

# Economic Impacts of Wind Power in Kittitas County



Stephen Grover  
**ECON**orthwest

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# Wind Project Background

- Two wind companies (Zilkha, enXco) proposing wind projects in Kittitas County, Washington (Population = 32,000)
- Combined projects will have approximately 260 turbines and 390 MW capacity.



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# Study Objectives

## Primary Analysis Questions:

- 1) Determine effect of wind turbines on residential property values
- 2) Determine economic impacts to local economy
- 3) Estimate new tax revenues for Kittitas County from proposed wind farm.



# Property Value Impacts

- Project opponents assert that views of wind turbines will diminish property values
- County tax assessors contacted as best source of unbiased information on property values
- Also reviewed literature on wind farms and transmission lines.



# Tax Assessor Survey

- Selected counties with comparable wind projects
- Selection criteria included:
  - Wind farms of comparable size
  - Projects that have been around long enough to have assessments adjusted
  - Turbines within view of residences



# Assessor Survey Results

- Sample of 22 wind projects in 13 counties
- Within sample, 6 counties had residences with views of turbines, 6 did not have residences with views, and 1 had views but was too new to determine effect on property values
- For all the counties we interviewed, none of the assessors changed property assessments based on views of the turbines.



# Economic Impacts

- Impacts estimated assuming 260 turbines built (110 by Zilkha, 150 by enXco)
- Estimated effects of both construction and operations phase
- Counted only employment and spending that occurs within Kittitas County.



# Economic Impact Estimation Methods

- Each dollar spent in a community will be spent multiple times
- Used an “Input-Output” model to estimate:
  - ***Direct Effects:*** Result directly from wind project spending
  - ***Indirect Effects:*** Secondary impacts from supporting industries
  - ***Induced Effects:*** Result from spending due to increased income from direct and indirect effects



# Construction Phase Inputs

- Construction will employ 95 full and part time laborers and managers
- For our model, construction phase assumed to last one year
- Over \$7 million will be spent locally on materials, equipment rental, non-local labor lodging and per diem, etc.



# Construction Economic Impacts

<b>Impact Type</b>	<b>Wages &amp; Other Income</b>	<b>Business Income</b>	<b>Total Income</b>	<b>Jobs</b>
Direct	\$8,808,000	\$1,027,000	\$9,835,000	95.2
Indirect	\$974,000	\$139,000	1,113,000	30.3
Induced	\$1,284,000	\$225,000	1,509,000	60.0
<b>Total</b>	<b>\$11,066,000</b>	<b>\$1,391,000</b>	<b>\$12,457,000</b>	<b>185.5</b>



# Operations Phase Assumptions

- Operations phase will employ 22 people to operate and maintain wind turbines
- Rents to land owners are \$4,500 per turbine
- Non-labor operations and maintenance spending (materials, rentals, etc.) will be about \$900,000 annually.



# Operations Economic Impacts

<b>Impact Type</b>	<b>Wages &amp; Other Income</b>	<b>Business Income</b>	<b>Total Income</b>	<b>Jobs</b>
Direct	\$2,984,000	\$216,000	\$3,200,000	22
Indirect	\$99,000	\$30,000	\$129,000	3
Induced	\$833,000	\$105,000	\$938,000	28
<b>Total</b>	<b>\$3,916,000</b>	<b>\$351,000</b>	<b>\$4,267,000</b>	<b>53</b>



# Tax Revenue Impacts

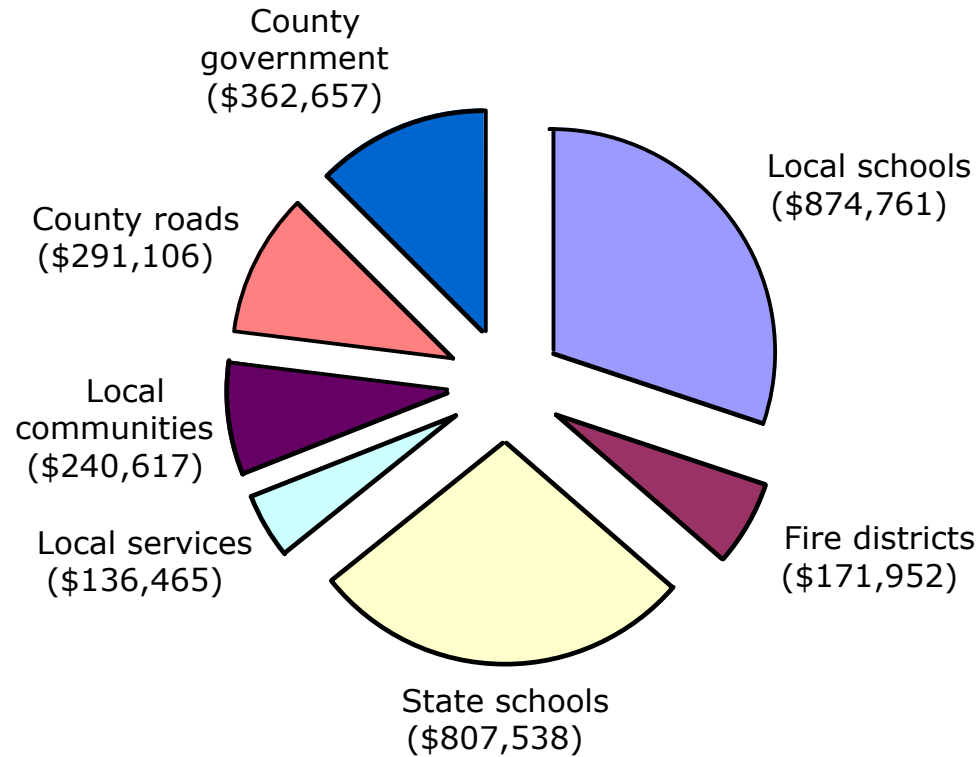
- Estimated potential tax revenues created by the wind farm for major revenue sources
- Focused on revenues accruing to Kittitas County
- Does not address taxes levied to cover costs of extending services (SDCs).



# Property Tax Revenues

- Property taxes account for most of the expected tax revenues
- Revenues estimated based on taxable value of wind turbines and from increased economic activity in Kittitas County
- New property tax revenues estimated at almost \$2.9 million annually
- Does not address Initiative 747.

# Allocation of Property Tax Revenues





# General Benefit-Cost Framework

Need to characterize analysis framework:

- Who has standing?
- What sectors of the economy will be impacted?
- What are the potential costs and benefits that should be considered?
- Which groups will benefit and which will pay the costs?



# Tourism

- Not important to Kittitas County, but very important in Cape Cod
- Determinants of tourism demand include:
  - Income
  - Distance from population centers
  - Amenities (natural attractions, hotels, restaurants, etc.)



# Characterize Tourism Market

- Current tourism spending
- Travel distances
- Tourist categories:
  - Over night
  - Day trips
  - Friends and family
- Determine potential market based on income levels within travel region



# How Might the Tourism Market Change?

- Focus on those sectors that are most likely to be impacted by the wind farm
- Are there reasonable alternative tourism choices?
- Other studies may have results that can be applied to Cape Cod.
- Survey people in the sector to determine how behavior might change
- Stated preferences tend to overstate actual behavior



# For More Information...

Contact:

Stephen Grover

**ECON**orthwest

888 SW 5th Avenue, Suite 1460

Portland, OR 97204

(503) 222-6060

Email: [grover@portland.econw.com](mailto:grover@portland.econw.com)

Website: [www.econw.com](http://www.econw.com)