

## **Attachment 2: Reed & Reed Memorandum Regarding Tangible Benefits**

### **Tangible Benefits of Off Shore Wind Power to Maine**

This analysis discusses the potential tangible direct economic benefits to Maine businesses and workers arising from construction of off shore wind power. It does not seek to balance them with other benefits including a probable reduction fossil fuel consumption, reduction in dependence on foreign oil, improved stability of electricity prices due to elimination of variability in fuel prices or a reduction in greenhouse gas emissions. That evaluation is left to others.

Instead this analysis focuses on the potential tangible economic benefits that would likely be derived by Maine companies and workers from a program of offshore wind power investment.

The opportunity for tangible economic benefits would likely occur during one of the following phases of a typical wind power project:

- Permitting and Pre-Construction Services
- WTG Manufacturing
- Construction and Installation
- Operations & Maintenance

Assuming Maine has jurisdiction over offshore wind power projects, Maine businesses and workers could theoretically provide a range of services:

1. Permit and Pre-Construction Services
  - a. Survey
  - b. Permitting assistance
  - c. Electric interconnect studies
  - d. Marine life studies
  - e. Avian studies
2. WTG Manufacturing
  - a. Tower bases
  - b. Anchor and anchorage systems
  - c. Blades
3. WTG Construction and Installation
  - a. Fabrication, launching and installation of WTG bases
  - b. Fabrication and installation of anchoring systems
  - c. Construction of on-shore transmission lines and substations

## Attachment 2: Reed & Reed Memorandum Regarding Tangible Benefits

- d. Construction of collector system and substation interface
  - e. Home porting for construction vessels
  - f. Staging areas for construction activities
  - g. Long shoring services for WTG components
  - h. Other infrastructure (piers, docks, etc)
4. Operations & Maintenance
- a. Land-based O & M facilities
  - b. Homeport for service vessels

The fabrication and installation of WTG substructures/foundations may account for a third or more of the cost of a completed wind turbine. This type of work *may* be within the range of skills and resources that Maine firms possess thus Maine firms *may* be qualified to undertake this work, depending on the water depth and applied technology:

- Near shore projects (up to 100 feet water depth) likely require fixed foundations for WTGs. Maine companies are suited to and capable of doing this work.
- Transitional Depth (100 to 160 feet water depth) Maine companies may be able to perform the foundation work in these depths but do not presently have the experience, resources or skills.
- Deepwater (over 160 feet) installations will not likely have fixed foundations and will require specialty equipment and technologies to install these substructures. Maine companies do not currently have this experience or skill set.

There are at least four reasons why Maine companies will have difficulty participating in the fabrication and installation of Transitional and Deepwater WTG installations:

1. WTG substructure fabrication is being sourced all over the world, including Asia and Southeast Asia where the cost of labor ranges from less than one dollar per hour to two dollars per work hour. Maine companies' cost of labor is much higher and even taking into account the cost of ocean transport from Asia to Maine, it will be difficult for Maine companies to compete for this work.
2. Deep water, offshore installations are often engineered and installed by vertically integrated manufacturers who may not be willing to subcontract WTG installation if that means idling their own resources.
3. WTG procurement agreements often include contractual performance guarantees. As a result, WTG suppliers are not willing to assume the risk of having a local company of unknown experience install their turbines. This is different than land based turbines where the developer typically buys the turbines and arranges with local contractors and suppliers to perform the installation.

## **Attachment 2: Reed & Reed Memorandum Regarding Tangible Benefits**

4. Subsea cable installation is performed by specially designed cable laying ships. These ships have the technological capability and enjoy economies of scale that cannot be duplicated by alternate means.

It is always possible that these disadvantages can always be overcome. However, economic reality, competing forces in world markets and other factors beyond our control make this unlikely.

There is an inherent conflict between competing interests for deepwater and near shore wind power:

- Deepwater and transitional depth projects, if properly sited, minimize the risk of impact on marine life, scenic vistas and maritime navigation but they offer the least tangible economic benefit to Maine businesses and workers.
- Shallow water projects provide the greatest potential tangible economic benefits but carry much greater potential impact on marine life, scenic vistas and navigation.

### Conclusion

Near shore wind projects would likely produce the greatest tangible benefits while deepwater projects would produce the least.

Maine companies and workers could provide a range of support services but WTG manufacturing and the bulk of the construction work would ultimately go outside of Maine.

We believe off shore wind developers should be strongly encouraged to obtain the maximum practical participation from Maine businesses and workers. We do not believe there should be quotas or specific targets for this participation and we do not support or propose protectionist measures that provide preferential treatment programs in contracting. We believe competition is a fair and powerful market force. However, where tax incentives or benefits are involved it might be reasonable to require the WTG components be produced in the United States.

Jackson A. Parker  
President & CEO  
Reed & Reed, Inc  
Woolwich, Maine

[jparker@reed-reed.com](mailto:jparker@reed-reed.com)

February 10, 2009