NaturEner US:
Renewables and the Transmission Markets
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NaturEner Overview

- NaturEner has developed and put into operation 399 MW of wind assets in MT, representing more than a billion dollars of capital deployment
  - Glacier 1: 106.5 MW
  - Glacier 2: 103.5 MW
  - Rim Rock: 189 MW
- NaturEner is also the anchor tenant on the MATL line, and owns all Northbound capacity on the line. This is the primary revenue stream required for that asset to proceed
- Project portfolio represents real incremental value to the State and to the local communities where the projects are present
- Our projects production, in conjunction with energy associated with our BA activities and energy movement associated with our MATL position, represent a significant increase to overall power flows through the region
Deep, Multi-Functional Expertise

- Balancing Authority management - NOC
- Renewable energy production forecasting and scheduling
- Renewable energy operations and maintenance
- Power project development
- Renewable energy design and engineering
- Innovative corporate and project finance
Transmission Overview

- Regional transmission markets are clear and open marketplaces
- Transmission is becoming increasingly capacity constrained
- Different scheduling horizons and protocols create seams issue when flowing through the region

Markets:
- MidC: Bi-lateral marketplace, diverse portfolio of products and pricing structures
- Alberta: Centrally cleared, difficult scheduling windows and protocols
- Others: California, transmission scarcity, distance exposes flows to increased curtailment
Transmission in MT: Renewables

- Available Capacity Limited
  - Short term purchases of firm and non-firm transmission limited
- Difficult economics to support Long Term Firm purchases and to underpin new builds
  - Intermittent nature of wind production makes buying 7x24 transmission expensive
  - Anchor tenancy positions for new builds are difficult
    - Intense economics pressures
    - COD Uncertainty
    - Collateral requirements
- Integration Services
  - Difficult and expensive service
  - Financing requires stable term service provisions
- Lack of liquidity in the Intra Hour transmission market
Future Growth

NREL Western Renewable Integration High Wind 2020 Scenario

Installed Capacity Increase [MW]

Wyoming
Washington
Montana
Oregon
New Mexico
California
Nevada
Colorado
South Dakota
Utah
Arizona
Idaho
Texas

http://www.nrel.gov/electricity/transmission/western_wind.html