

Forest Service Partnerships with Electric Utilities: Two Possibilities

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Two Research Projects

- 1. Electric System Transmission Outages Caused by Wildfires**
- 2. Limited Conversion of Coal-fired Power Plants to Biomass-fired Power Plants**

1. Transmission System Fire Risk

- Large forest fires can cause transmission system operators to lower transfer capacity on transmission lines or to completely take transmission lines out-of-service.
- Work to quantify the annual cost and reliability risk that severe wildfires place on transmission system operations.
- Work collaboratively with electric utilities, NERC, and WECC.

Phase I: Wildfire Risk/Cost

- How many times per year are transmission lines forced out-of-service due to wildfire risk?
- How many times per year do transmission system operators limit the transfer capacity on a transmission line due to wildfire risk?
- What is average size (in MW of transfer capacity) and average duration (in hours) of these outage/derate events?
- What is the cost electricity customers?

Phase I: Preliminary Results

- **Average of 73 outages per year**
- **Approximately 5 percent of all outages**
- **56 percent of fire initiated outages last less than 1 hour**
- **94 percent of fire initiated outages last less than 1 day**

2. Limited Coal Plant Conversion

- **U.S. EPA is developing proposed standards to regulate greenhouse gas emissions from existing sources under Section 111(d) of the Clean Air Act.**
- **Limited conversion of existing coal-fired power plants to biomass-fired power plants may be the best option for achieving greenhouse gas emissions reduction goals, maintaining electric system reliability, and mitigating rate shock.**

Limited Conversion?

- Identify a small number of existing coal plants located near federal lands?
- Limit plant operation with biomass to winter and summer months for reliability?
- Limit forest biomass from federal lands to a small percentage of overall fuel supply?
- Torrefaction at collector stations near federal lands with rail transport to existing plants?

Benefits of Conversion to Biomass

- **Maintains electric system reliability requirements without switching to natural gas-fired plants.**
- **Mitigates the rate shock associated with a more abrupt transition to wind, solar, and natural gas resources.**
- **Helps to develop a diverse fuel supply chain that can kick-start the market for biomass fuel.**

More Benefits

- **Helps achieve greenhouse gas emission reduction goals.**
- **Helps to reduce the risk of severe wildfires in the western U.S.**
- **Promotes economic development in rural communities.**

Thank YOU

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