

Case Study: Compressed Air 2

Comprehensive Site Review – Manufacturer

Pipe sizing and compressor-sizing issues were identified by a Comprehensive Site Review. If this review had been conducted prior to the client's purchase of the new compressor, the client could have saved on capital as well as energy.

Situation:

The client had purchased a new compressor but was concerned as the compressor was operating at or near 100% capacity. The client wanted to know if this was due to a commissioning issue (e.g. compressor wrongly sized for the plant), incorrect equipment selection, or some other problem.

Solution:

- We conducted a **Comprehensive Site Review** which showed a significant pressure drop was preventing air entering the main production area. Further investigation revealed this to be due to major piping restrictions. Significant leak losses were also identified.
- Bridging piping was installed to overcome the restriction, and a leak rectification program was implemented. A post-implementation pressure verification study showed increased air pressure over the entire site, and a significant reduction in leaks.

Benefits:

- Energy saved per year: **837 MWh**
- Saving **\$69,000** in electricity costs per year
- CO₂ saved = 888 tonnes p.a.
- Energy Savings Certificates = **\$17,000** (799 ESCS)
- Project cost = \$23,376
- Payback = **6 months**.

Operational Benefits:

- The pressure drop was improved by 69% and no longer restricted flows to the production area.
 - Overall air pressure across the site was increased by 4.8%, leading to increased efficiency of production.
 - The new compressor was identified as wrongly-sized – it was in fact too big for the plant, and the client could have purchased an even smaller-capacity machine. The client had over-capitalised on plant, so would have saved on capital as well as energy, and created more ESCs if they had conducted an independent review prior to purchase.
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