

Motivation/Challenges

Real-time monitoring of outdoor operations such as gas drilling can be difficult due to power requirements, terrain that is often remote or poorly accessible, and the wide area over which sampling must be done. Thus, there is a need for wireless monitoring equipment powered by alternative, renewable energy sources.

Technology/Capability Overview

Modular, wireless telemetry of data from battery operated monitors has been developed to meet the challenges of outdoor monitoring. This system:

- Uses small, off-the-shelf equipment in modules that can be attached to solar powered, battery operated monitors to send data distances of up to 25 km between stations
- Generates data by numerous types of equipment, especially environmental monitoring equipment
- Has been tested with four different instruments, a direct reading dust monitor, a volatile organics monitor, a sound level meter and a light meter



Industry Significance

- Monitoring devices are able to operate continuously, can be moved and redeployed quickly, and in the case of a dust monitor, are shown to give readings equivalent to filter samples
- The devices are cost-effective as modules can be readily assembled from off-the-shelf components requiring little skill if the sampling device meets certain criteria for data output (direct digital data from the output port)

Benefits to Partner

- Experience adapting the modules to multiple situations with multiple instruments
- Four years of field experience, adapting the modules to varying environmental circumstances
- Knowledge of gas drilling operations, environmental sampling needs, and telemetry issues

Opportunity

There is a need for someone to commercialize the design – to provide a modular package that is customized or customizable to specific monitoring needs

Development Status

- Proof of principle has been done
- Field testing has been used to work out requirements for long-term use
- User-ready product is needed

Contact

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