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## Monitoring engine idle time at a US coal mine

Fuel is one of the single largest contributors to the cost of operations at any opencast mining operation. Rising fuel costs and the need for increased environmental sustainability highlight the urgency for more creative approaches to fuel conservation.

### Reducing idle time at a large opencast coal mine

In 2010, a dispatch manager at one of America's largest and most productive coal mines observed that large equipment was often left running while stationary. Further investigation revealed that operators routinely left their equipment unmanned and idling for extended periods of time – a practice that resulted in large quantities of wasted fuel and unnecessary wear and tear on engines and other components.



As a long-time user of Modular's DISPATCH® fleet management system, the mine turned to Modular to help them identify and manage the occurrence of idle events and reduce rising fuel costs. Modular worked with mine personnel to conceptualise and develop a solution to help increase awareness of wasted fuel: the DISPATCH idle monitor module.

The idle monitor module utilises real-time operational data acquired through the DISPATCH system's 100+ OEM interfaces to trigger a series of alerts based on the elapsed time a machine has been running but immobile. A combination of email messages and DISPATCH system exception messages notify operators, dispatchers, supervisors and mine managers that an infraction has occurred.



Configurable parameters let users determine at what intervals and to which recipients notifications are sent. “Each mine works differently,” said Neil Ferreira, product manager, fleet management at Modular. “To accommodate our customers’ unique needs, we build flexibility and configurability into all of our solutions.”

### Improving air quality and reducing maintenance requirements: added bonuses

Decreased engine idling not only reduces fuel costs, but also improves air quality through lower emissions per each equipment unit monitored. Mines and surrounding communities also experience a reduction in noise levels. One of Modular’s customers, who implemented the module across their diesel-fueled, heavy equipment fleet, realised nearly US\$ 1 million in annual fuel cost savings. By making one simple change, such as turning equipment off during 30 min lunch breaks, the mine could reduce CO<sub>2</sub> emissions by more than 2500 t, the equivalent of taking 546 passenger vehicles off the road, according to the US Environmental Protection Agency’s Greenhouse Gas Equivalencies Calculator.

Substantial savings can also be found in the area of preventative maintenance. By reducing the amount of time engines are left running on immobile equipment, the time span between engine-cycle-based maintenance events can be extended. By monitoring idle time, trends can be found to identify and increase awareness of undesirable

practices, such as letting trucks run to avoid hot cabs in the summer or restart problems in the winter. With less non-productive wear-and-tear, engines need to be rebuilt or replaced less often, resulting in lower equipment expenditures.

The idle monitor module has proven to not only be effective in helping mines use less fuel, but also minimise unscheduled maintenance events, improve operational best practices and reduce their carbon footprint.

Written by Modular Mining. Edited by [Jonathan Rowland](#)

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