

Wind Industry: Economic Development Opportunities



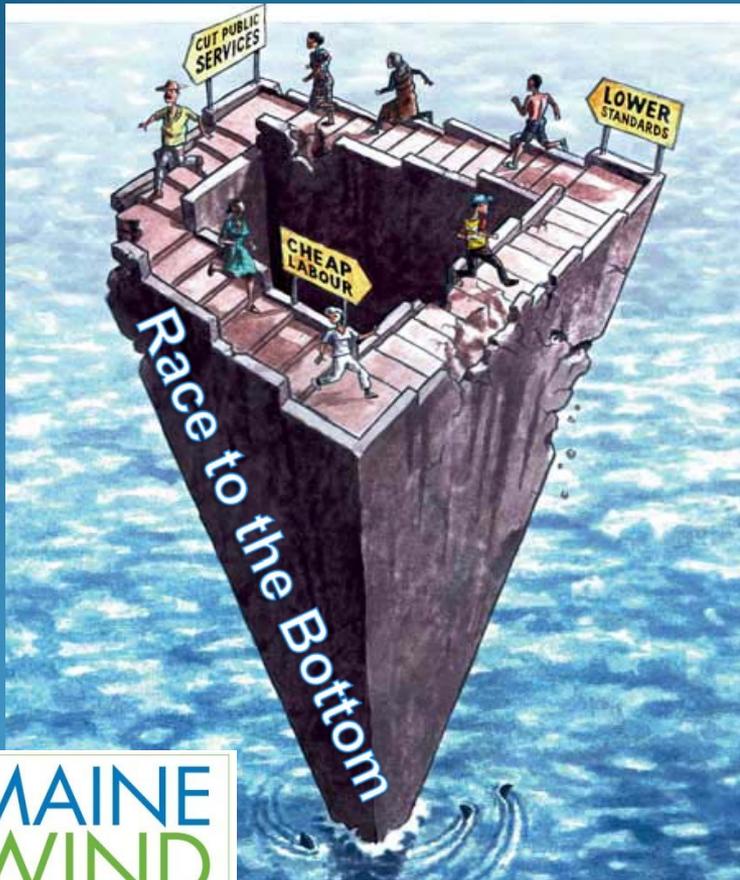
THIS AMERICAN LIFE FROM WBEZ

**Episode 435:
How to Create a Job
Originally Aired 5/13/2011**



2 Choices:

Compete Among
States for Jobs



Collaborate to Build a New,
Competitive National Industry

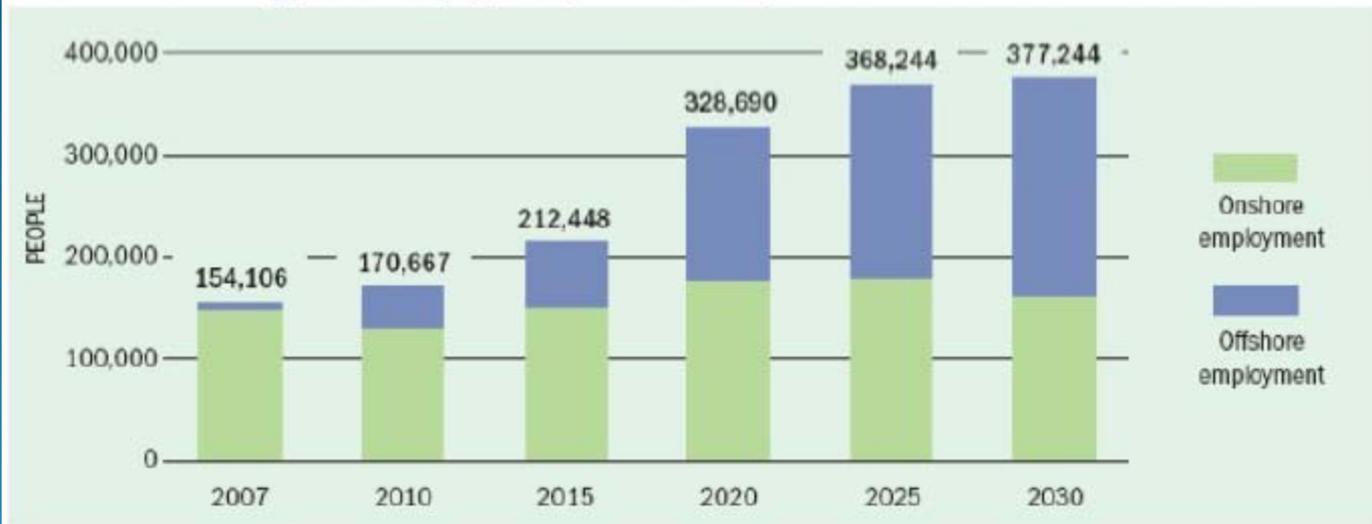




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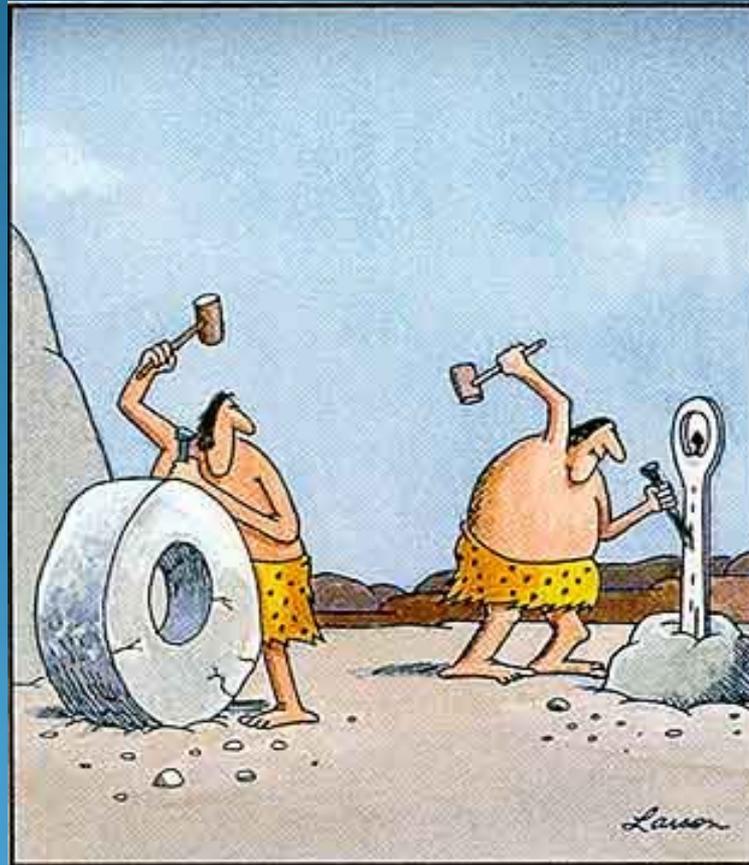
162,000

FIGURE 02: Wind energy sector employment (EU 2007-2030)



Source: EWEA

New Technology = New Opportunities



Types of Direct Jobs (based on EU experience)

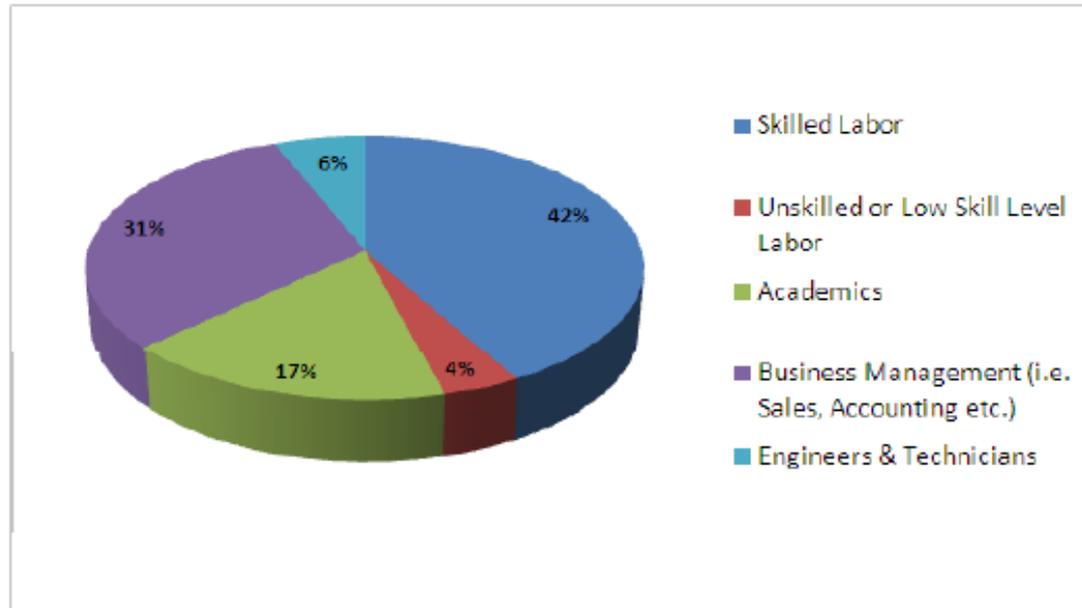
- 59% Turbine and Component Manufacturing
- 16% Installation
- 11% Maintenance and Operation

Typical US Turbine Manufacturing Site with 250 Employees will have 126 Occupations from Janitors to Engineers



Wind Energy : Economic Development Opportunities, June 2011

Qualification Levels in the German Wind Industry (2007)



Data Source: WiLa Bonn (Research Institute)

Skilled labor in a German context refers to employees with a minimum of 3 years apprenticeship/vocational training and certificate.

Types Of Jobs



European Wind Industry Employment Trends – Example Germany

- The German Wind Energy Industry comprises:
 - Turbine Manufacturers
 - Component Manufacturers (Tower, Blades, Gear Boxes, Lubricants etc.)
 - Installation and Construction Companies
 - Grid Integration Companies
 - Grid Integration Component Manufacturers
(Generators, Transformers, Converters)
 - Maintenance and Monitoring Services
 - Personnel Training
 - Consulting, Project Management and R&D Services



Local Impact: 2 Stories based on 3000MW

Scenario 1:

assumes that Maine would have the full supply chain locally, including turbine production

Estimated # of Annual Jobs to reach installation targets for 2020

Location	# of 5MW Turbines installed	Total annually installed MW	Construction Jobs	Total Supply Chain Jobs	Factor used per MW
Onshore	200	1,000	5,000		5
Offshore	25	125	663		5.3
Total	225	1,125	5,663	16,988	15.1

Scenario 2:

assumes that Maine has only limited local supply chain and no local turbine manufacturing

Estimated # of Annual Jobs to reach installation targets for 2020

Location	# of 5MW Turbines installed	Total annually installed MW	Construction Jobs	Total Supply Chain Jobs	Factor used per MW
Onshore	200	1,000	2,000		2
Offshore	25	125	663		5.3
Total	225	1,125	2,663	1,688	1.5

Factors that May Affect Local Supply Chain Development

- Availability of Local Resources
- Transportation Logistics: Size Matters
- Market Demands:
 - Local Energy Policies and Goals
- Expertise that Attracts Investment



Expertise that Attracts Investment

- Existing Industry with Transferable Skills
- Experience in Wind Energy
- Existing Industry Exporting Wind Energy Products
 - Suppliers to other regions
- Workforce Availability
- Training and Education



Total # of Wind Energy related companies in Germany= 3,500

- 2003 and 2008 Export Share Grew from 58% to 87%

2006 -2008 German Domestic Market Declined by 25%

- 2006-2008 German Wind Jobs Grew from 70,000 to 90,000

Lessons

- Collaborate Regionally: **Avoid Race to the Bottom!!!**
- Establish Local Driven Demand for Wind Energy
- Build on Transferable Knowledge
- Compete Globally
- Pursue Export Opportunities (UK??)
- Invest in Workforce Skills



www.mainewindindustry.com

Paul Williamson
pw@mainewindindustry.com