BUSINESS SCIENCE CORPORATION

Our Staff

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OPEN PIT-MINING

JUNE, 2020

1. ***Company Performance Analysis***
   - **Monthly Revenue**
   - **- Monthly Costs**
   - **Predicted Profits**
2. ***Truck Performance Analysis***
   - **- Workload Breakdown**
   - **Working Hours Breakdown**
   - **Time Period Analysis**
3. ***Project Proposal***
   - ***Truck Efficiency***
   - ***Financial Performance Improvements***

KEY FIGURES OF CURRENT PERFORMANCE

Coal Produced, 2015
1, 015,107 Tonnes

Avg per month: 85,650.58 Tonnes

2,730 Tonnes produced per day

682.66 Tonnes Per Truck

Revenue Requirements

We require on average, 415.16

Tonnes of coal per day to meet budgetary requirements

Market Location

Trucks currently operation 4

Trucks in inventory 5

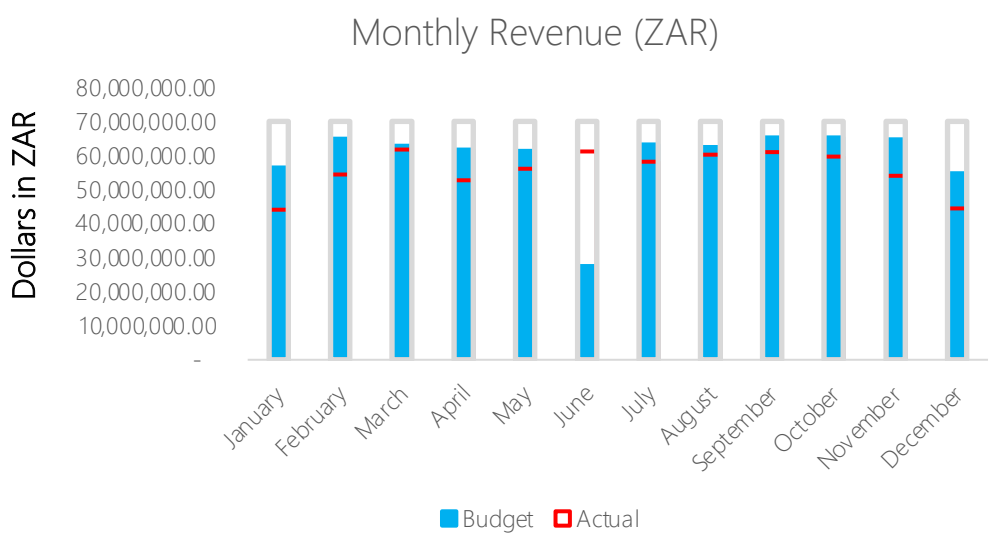
827.96 Kms Driven per 23 hour Day.

Sale Price

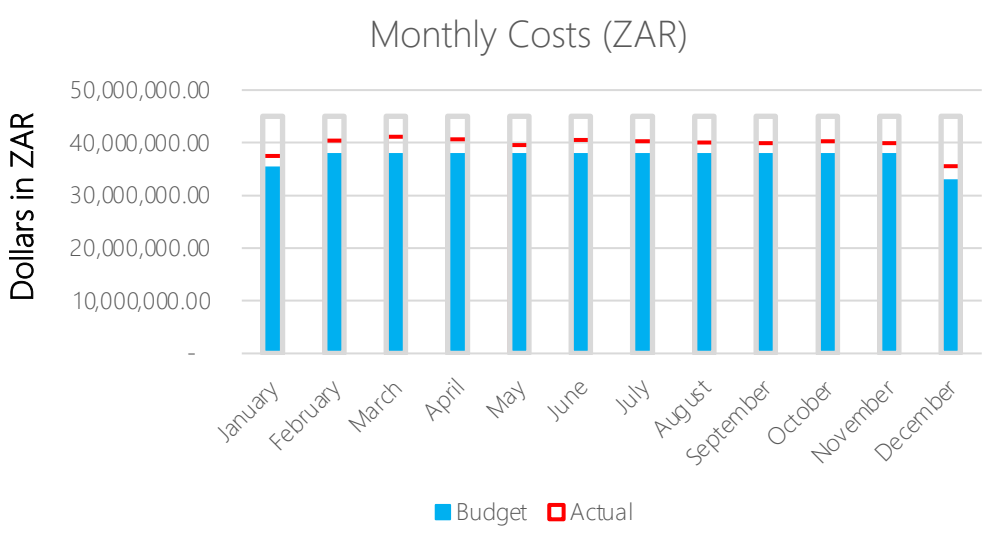
Average cost of Coal Per Ton

657.07 ZAR

PERFORMANCE REVIEW MONTH BY MONTH

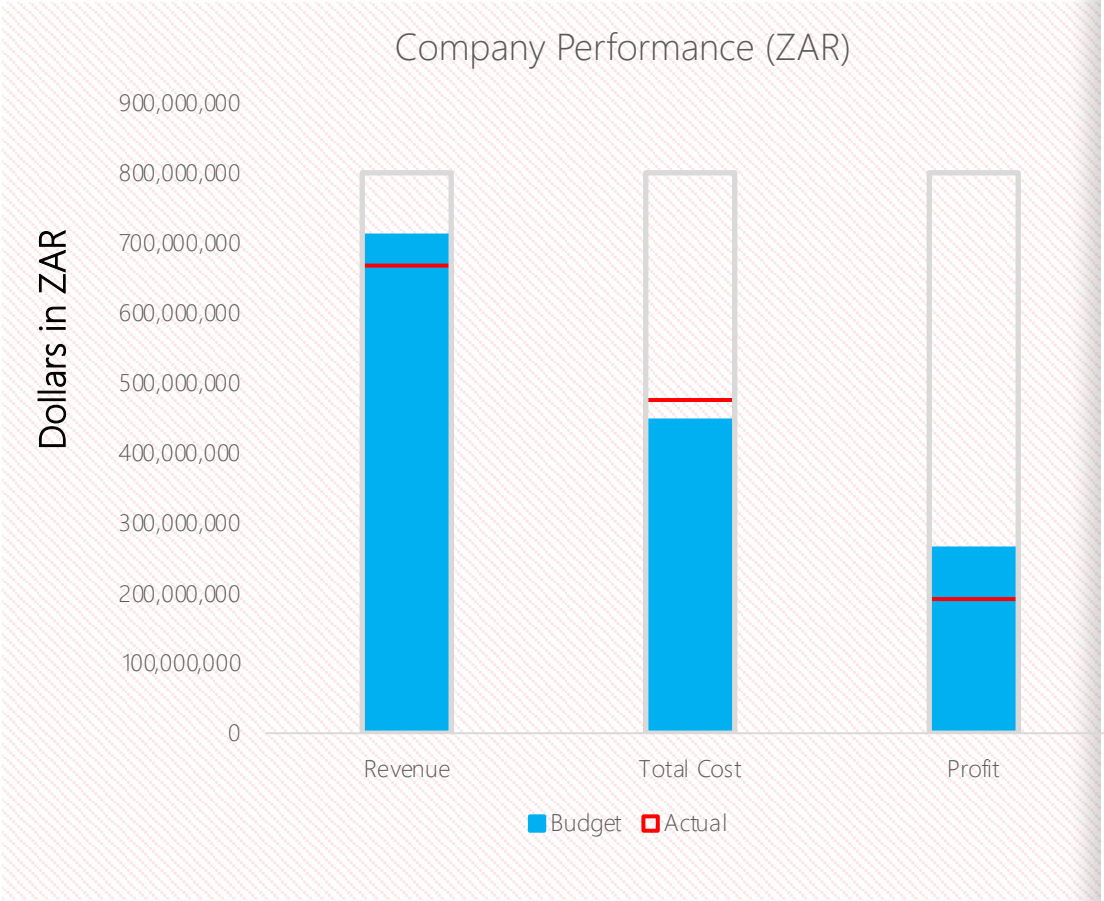


Budget has only been met once in June. This is expected to be an anomaly as the budget forecast was set so law. General trend is that the actual is consistently under budget.



Monthly cost are consistently over budget. Steps must be taken to reduce fix costs making up approximately 40-50% of costs.

PERFORMANCE ANALYSIS

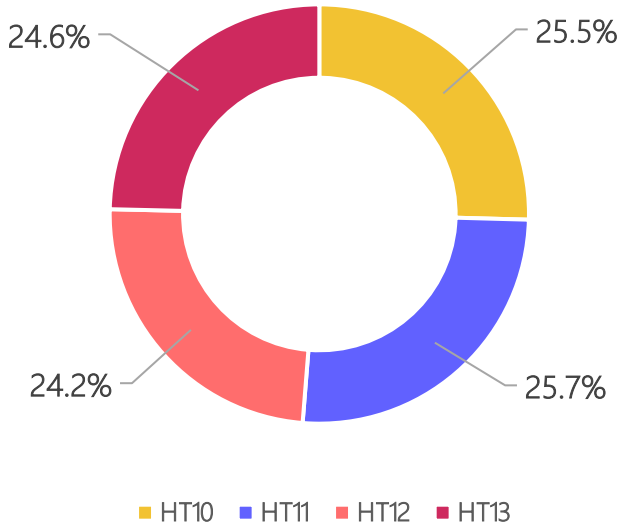


The revenue for the open pit mine is under budget by 43,233,138 ZAR

The total cost of the open cut mine is over budget by 29,353,722 ZAR

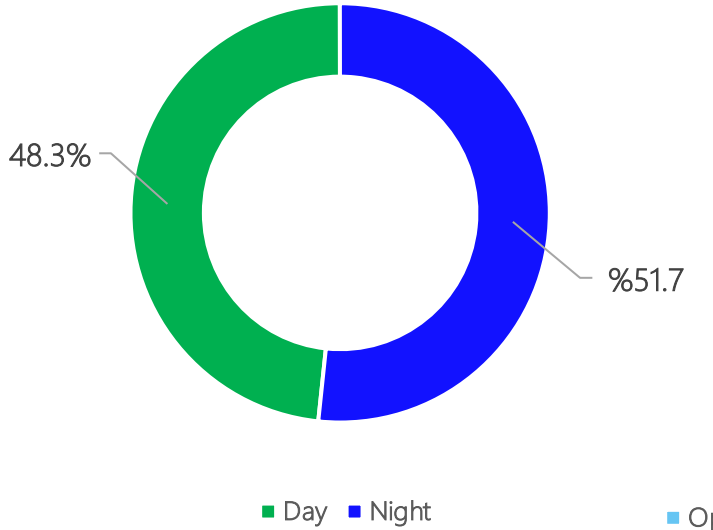
The open pit mine is at a loss. The profit is under budget by 72,586,860 ZAR

TRUCK ANALYSIS



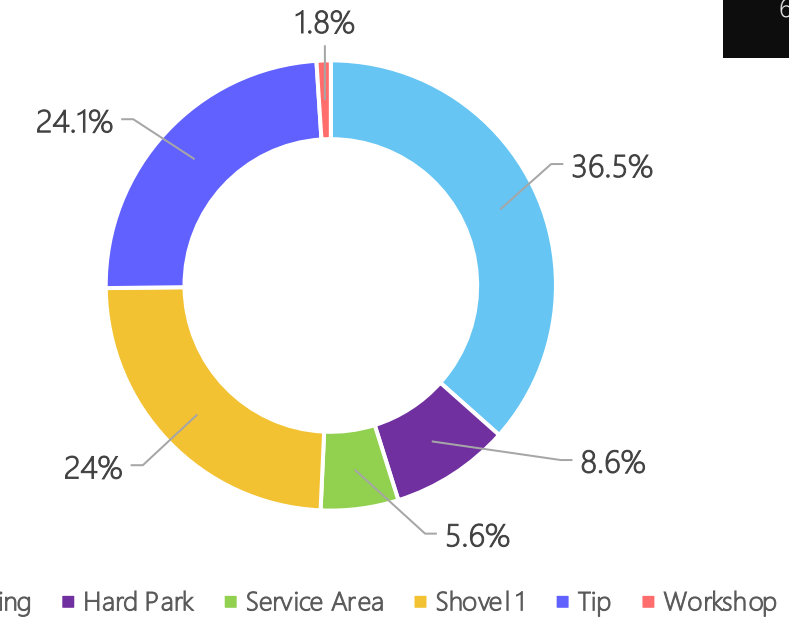
Distance Covered Per Truck

The distance covered by each truck is similar to that of one another. Each truck is approximately travelling 200km. This suggests that all trucks are equally mobile throughout the day.



Distance Covered in a Work Period

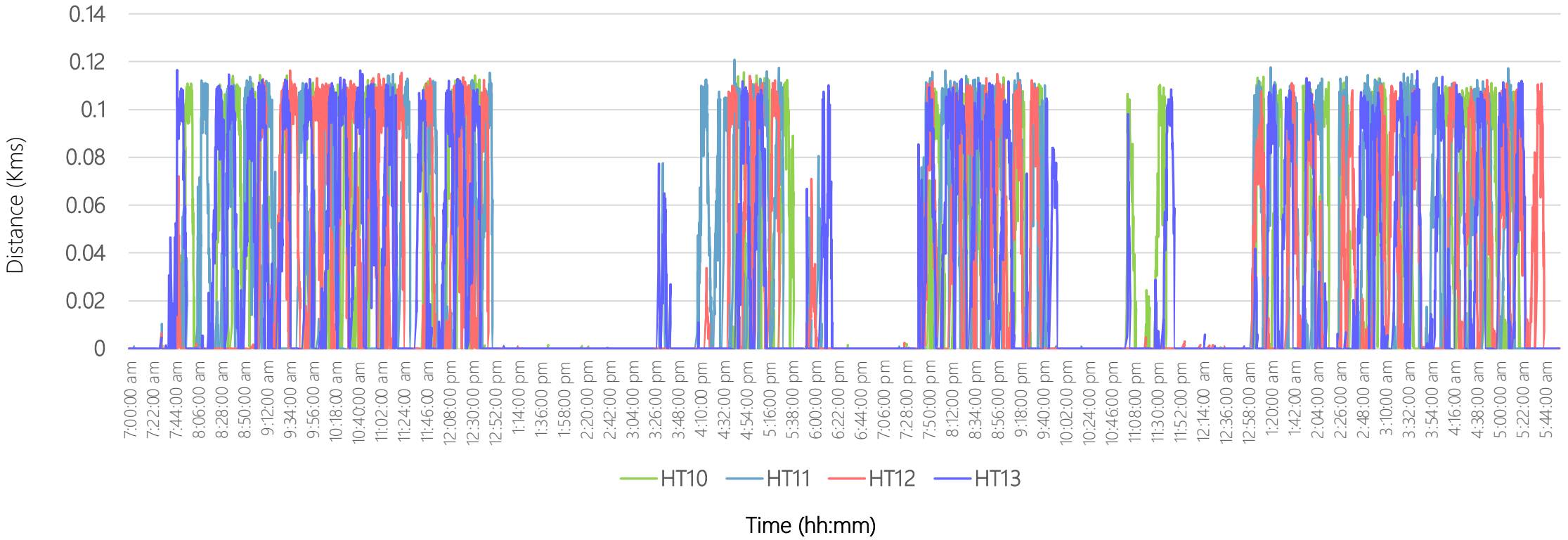
The cumulative distance covered by the trucks was relatively less than the distance covered by the trucks at night. This suggest more driving is completed in the evenings that during the day.



Time Spent in an Area

The time spent in a specific area of the mine illustrates that a substantial amount of time is allocated operating (moving), whist the other major allocated times are at the tip and the shovel.

DISTANCE COVERED IN A 23HR DAY



The graph above illustrates the distance covered by the 4 trucks operating at the site on a scheduled workday. The trucks are indicated by HT10, 11, 12 and 13.

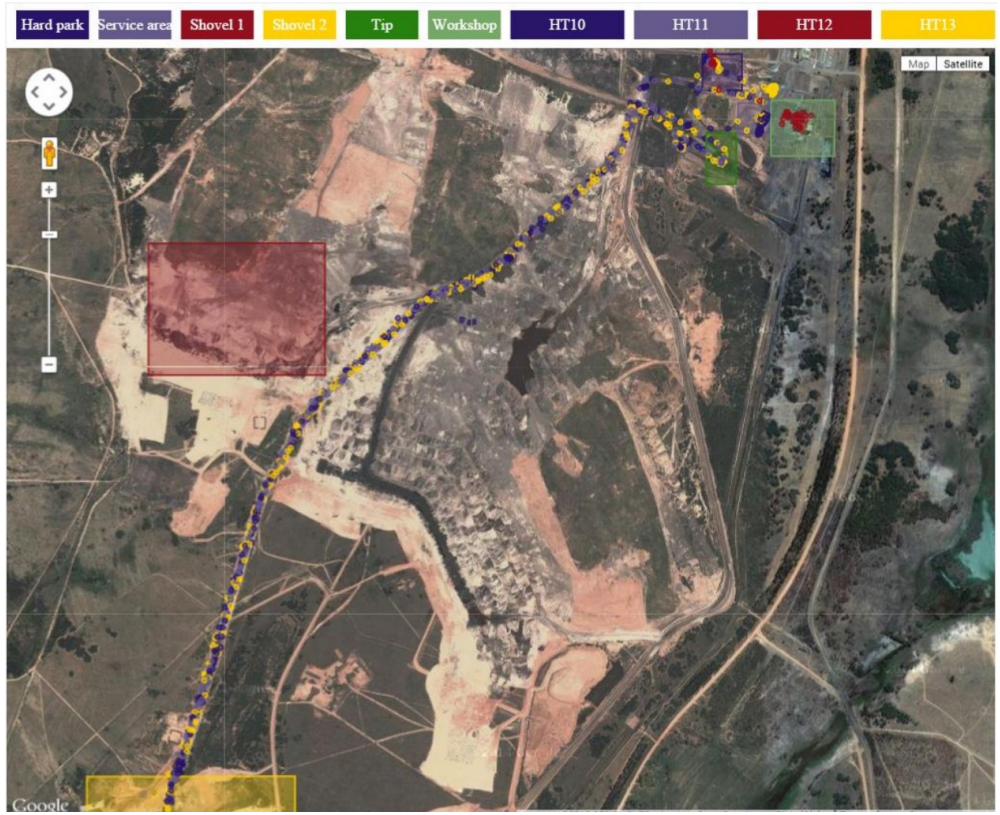
7.5hrs

of the day all trucks are not operational

Operations 7:00AM - 6:00AM

PROPOSED ADJUSTMENTS

Reduce Travel time of trucks by moving the Tip, Service Area and Hard Park nearer to Shovel 1 and 2.



Increase operation hours. There are several time periods where trucks are not operational.

Utilise truck HT12. Encourage HT12 in operations outside of the Tip to increase coal production.

Utilise Truck 5. Operations involve HT10, 11, 12 and 13 despite owning 5 trucks

FINANCIAL IMPACT OF CHANGES

Addition of Truck 5

Excel Data states there are 5 trucks in the inventory. 4 Trucks are in operation.

The additional use of an extra truck will increase coal production by 682 Tonnes per day. On average meeting the budget coal production requirements.

Additional Average Monthly Coal Produced: 20,460 tonnes

Increased Operation hours.

7 and a half hours is approximately the duration where trucks are idle (non-operational). Truck currently move 44 tons per hour. Increasing truck operation hours by 2 hours can result in 88 tonnes of coal produced per truck a day.

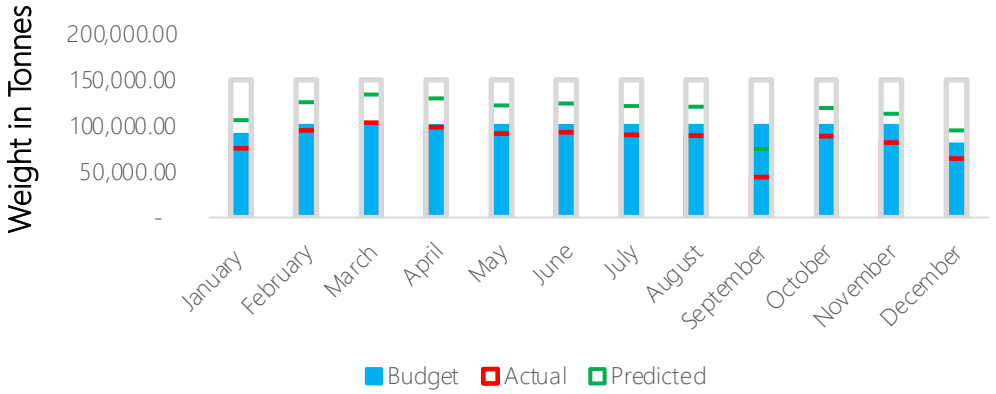
Additional Average Monthly Coal Produced: 10,560

Reduction of Travel Time

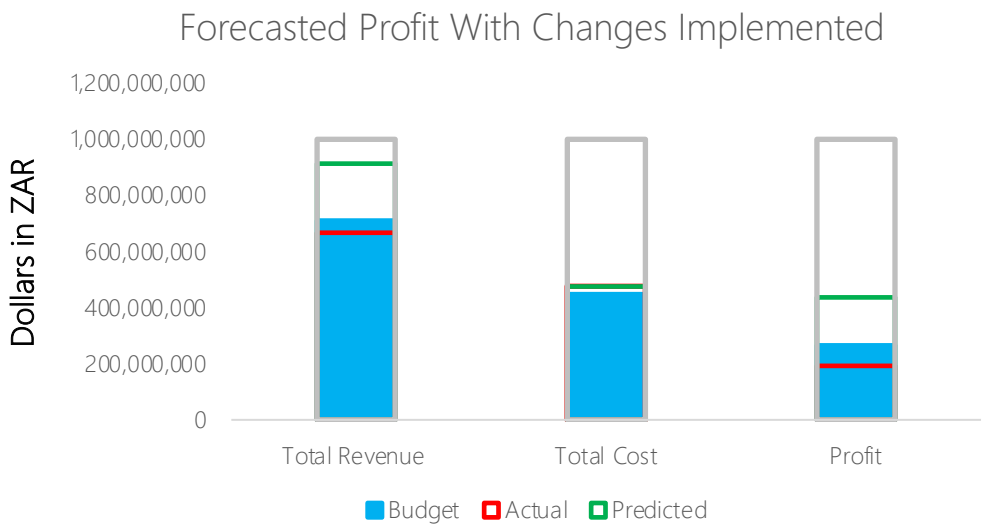
Based on the map, a large portion of operation time for HT 10, 11 and 13 is travelling to and from Shovel sites to the tip, hard park and work shop. Moving these facilities closer to the site will allow for less time/distance spent driving between sites. Less kms would be expected to result in less time on repairs and cost reductions.

Reducing the distance to facilities by half would be expected to increase coal production.

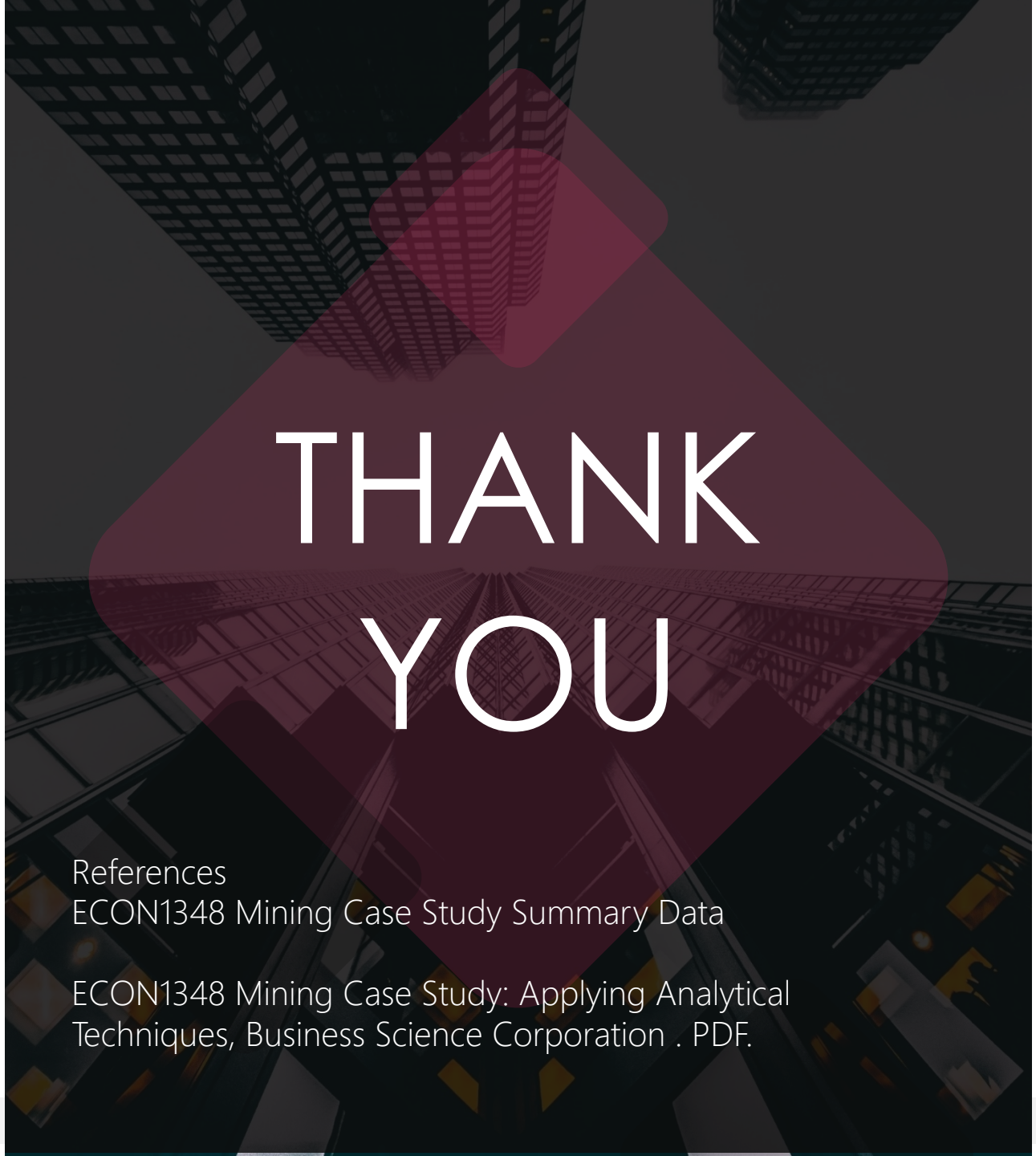
PREDICTED COMPANY PERFORMANCE



The predicted monthly average coal production is expected to 115,650 Tonnes. With an expected additional 31,020 Tonnes monthly.
Resulting in a 36.6% Coal production increase



Based on the forecasted values it is predicted that there will be 30% increase in revenue from the actual yield and a 127% return on profits from the actual value



THANK YOU

References

ECON1348 Mining Case Study Summary Data

ECON1348 Mining Case Study: Applying Analytical Techniques, Business Science Corporation . PDF.