

# Skyline High School Wind Turbine Project



# Skyline Background Information

- In cooperation with the Idaho National Laboratory (INL), Idaho Falls Power, Wheeler Electric, and the Idaho Falls School District #91, Skyline High School installed a Skystream 3.7 Wind Turbine to collect, post, and analyze data from the wind turbine, and provide hands on learning opportunities for students.



# Overview

- Vision
- Site Selection
- Pre-Approval
- Construction
- Cost
- Media
- Future Plans



# Why are you doing the project?

**Educational**

Financial

Environmental



# Educational Connection

- The National Science Standards identify the ability to use and understand Scientific Inquiry as essential to the development and education of all students in the United States.



# Site Selection Criteria

- Wind Availability
- Connectivity to Current Power Grid
- Visibility vs Attractive Nuisance
- Neighbor and Community Support
- Cost Associated with the Project

# Pre-Approval

- School District Approval
- Community Approval
- Net Metering Agreement

# Permits and Local Approval

- Conditional Use Agreement
- Building Permit
- Electrical Permit
- On Site Inspections

# Net Metering Agreement

- Many municipalities in the state of Idaho have net-metering agreements established.
- School districts can not only consume energy, but they also can produce power
- Check with local authorities to see how to enter into a net-metering agreement.

# Construction

- Foundation
- Pole Installation
- Connecting Blades & Turbine
- Connecting to the Grid

# 10' 6" Foot Hole



# Rebar

- 30 inch Diameter
- Tied together every 6 inches
- 21 rebar cylinders
- 10'6" length



# Bolt Kit

- Seven Anchor Bolts
- Connected with a template
- Put into the concrete



# Pouring the Concrete



# Installing the Pole

- Preparing the Pole
- Elevating the Pole
- Safety



# Connecting the Blades to the Turbine

- Proper Gear & Safety
- Attaching the Blades
- Securing the Nose



# Connecting to the Power Grid

- Utilization of electricians was needed to tie the wind turbine to the power grid and install a bi-directional meter



# Cost

- Skystream Wind Turbine \$7000
- Foundation & Installation \$5000
- Connecting to Grid \$2500
- Permits \$500
  
- **Partnerships Decrease Costs**

# Media

- News Releases
- Photo Opportunities
- Business Partnerships
- Control & Safety

# Future Plans

- Collaboration with Teachers & Patrons
- **Alternate Energy Center**
- Who Knows? Any Ideas?

# Making the Educational Connection

- As part of this project a Lesson Plan Depository has been started and is hosted on Idaho Falls School District 91 web page
- Attend Presentation on Saturday by Kris Smith for more information

# Contact Information

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