A Wind Powered Western

As proposed by
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Executive Summary

- Western Washington University has goal of carbon neutrality by 2050.

- We propose the creation of a university wind farm to achieve this goal.

- Project targeted at financing research.
Statement of Need

- With Western’s current actions the climate action goal is simply unreachable.

- Western needs an efficient and productive way to offset their carbon based energy demands.
Project Description

- **Objective:** Research and review financing strategies and options for such a project.

- **Method:** Analyze other university wind projects, and financing avenues.

- **Goal:** Present the viability of a university wind farm in effort to move project further.
Case Study

Wild Horse Wind Farm (Kittitas County, WA)

- Located near Ellensburg (Central Washington)
- Consists of 149 wind turbines
- 10,000 acres
- Installed and operated by Puget Sound Energy
- 12 year payback period
Case Study

Whitman College (WA)

- Project owned and operates under Florida Power and Light Company (FPL)
- There are 70 wind turbines on Whitman property
- Whitman leases the land on wind farm to FPL
- Receives royalty payment about $100,000 per year
- While Whitman leases the land and receives royalties for the electricity generated, the electricity is owned by FPL and is sold to the BPA.
Case Study

Luther College (Iowa)

- Project costed $3.2 million
- Estimated 13 year payback period
- Funds:
  - $500,000 grant from US Department of Agriculture
  - $928,000 guaranteed loan under their Rural Energy for America Program
  - $971,249 grant from US Treasury Department
  - Receives 476C tax credit for renewable energy, adds about $50,000 per year to projects bottom line.
Current Investment

- In 2005, Western implement a student fee to purchase $50,000 of Renewable Energy Credits (REC)s yearly.

- Flaw in RECs is that they do not actually produce or pay for production of energy.

- Wind power is more productive than other methods.
WWU generation requirements

- Western’s current annual electricity usage is 36,000,000 kWh (kilowatt hours)
- A single turbine produces: 4,380,000 kWh/year

- In order to completely offset WWU’s electricity usage we would need:
  - 8 (2 MW) wind turbines
  - Purchase and installation roughly costs: $24 - $32 million

- Land lease lasts 25-50 years
- Payment type:
  - $5,000-$8,000 royalty for every turbine
  - 3-5% of gross earnings
Project Financing

A project such as this has multiple aspects involved in creating the complete final budget, including the following variables.

- Land Requisition
- Partnerships
- Type/Size of Farm
- Project Timeline
Funding Avenues

- **State Funds:**
  - WA Department of Commerce sponsored, Energy Efficiency and Solar Grant:
    - $25 million to be allocated in years 2016/2017.
  - WSHFC Sustainable Energy Program (Loan):
    - Loan options up to $1 million for renewable projects, rolling acceptance.

- **Federal Funds:**
  - Renewable Energy Production Tax Credit (PDC):
    - Expected $828 thousand tax credit for each year, 2016/17.
  - Renewable Energy Sales Tax Exemption:
    - 75% tax exemption for production machinery/turbine purchases in 2016/2017
Wade King Student Rec Center

- Students pay quarterly $99 recreation fee to help fund the REC Center.
  
  - Fee mandatory in full-time tuition
    - Mostly goes unnoticed
  
- Initial cost of $24,000,000, student participation reduced University investment considerably
  
- Highlights useful potential strategy for wind power student involvement.
Payback Period
University Benefits of Project Success

- Abundant Advertising and Marketing opportunities
- Utilize completed research and project framework
- Future sustainability management courses
- Potential Sustainable agriculture courses
- Potential Arts/Marketing projects
- Field trip opportunity for many courses!
The success of a project of this stature shall be understood two ways:

- Financially
- Productivity
Final Statement.

- As a key university decision maker, you have the opportunity, and the responsibility, to take action, move this project forward, and be a part of Western Washington University’s successful sustainability promise.
Thank you for your time.