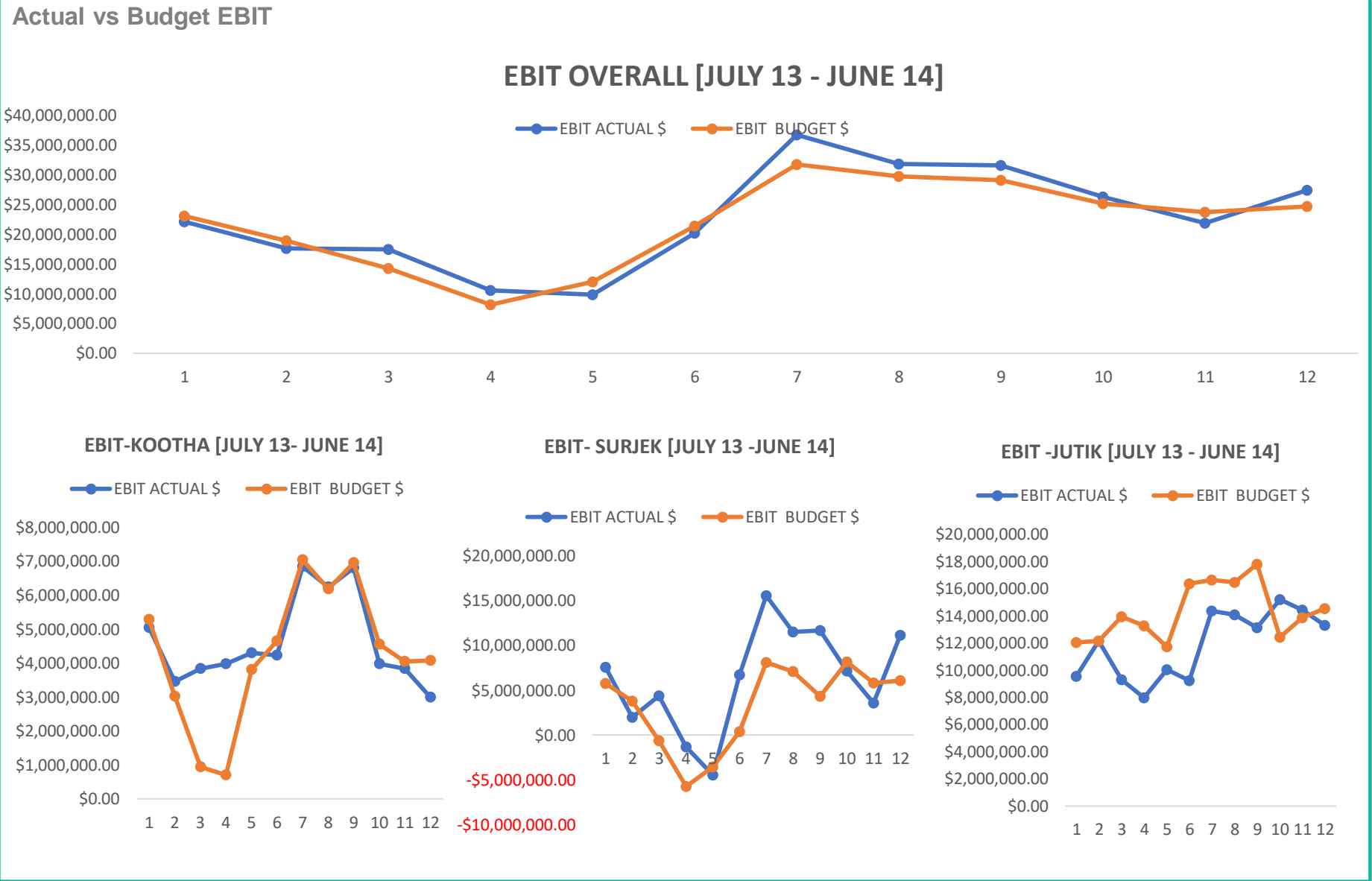
5 Stakeholders to provide key insight

- **Head of Finance –Joanne O'Neil**
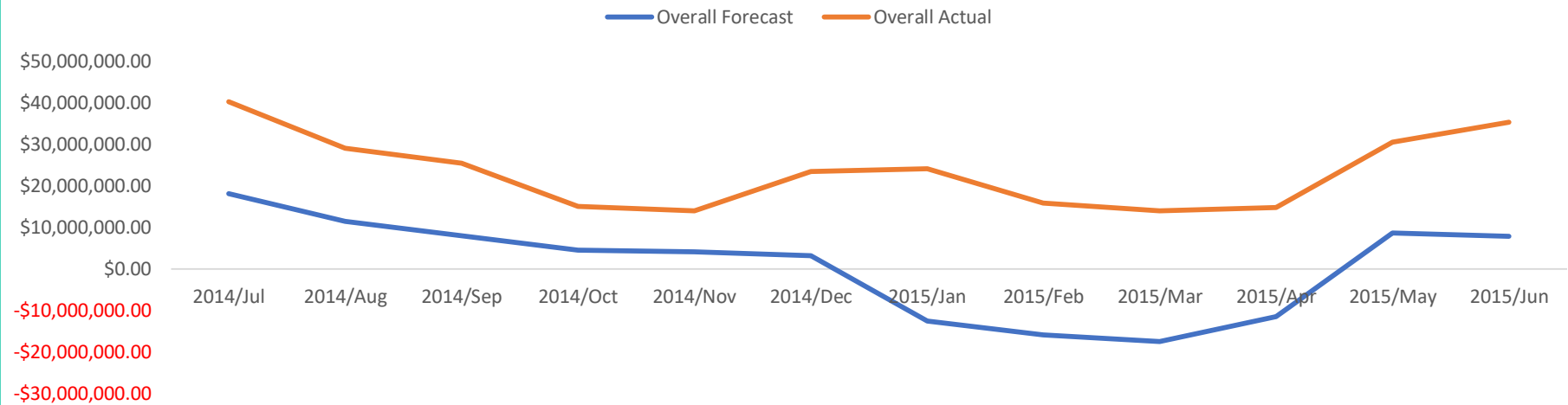- **Commercial Head – Melanie Dupont**
- **Head of Analytics – Andrew Xu**

6 Key data sources

- **Income Statement – year to Date**
- **Production Data – year to Date**
- **Sales Data - year to Date**

EBIT Analysis: Budget Vs Actual

Actual vs Budget EBIT

EBIT OVERALL [JULY 13 - JUNE 14]

EBIT-KOOTHA [JULY 13- JUNE 14]

EBIT- SURJEK [JULY 13 -JUNE 14]

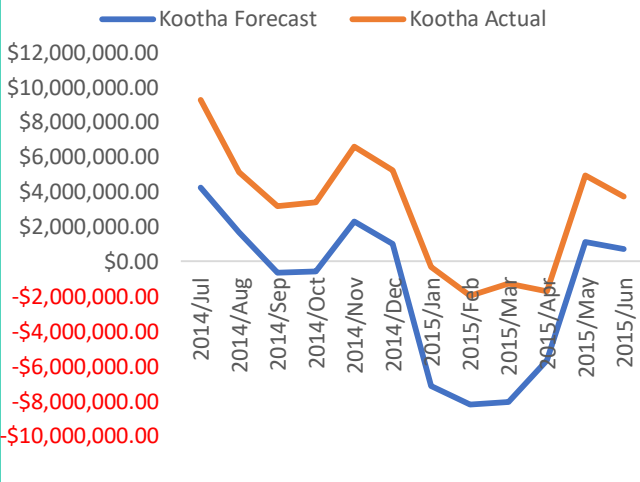**EBIT -JUTIK [JULY 13 - JUNE 14]**

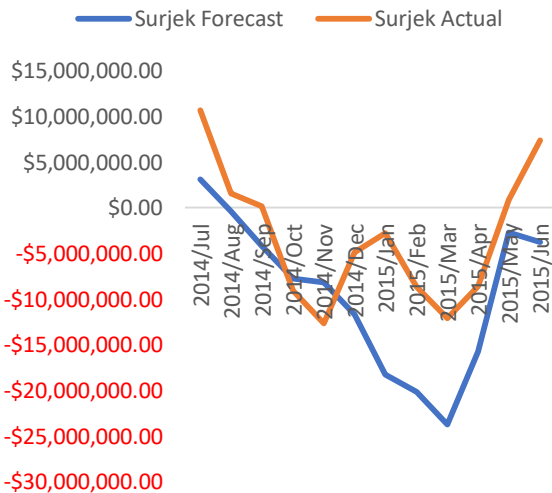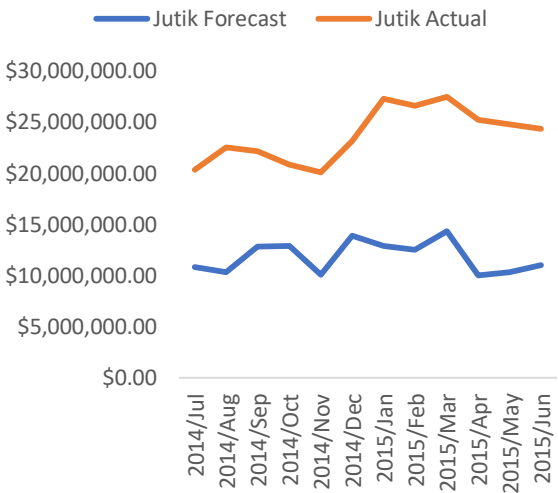# EBIT Analysis : Forecast Vs Actual

EBIT OVERALL - FORECAST Vs ACTUAL

EBIT (KOOTHA) - FORECAST Vs ACTUAL
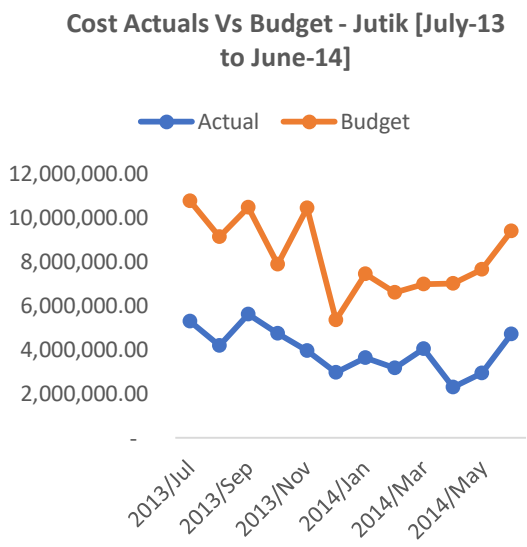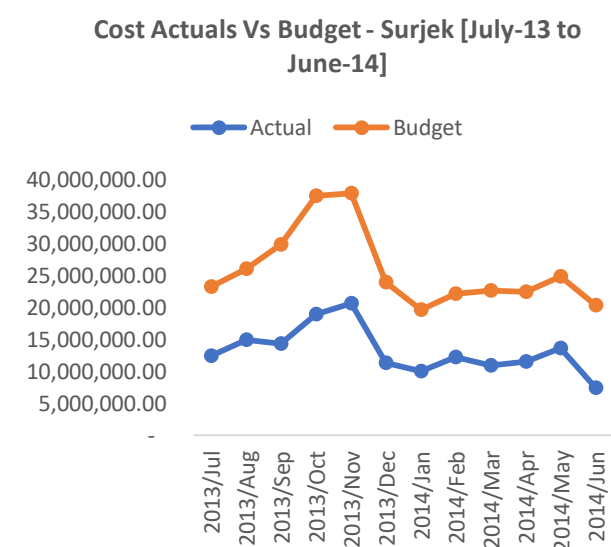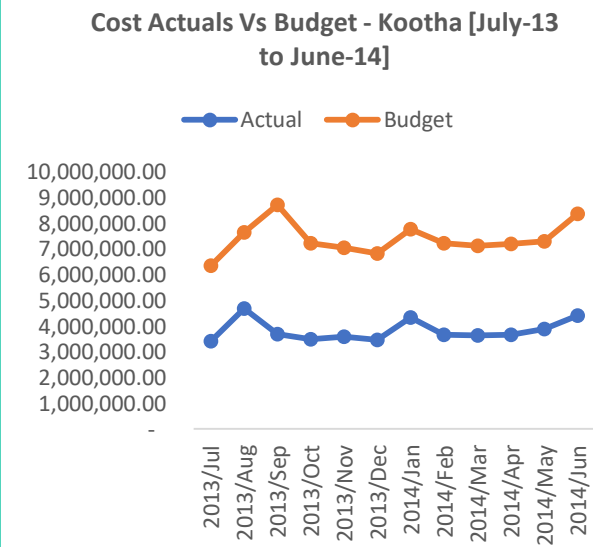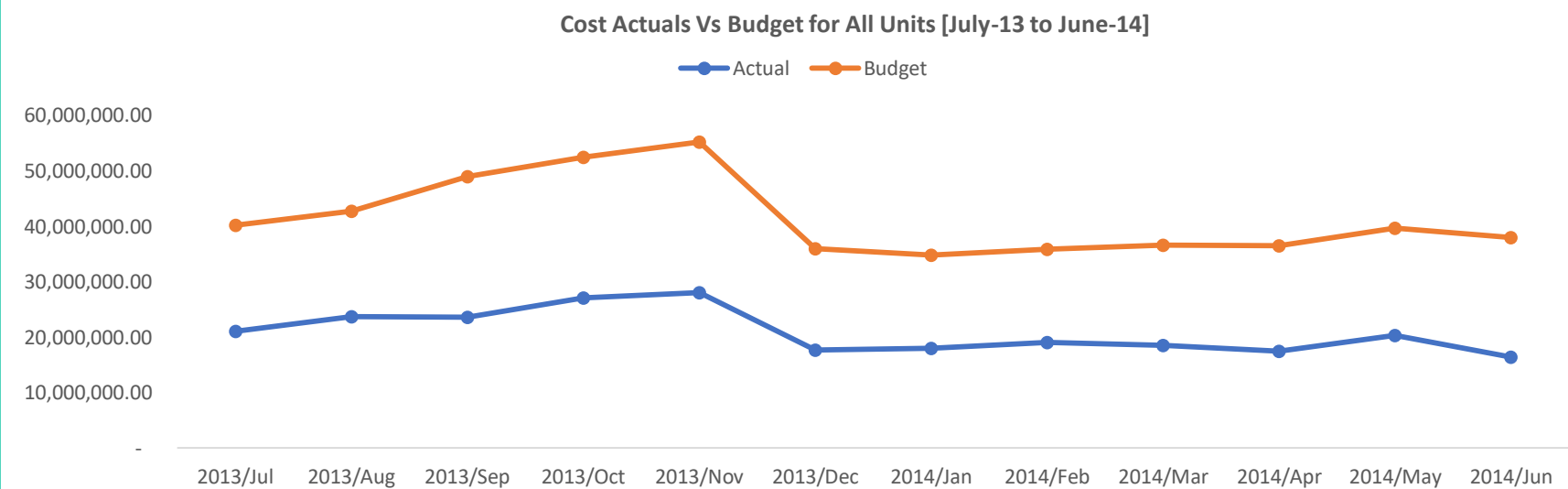
EBIT (SURJEK) - FORECAST Vs ACTUAL

EBIT (JUTIK) - FORECAST Vs ACTUAL

Cost Analysis: Financials

Actual vs Budget Cost Analysis, YTD, $m

Cost Actuals Vs Budget for All Units [July-13 to June-14]

Cost Actuals Vs Budget - Kootha [July-13 to June-14]

Cost Actuals Vs Budget - Surjek [July-13 to June-14]

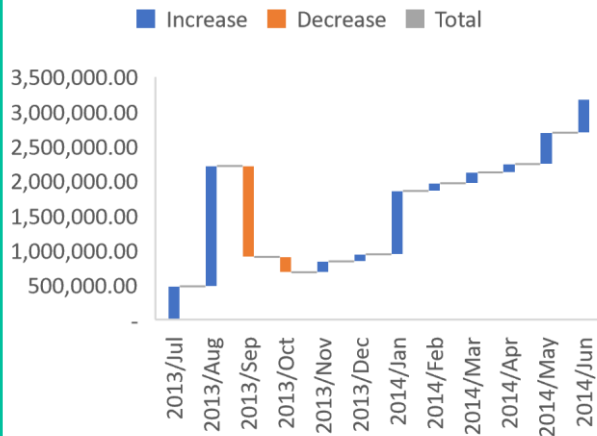Cost Actuals Vs Budget - Jutik [July-13 to June-14]

Cost Variance Analysis: Financials

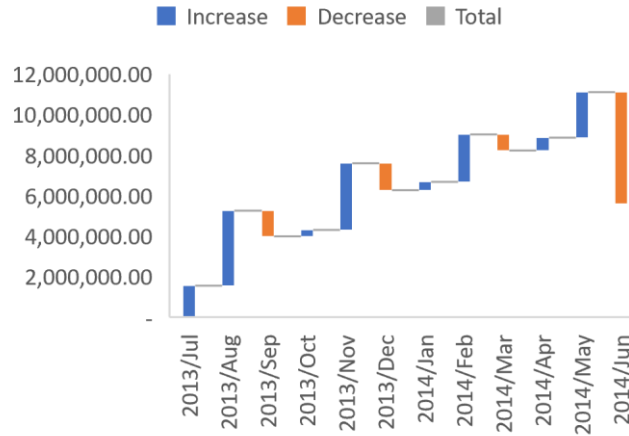## Actual vs Budget Cost Variance Analysis, YTD, $m

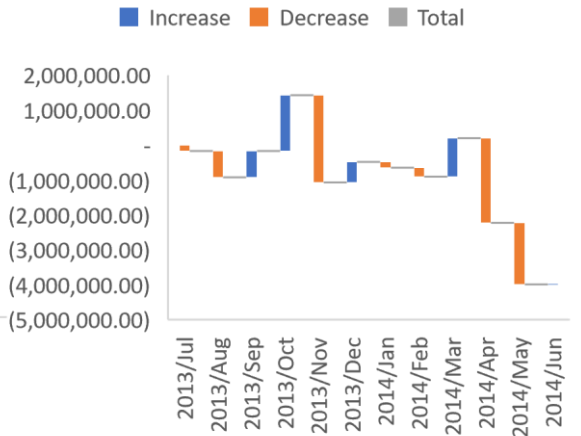### Cost (Variance) Actuals Vs Budget - Overall [July-13 to June-14]
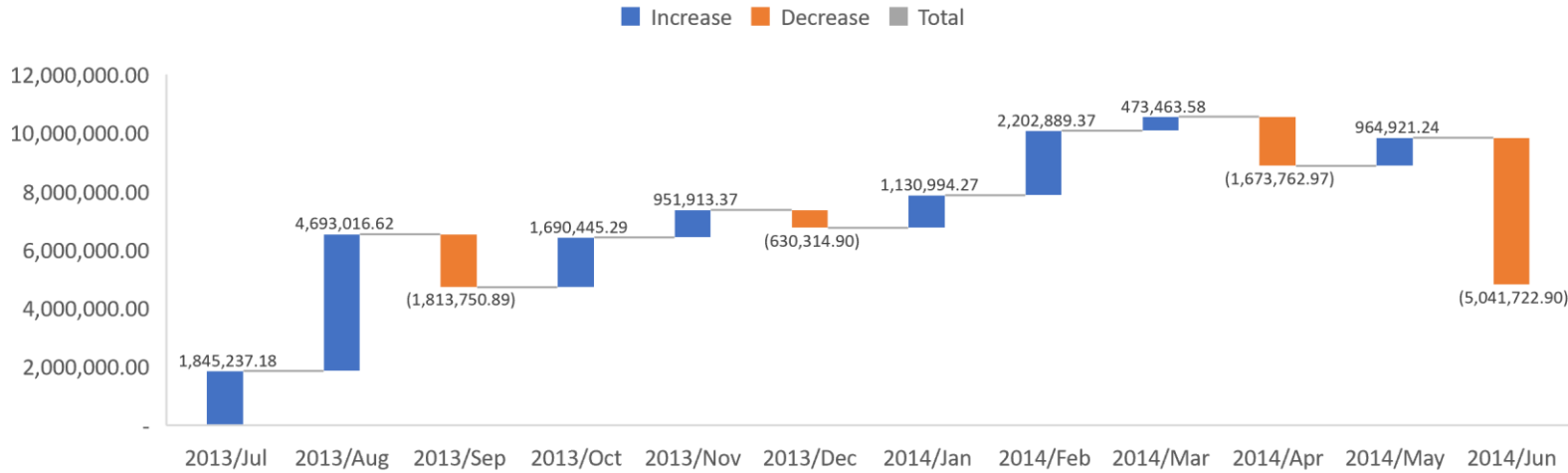
Cost (Variance) Actuals Vs Budget - Kootha [July-13 to June-14]

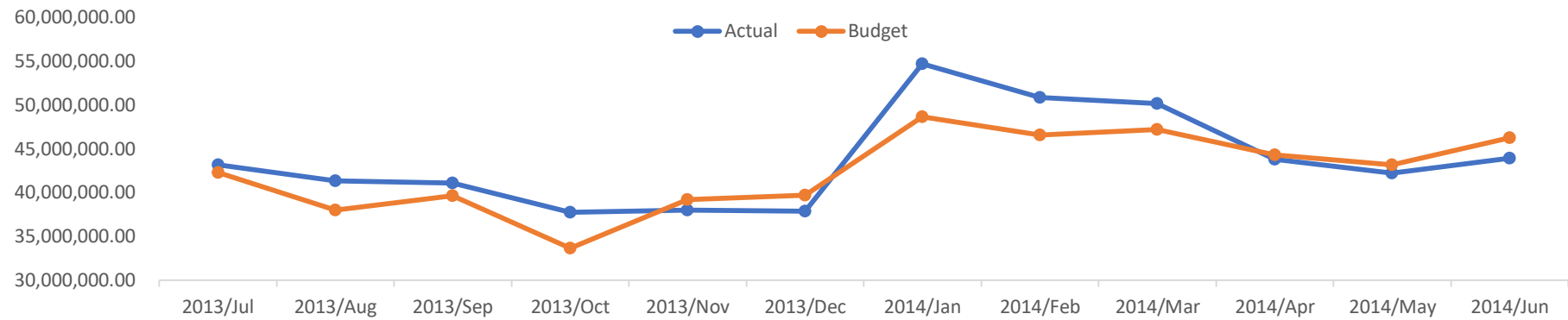### Cost (Variance) Actuals Vs Budget - Surjek [July-13 to June-14]

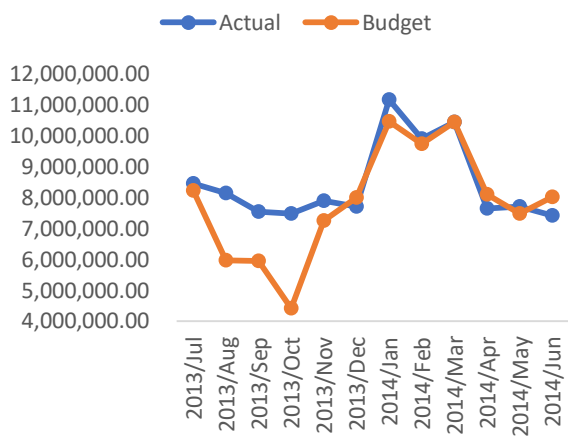### Cost (Variance) Actuals Vs Budget - Jutick [July-13 to June-14]

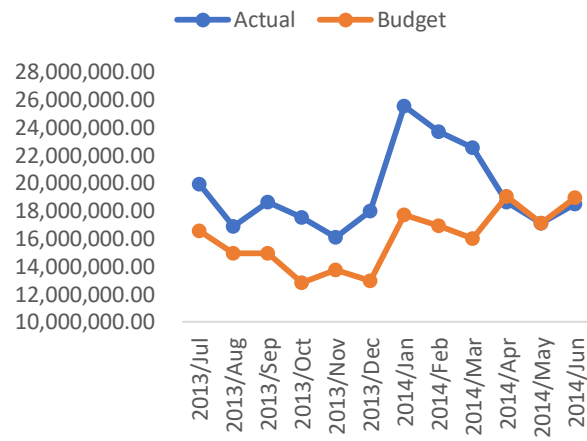# Revenue Analysis

Actual vs Budget Revenue Analysis, YTD, $m

Revenue Variance Analysis

Actual vs Budget Revenue VARIANCE Analysis, YTD, $m

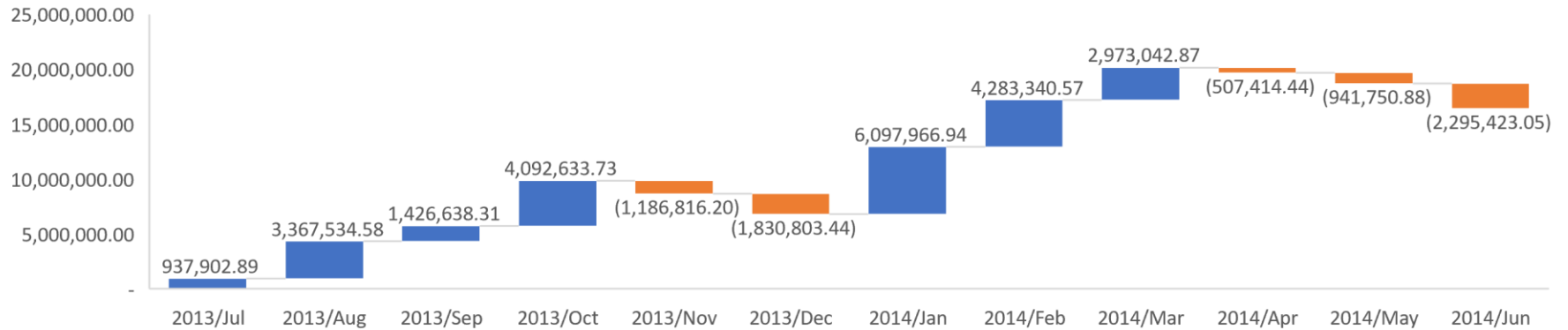**Revenue Actual Vs Budget for all Units [July 2013 - June 2014]**

■ Increase   ■ Decrease   ■ Total

937,902.89
3,367,534.58
1,426,638.31
4,092,633.73
(1,186,816.20)
(1,830,803.44)
6,097,966.94
4,283,340.57
2,973,042.87
(507,414.44)
(941,750.88)
(2,295,423.05)

Revenue Actual Vs Budget Varinace for Kootha

■ Increase   ■ Decrease   ■ Total
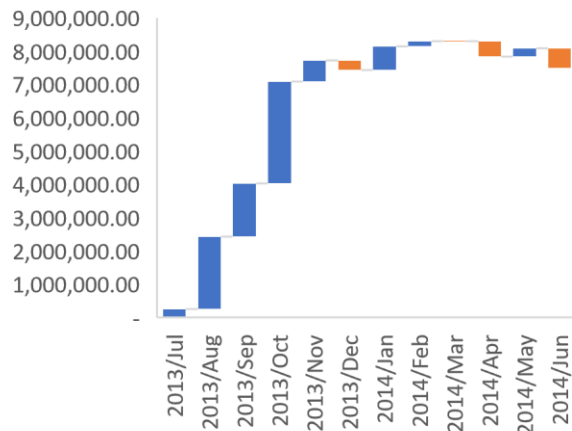
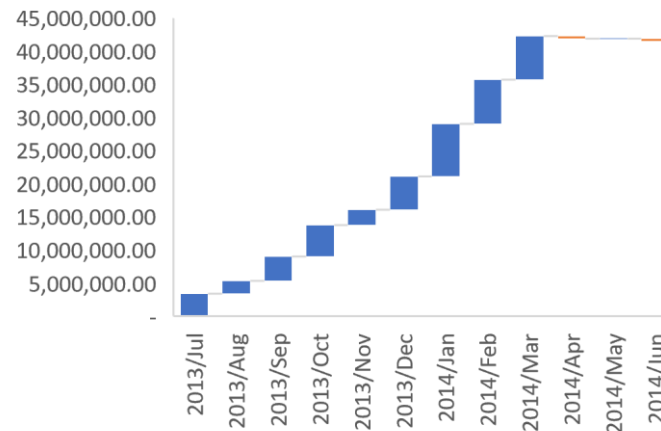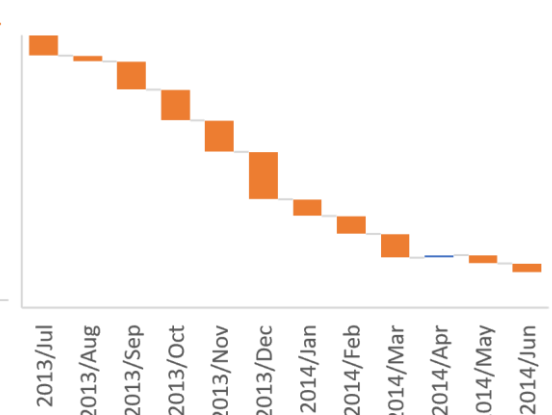**Revenue Actual Vs Budget Variance for Surjeck**
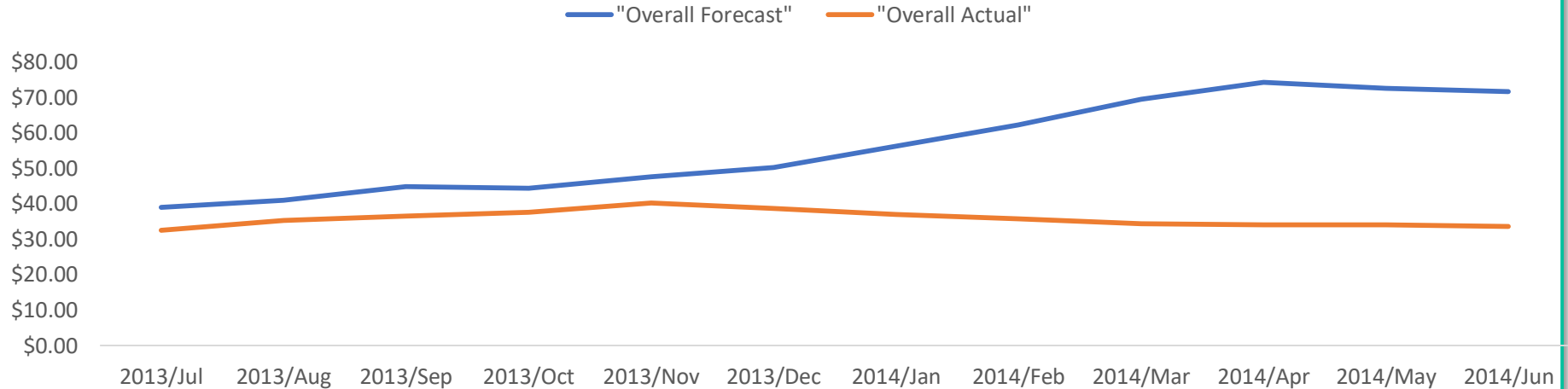
■ Increase   ■ Decrease   ■ Total

Revenue Actual Vs Budget Variance for Jutick

■ Increase   ■ Decrease   ■ Total

Cost to Produce Analysis : Forecast Vs Actual

Rolling Year-to-Date Cost to Produce per Mega Litre ($/Mega-Litre) Actual Versus Forecast [Overall]

"Overall Forecast" — "Overall Actual"

Rolling YTD Cost-to-Produce " Forecast Vs Actual" [Kootha]

kootha Forecast — kootha actual
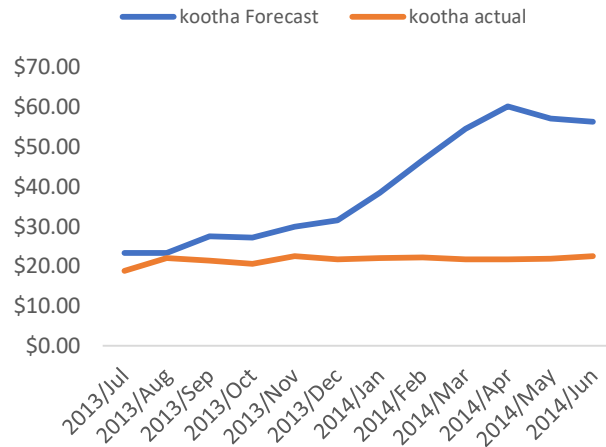
Rolling YTD Cost-to-Produce " Forecast Vs Actual" [Surjek]
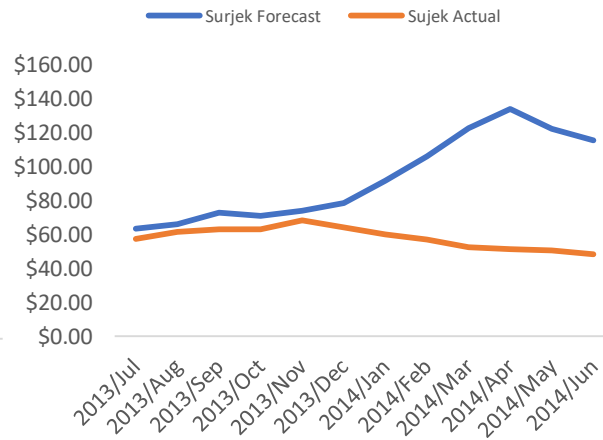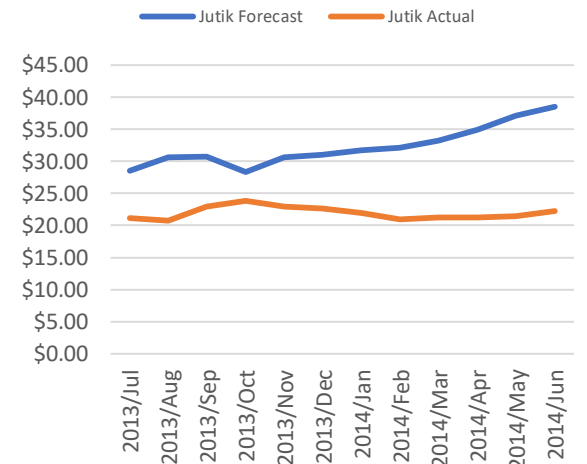
Surjek Forecast — Sujek Actual

Rolling YTD Cost-to-Produce " Forecast Vs Actual" [Jutik]

Jutik Forecast — Jutik Actual

Negative Var.   Positive Var.

Forecast Vs Actual EBIT Variances, YTD $m

			Forecast	Actual
Revenue	'Jutik	-32.5	$222.7m	$190.2m
	'Surjek	108.21	$124.8m	$233.0m
	'Kootha	46.19	$55.3m	$101.5m
Production & Other Production Cost	Jutik	5.5	$7.5m	$2.0m
	'Surjek	14	$21.1m	$7.1m
	'Kootha	8.1	$8.8m	$0.7m
Overheads	'Jutik	27.77	$73.3m	$45.5m
	'Surjek	66.56	$217.0m	$150.5m
	'Kootha	20.56	$65.8m	$45.3m

Average final Price Vs Average Water production (Monthly)

Comparing avg final price with avg supply (monthly)

Legend: Avg monthly Total Water Supply (Giga-Litres) — Avg Monthly Final Price ($/Mega-Litre)
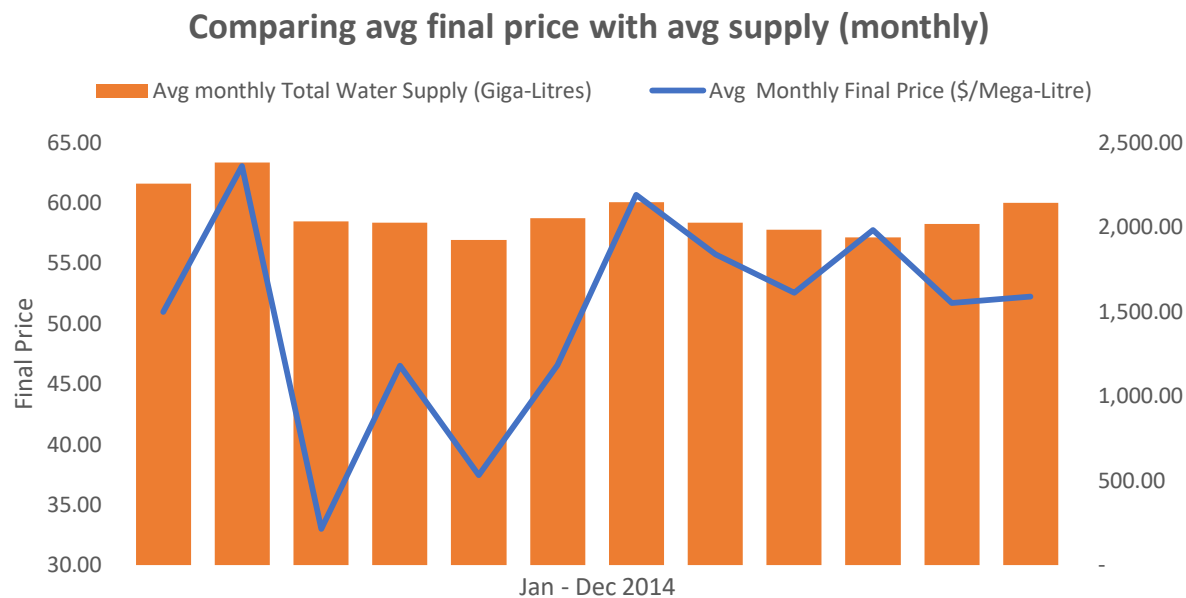
Pseudo Cost Curve (Efficiency of Production Plants in light of Weighted Market Price)

$/ML versus Market Price

Legend: Jutik | Kootha | Surjek | Overall | Market Price

- Surjek $115.33
- Overall $71.68
- Kootha $56.2 M/L
- Jutik $38.5 M/L

Left axis — $/ML (Cost to Produce): $0.00, $20.00, $40.00, $60.00, $80.00, $100.00, $120.00, $140.00

Right axis — Market Price (Weighted): 0, 20, 40, 60, 80, 100, 120, 140
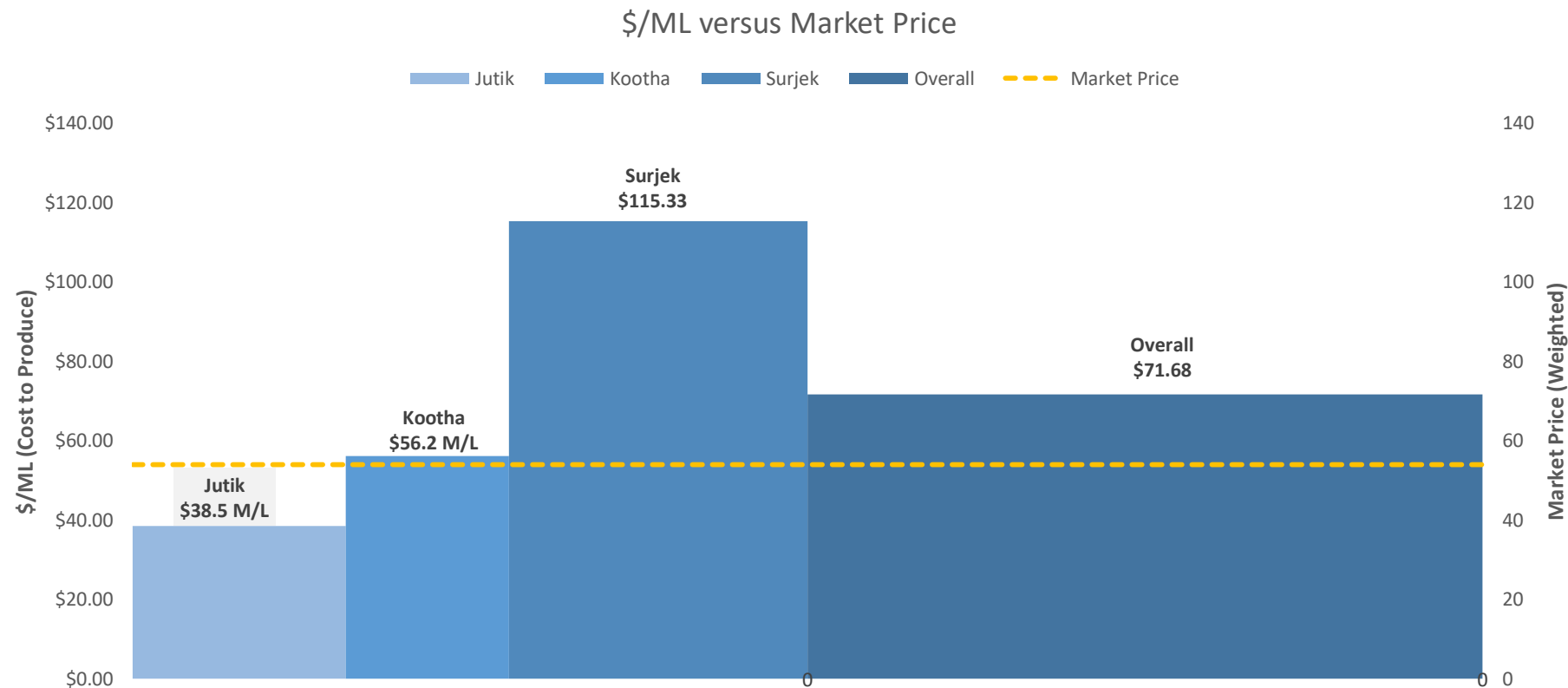
In terms of most cost-effective plants when compared against the Overall Weighted Market Price, we see from the above chart that Jutik is the most cost effective being lower than Overall Weighted Market Price.