Case study for three typical mining projects

VentSim™ CONTROL Ventilation on Demand (VOD)

Howden

Mine 1: Energy savings
(Actual results using VOD)

Mining method:
Long-hole transverse stoping

Tonnage: 3,400 tpd

Airflow: 1,350,000 CFM

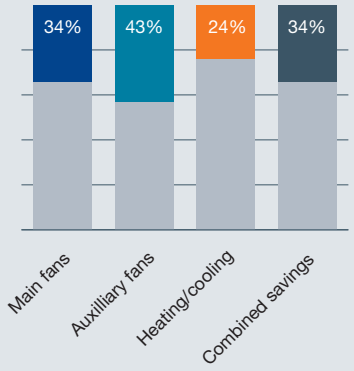
Energy cost: CAD $0.075/kWh

Life of mine: 9 years

Direct operating savings: CAD $2.44/t

Net LOM savings including cost of ownership: CAD $1.63/t

Simple payback: 0.8 years



Mine 2: Energy savings
(Actual results using VOD)

Mining method:
Long-hole longitudinal & transverse

Tonnage: 3,500 tpd

Airflow: 600,000 CFM

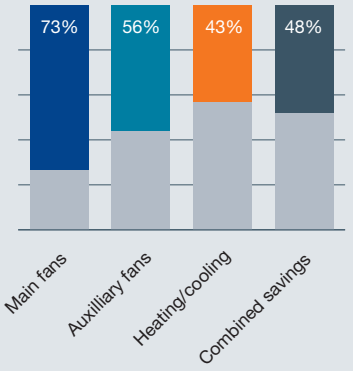
Energy cost: CAD $0.05/kWh

Life of mine: 9 years

Direct operating savings: CAD $2.07/t

Net LOM savings including cost of ownership: CAD $0.77/t

Simple payback: 1.2 years



Mine 3: Energy savings
(Actual results using VOD)

Mining method:
Long-hole longitudinal retreat

Tonnage: 4,000 tpd

Airflow: 1,700,000 CFM

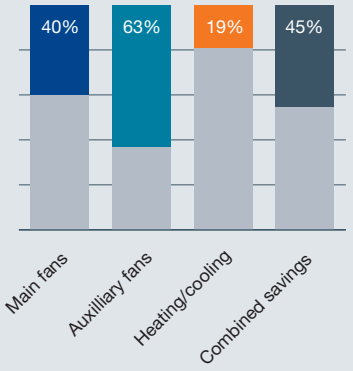
Energy cost: USD $0.18/kWh

Life of mine: 9 years

Direct operating savings: USD $2.09/t

Net LOM savings including cost of ownership: USD $0.94/t

Simple payback: 0.5 years



Ventilation on Demand (VOD) is a technology which has been undergoing continuous evolution since early implementations during a period of rising energy prices in the early 2000s. Howden is now able to release results from case studies of Ventilation on Demand systems at three typical underground mines.

The results are based on real data from the operating VOD systems for two of these mines. The third example represents the savings estimated at the feasibility stage to demonstrate improved metrics for a development project.

Achieving cost savings with Ventilation on Demand (VOD)

The net energy savings presented by a VOD system including up-front capital costs typically are on the order of 1% of total mining and milling costs on a per-tonne basis. Therefore, considering the average mines profitability the implementation of VOD can increase net profit by 10% or more.

In addition, if VOD is considered at the feasibility stage or in concert with a major capital development project involving ventilation, there are often opportunities to reduce project capital costs by reducing fan and airway size.

Howden is an integrated manufacturer of hardware and software for mine ventilation control and automation. The VentSim™ CONTROL product line provides a complete Ventilation on Demand solution to help underground mines be more competitive.

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