EcoEnergy
Renewable. Responsible. Right now.

EcoNet
INTELLIGENT POWER COLLECTION NETWORK

Lower Construction & Operating Costs. Increase Reliability.

The EcoNet Intelligent Power Collection System uses a unique design process developed to minimize lifecycle costs and to maximize returns for multi-generator power collection in wind projects. The EcoEnergy patented process uses a network of parallel and redundant current paths to increase reliability and reduce both operating losses and system outages.

The EcoNet Advantage:

Lower Construction Costs

- **Transformer Cost Reduction:** Reduce the number and capital cost of transformers.
- **Readily Available Components:** Customized solutions based on materials available in project timeline
- **Lower Maintenance Costs:** Fewer transformers to maintain.
- **Increased System Reliability:** Redundant conductor paths, fewer terminations
- **Fault Isolation:** Allows individual generators to be taken out of service without affecting adjacent generators
- **Reduced Operating Power Losses:** Reduced power losses through efficient cable system design.

EcoNet Projected Savings: $2.2 Million on a 100MW Wind Farm

EcoNet Is Flexible

The EcoNet network design process can be applied to any network of three or more generators, to reduce both upfront transformer costs and annual operating power losses. Additionally, system reliability is increased when parallel current paths are included in the network design. When the EcoNet process is applied to a large network of generators, such as wind farms, the final network topology is influenced by the physical layout of the generators, and the distances between them. Each network design is unique.

The EcoNet network optimization process allows for the flexibility needed to accommodate large networks, by allowing a combination of both looped and radial network segments. The EcoNet system can accomodate both topologies, taking advantage of the benefits of each type where appropriate.

To add to this flexibility, several innovative EcoNet protection options have been developed. The goal of each option is to minimize the extent of network outages when problems do occur, while offering different degrees of protection automation. The EcoNet optimization process identifies which protection option is appropriate for different networks or network segments.

The flexibility offered by EcoNet allows any generator network, large or small, to reduce initial costs, reduce operating costs, and achieve enhanced system reliability.

EcoNet Savings:
$2,200,000 on a 100 MW Facility

$1,700,000	**Construction and Installation Savings**—Based on actual transformer, cable, and installation bids. Projected for a 67 turbine model facility, using 1.5 MW turbines.
$470,000	**Operation Savings**—Present value, assuming an energy value of $.07/KWH, including lost PTC's and REC's, and a wind project capacity factor of .35, the annual value of reduced power losses from the EcoNet system is estimated to approximately $4,300 per six generators. This amounts to more than $48,000/year for all 67 generators, excluding any optimization of the 34.5kV portion of the network where similar principals will yield additional savings.

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