**Wind & Hydro Power Technology Spring 2011 Incentives**

Produce a professional report which provides a narrative description of incentives and economics and shows calculations for economics and wind energy output estimates

1. Visit [www.dsireusa.org](http://www.dsireusa.org) and find the state and federal incentive program for both residential and commercial wind energy and provide a summary of the incentive (eligibility, payments, credits….)
2. Estimate the cost of a Bergey Excel wind turbine after applying the state and federal residential tax credits
3. Estimate the cost of a Northern Power 100 commercial wind system after applying the state and federal tax credits

 4. Calculate the estimated annual energy output if the turbines were operated on Beech Mt

 (use 37 meter tower options for both turbines and use Windographer for estimates)

 5) Calculate the economics of these wind turbine on Beech Mt Include the following:

 a) Simple payback

 b) Return on Investment

 c) Cash flow analysis (use Bergey excel spreadsheet and Solar Center’s tool)

 **Assumptions for cash flow analysis:**

1. Electricity costs - $.10/kWh
2. Electricity Inflation rate: 1%
3. Loan downpayment: 10%
4. Interest rate: 6%
5. Month Installed: 1
6. Net federal tax rate: 34%
7. Net State Tax rate: 8%
8. O&M costs : $.01/kwh
9. O&M inflation rate: 2%
10. State Tax credit: 35% up to $10,500
11. Federal tax credit: 30%