



NRG1-ECO®

NRG1-ECO is an innovative mine-wide energy management solution.

It provides system control strategies that dramatically reduces energy consumption while maximizing productivity, profitability and worker safety. A staggering 60% of a mine's electrical costs come from the energy required to circulate air. Most mine ventilation systems operate at peak capacity 100% of the time and require manual activation. Yet with NRG1-ECO ventilation management module, the system's air flow is controlled in order to meet production activities and reduce energy costs.

Air Flow Option

NRG1-ECO analyzes air quality data and the location of mining personnel and vehicles, adjusting the ventilation accordingly in a fail-safe manner. The NRG1-ECO system is configured to each mine's unique requirements and designed with an open architecture that allows system integration with mines' existing or new equipment.

Dewatering Option

An additional 20% of a mine's energy costs come from dewatering. NRG1-ECO is able to control dewatering systems and is able to leverage opportunities to reduce energy consumption such as pumping during off-peak periods.

NRG1-ECO – Software Suite

NRG1-ECO Services communicate to the Intelligent Zone Controller (IZC), and is configurable through a state-of-the-art drag-and-drop control system powered by the revolutionary AutoGen technology. Historical data is stored to any number of desired sources (database, data historian, etc.).

Integration to existing mine software and systems is provided as a value added service. Web based interfaces clearly display NRG1-ECO data and users with appropriate credentials are able to adjust the control settings as needed.



Levels of Control

Manual Real-Time

Allows user control of devices through a web interface.

Time of Day Scheduling

Automatically adjusts devices at specific times of the day such as the start or end of a shift.

Event Based

Devices will be stopped, started or adjusted based on an operational or programmed event.

Environmental

Responds to environmental sensor networks inside the mine to maintain air quality within regulated parameters.

Tagging (Activity Based)




Integrates with new or existing Real-Time Location Systems (RTLS) to deliver the required air flow based on personnel or vehicle locations in the mine.



Product Benefits

- ✓ Can reduce energy consumption by 30-50%
- ✓ Reduces the strain on power distribution system
- ✓ Increases productivity and profitability
- ✓ Diminishes greenhouse gas emissions
- ✓ Improves worker safety
- ✓ Integrates with and augments asset and vehicle tagging systems
- ✓ Controls and optimizes ventilation flows
- ✓ Supports other energy intensive systems within mines
- ✓ Monitors and logs air quality data

System Platform

-  **Operating System**
Microsoft Windows Server
-  **Database**
Microsoft SQL Server
-  **Code Engine**
AutoGen IPnP

Services

- Mine Integration

Product Features

<p>Environmental Monitoring Monitors and logs digital or analog sensor information, such as particulate, SO₂, CO, NO_x, barometric atmospheric pressure, temperature, humidity and air flow.</p>	<p>Blast Gas Clearing Capabilities Efficient clearing of blast gases allows for a reduction in downtime.</p>	<p>Tag Verification System (TVS) Kiosk web product to verify that tags are in good working order.</p>
<p>Fail-Safe Design Provides customizable failsafe responses that put personnel safety first in the event of communication and equipment failures.</p>	<p>Quick Location Tools Instantly locates personnel in case of an emergency or incident.</p>	<p>WebHMI Designer User friendly drag-and-drop interface for creating displays.</p>
<p>Open Architecture Integrates with new or existing systems, such as Allen-Bradley, Schneider Electric, Siemens, Cisco, AeroScout, Becker, Varis, Smart Tag, PI, ION.</p>	<p>WebHMI Environmental monitoring interface; Device control and monitoring.</p>	<p>Configuration UI User, role and permission management; Tag configuration and assignment; Batch configuration and scheduling.</p>
<p>3D Viewer Real-time monitoring of assets, devices and environment with a 3-dimensional interface.</p>	<p>Advanced Reporting Export data in various formats.</p>	<p>Historical logging (supports PI)</p>