

Case study

# Year After Year, Refinery Sees Big Savings With Machine Health

With data and proactive action, this refinery's Innovation, Maintenance, and Reliability groups are optimizing workflows in high risk zones

## 72%

Reduction in maintenance costs across monitored sites

## 4x ROI

Within 6 months of deployment

### Company Profile

**Employees**  
1,400+

**Products Manufactured**  
Aromatics  
Fuels  
Oils  
Oil Refinery  
Petrochemicals  
Polymers  
Waxes

**53+ Processing Units**  
Catalytic  
Coking  
Cracking  
Crude Oil Distillation  
Power  
Vacuum Distillation

**Type of Machines Monitored**  
Blowers  
Chillers  
Compressors  
Cooling Towers  
Fans  
Heat Exchangers  
Pumps  
Separators  
Steam Traps  
Turbines

### Business Impact

As the largest oil refinery and petrochemical producer in Israel, this industrial manufacturer is the cornerstone of the country's industry. The company produces a wide range of petroleum distillation products with a daily production capacity of approximately 197,000 barrels of oil. Their key operational goals include optimizing output, streamlining maintenance costs, and increasing profit margins. To achieve this, they needed a solution to drive immediate impact and YoY results.

# The Challenge: Balancing Maintenance Costs Across Complex and Hazardous Operations

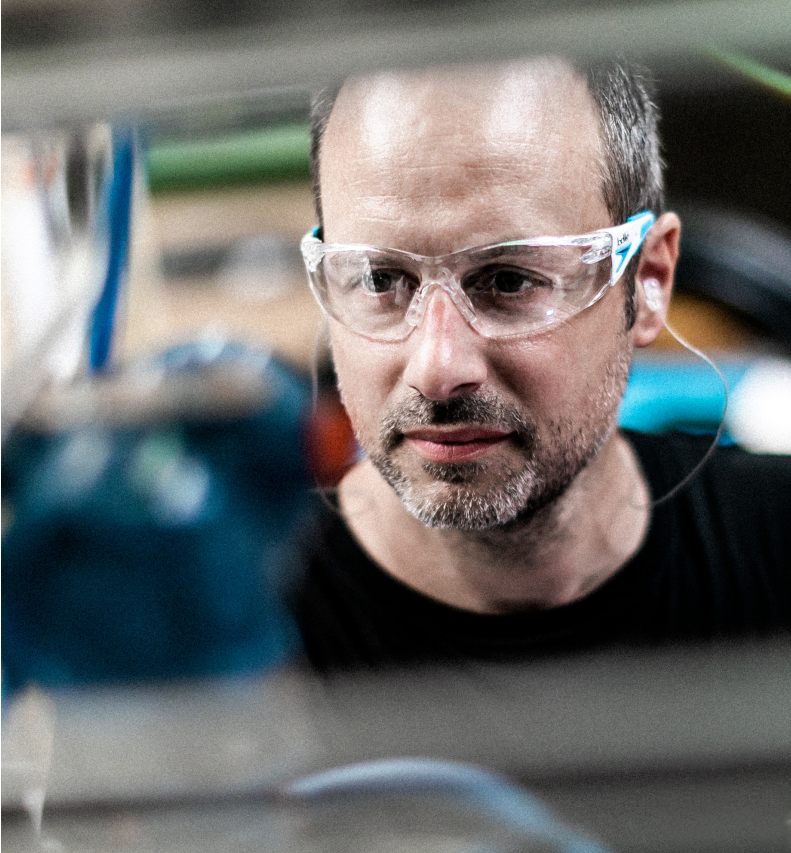
This refinery relies on a complex array of machines to turn crude oil into petrochemical products. Maintaining this complicated network of equipment is essential to keeping production running continuously and efficiently. However high maintenance costs were impacting operational budgets and machine issues were increasing downtime, safety, and environmental risks.

Prior to deploying Machine Health, the company relied on different maintenance strategies, like route-based, preventative, and run-to-failure, and used portable data collectors and manual analysis tools. This led to inconsistent machine data, delayed repairs, and occasionally unexpected or extended outages. The team knew they needed to change their maintenance approach and that access to real-time machine data could save them considerable costs and inefficiencies.



For many years, we relied on manual monitoring and corrective maintenance. That meant we ran machines until they had a problem, then we shut them down and made the repairs. This practice often resulted in unexpected shutdowns, which had repercussions for people and other machines. Downtimes could be lengthy, too, as we waited for root-cause diagnosis and replacement parts.”

- Head of Maintenance



## The Solution: Reduce Maintenance Costs Without Sacrificing Standards

To reduce costs and improve maintenance practices, this petrochemical producer needed a solution that could monitor heavy industrial equipment and reliably collect data across their most important assets. They weren't interested in solutions that provided generic alerts. They wanted insights with root cause analysis that could recommend maintenance actions. This meant finding a technology partner that could deliver highly accurate diagnostics at scale, across a variety of machine types.

With Augury's Machine Health, their teams found an end-to-end AI solution backed by reliability experts and a proven track record of helping industrial customers achieve fast results and strong adoption.

# Impact on Maintenance Costs Year-to-Year

In 2021, the refinery piloted Machine Health to ensure immediate and long-term value. The team deployed the solution across a specific set of redundant assets and saw huge potential. After a 1-2 week baseline period, real-time insights into the health of their equipment exposed many issues. With access to prescriptive alerts that identified the issues and recommended courses of action, they could plan and execute their repairs. This created early buy-in and adoption from site-level teams.

Since their initial deployment, the overall health of their equipment has exponentially improved. A financial analysis conducted on a set of machines monitored by Augury from the 2021 pilot to the end of 2023 shows how their team increased reliability and lowered maintenance expenses year after year.

Assets in Pilot Group
<b>Initial Deployment</b> 2021 - 2022 -9%+ Maintenance Cost Reduction
<b>First Full Year</b> 2022 - 2023 -65%+ Maintenance Cost Reduction
<b>After Second Full Year</b> 2021 vs 2023 -72% Maintenance Cost Reduction



We saw ROI of nearly four times the investment within six months, just in repair savings. If we include savings from downtime avoidance, it would be much, much higher.”

- Head of Maintenance & Service Department



# The Result: Impact on Maintenance Costs Year-to-Year

The financial impact of Machine Health for this refinery extends beyond maintenance costs. Since most of the refinery's assets are redundant, catastrophic failures typically do not disrupt production. However, machine failures can expose teams to hazardous conditions and derail workdays with unplanned maintenance demands. Since 2021, based on recorded repairs, the company has avoided over 1,800 hours of machine downtime- which means reduced production expenses and risk.

Ultimately, Machine Health has improved morale and the day-to-day experience of their site-level teams. It has enabled them to change how they do maintenance while increasing overall productivity. With access to steady and reliable data, they are no longer firefighting or acting on outdated information. Now they prioritize maintenance tasks and work as a connected team.

### Standout Machine Wins from 2021-2024

\$120K saved and 288 hours of machine downtime avoided after an alert prompted repairs on a fan	\$300K+ of costs and 240 hours of machine downtime avoided after an imbalance was flagged overnight on a compressor
\$100+ saved after mechanical looseness was flagged on the motor of a tank farm cluster	\$38K+ saved after an alert prompted repairs on a pump in their power plant



“The partnership with Augury enables us to reduce downtime, elevate our workforce, and improve our production capacity.”  
 - VP of Innovation

# Scaling for Future Success

Over the past three years, this refinery's leadership has expanded Machine Health to cover the majority of their critical assets, leading to richer details and insights and even more optimized workflows for their teams.

Year after year, their program becomes increasingly proactive and data-driven. As a result, their cost savings continue to increase as unplanned downtime, costly repairs, unnecessary machine rebuilds, and preventative tasks become rare occurrences.

10 production clusters	74 production areas	950+ monitored machines	80% address alert rate	Millions of dollars saved
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“Today, our maintenance team isn't just using the data, they are addicted to it.”  
 - Head of Maintenance & Service Department

## About Baker Hughes & Augury Alliance

Baker Hughes and Augury formed a commercial alliance at the end of 2021 that builds on Baker Hughes' existing asset performance management (APM) capabilities and domain expertise in critical industrial assets. The alliance allows customers to benefit from end-to-end visibility into the health and performance of their critical assets to balance of plant (BOP) machines, resulting in reduced downtime, increased availability, and lower maintenance costs. The companies' combined expertise and offering provides customers with a single, simplified view and deep insights into their entire fleet of industrial assets to drive visibility for reduced downtime and improved operational efficiency. Visit us at [www.bakerhughes.com](http://www.bakerhughes.com).

To learn more about Augury, visit us at [www.augury.com](http://www.augury.com)

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