



Pioneer Wind Energy Systems, Inc.
Maine Wind Energy Conference 2011

POWER TO THE PEOPLE

Daniel Charette, President
Secretary of CanWEA

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Introduction

Overview

Pioneer Wind Energy Systems, Inc. (PWES) is a wholly own subsidiary of Pioneer Power Solutions Inc. with headquarters in Fort Lee, NJ.

Pioneer Power Solutions is a publicly traded company on the OTCB under the tag PPSI.

In Q3-2010 Pioneer has acquired all the assets of the former company AAER Inc. From Bromont (QC)

Highlights

- Pioneer Power Solutions own two other companies:
 - Pioneer Transformers, located in Granby (QC) which manufacture pad mounted transformers for wind and industrial application.
 - Jefferson Electric, located in (WI) which manufacture dry type transformers for industrial and solar application.
- Pioneer Power Solutions total revenues are +\$75M (without the wind division)

Introduction

Overview

Pioneer Wind Energy Systems, Inc. (PWES) is an Original Equipment Manufacturer (OEM) of 1,65MW Wind Turbine Generator (WTG).

PWES uses existing certified designs and components in order to provide a high level of reliability while progressively certifying and integrating North American component suppliers to maximize control over its supply chain and costs.

Highlights

- Licensed to manufacture, sell and service wind turbines in United States, Canada and Mexico
- Proven European design and sub-component manufacturers
- New assembly facility will be located either in USA (mid-west) or Canada (ON)

Introduction

PWES niche market is:

**Community and small
scale Utility wind
Projects ranging from
sizes of 1.65MW to
10MW**

Power to the people



PWES Going Forward

Short Term

- Focusing sales on small and medium scale projects.
- Putting in place our definitive collaborative agreement with a larger partner.
- Re-starting our own production with a strong manufacturing partner.
- Re-starting all our O&M operations.

Long Term

- Complete the development of the new platform.
- Be the “preferred and best” partner in community wind.

Mid Term

- Focusing sales on small, medium and develop sales on large scale projects.
- Becoming the “Preferred” partner in our collaborative agreement.
- Increasing manufacturing capabilities.
- Increasing N.A. content.
- Consolidation of our O&M operations.
- Initiate the development of a new 3.X platform

Our Technology

P-1650

- **Origin: AMSC-Windtec**
- **Output: 1.65 MW**
- **Tower Heights: 65, 70, 80 and 100 meter**
- **Rotor sizes; 77 and 82 meter diameter, Pitch controlled**
- **Generator Type: Asynchronous with variable speed**
- **Voltage Control: IGBT, D-Var and LVRT capabilities**
- **Optimized technology targeted for small to medium wind farms in North America**
- **Strong and robust design**
- **Reliable**

Our Technology

P-1500/P-1650

- First WTG installed in 1998 under Pfeleiderer/Windtec
- Wind division sold to Fhurlander in 2004
- 1500 technology sold to AAER, Ebara (Japan) and Sinovel (china)
 - Over 4500 WTG's installed to date
 - Few North American installations
- 1650 technology license to AAER and Hyundai for the US-Canada markets
 - AAER has installed 5 WTG's in N.A.
 - AAER has sold to Hyundai first kit for WTG install in Ulsan, South-Korea
- Town of Portsmouth WTG has been running with over a 100% availability

Our Technology



Collaboration Agreement

Having the same technology, but not the same experience in the North American market, PWES and Hyundai Heavy Industries have decided to collaborate and grew together into the market, while PWES has a strong knowledge of the market and its requirements, HHI has higher financial and production capabilities.

Existing Projects

Customer	Location	Install Date	Equipment
US Marine Corps	MCLB Barstow, CA	January 2009	One P-1500
Town of Portsmouth	Portsmouth, RI	March 2009	One P-1500
Windland Repower II	Tehachapi, CA	September 2009	Two P-1500
Templeton Light & Water Dept.	Baldwinville, MA	May 2010	One P-1650

All WTG's were design and built has 1650Kw but some were de-rated to lower capacity because of grid or contract constraints.

US Marines, Barstow (CA)

Marine Corps Logistics Base Wind Turbine Project Barstow, California



- Marine Corps & Southern California Edison collaborate on project.
- AAER supplies wind turbine.
- A-1500/77 wind turbine generator
- 1.0 MW
- 77 meter rotor
- 65 meter tower

US Marines, Barstow (CA)



US Marines, Barstow (CA)

SOUTHERN CALIFORNIA EDISON
LEADING THE WAY
Phill Coniglio

1st in
Tom
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PWO/R



Town of Portsmouth (RI)

Municipal Wind Turbine Project Portsmouth, Rhode Island



- Municipal project constructed at the town's high school.
- Turnkey solution; AAER providing wind turbine and B.O.P.
- A-1500/77 wind turbine generator
- 1.5 MW
- 77 meter rotor
- 65 meter tower

Town of Portsmouth (RI)



Follow the installation on National Geographic; World Toughest Fixes

http://channel.nationalgeographic.com/series/worlds-toughest-fixes/4218/Videos/06703_00

The project web site:

<http://www.portsmouthrienergy.com/windpower.htm>

Town of Portsmouth (RI)

The Economic Development Committee of the Town of Portsmouth had work hard to get WTG, they were almost all volunteer;

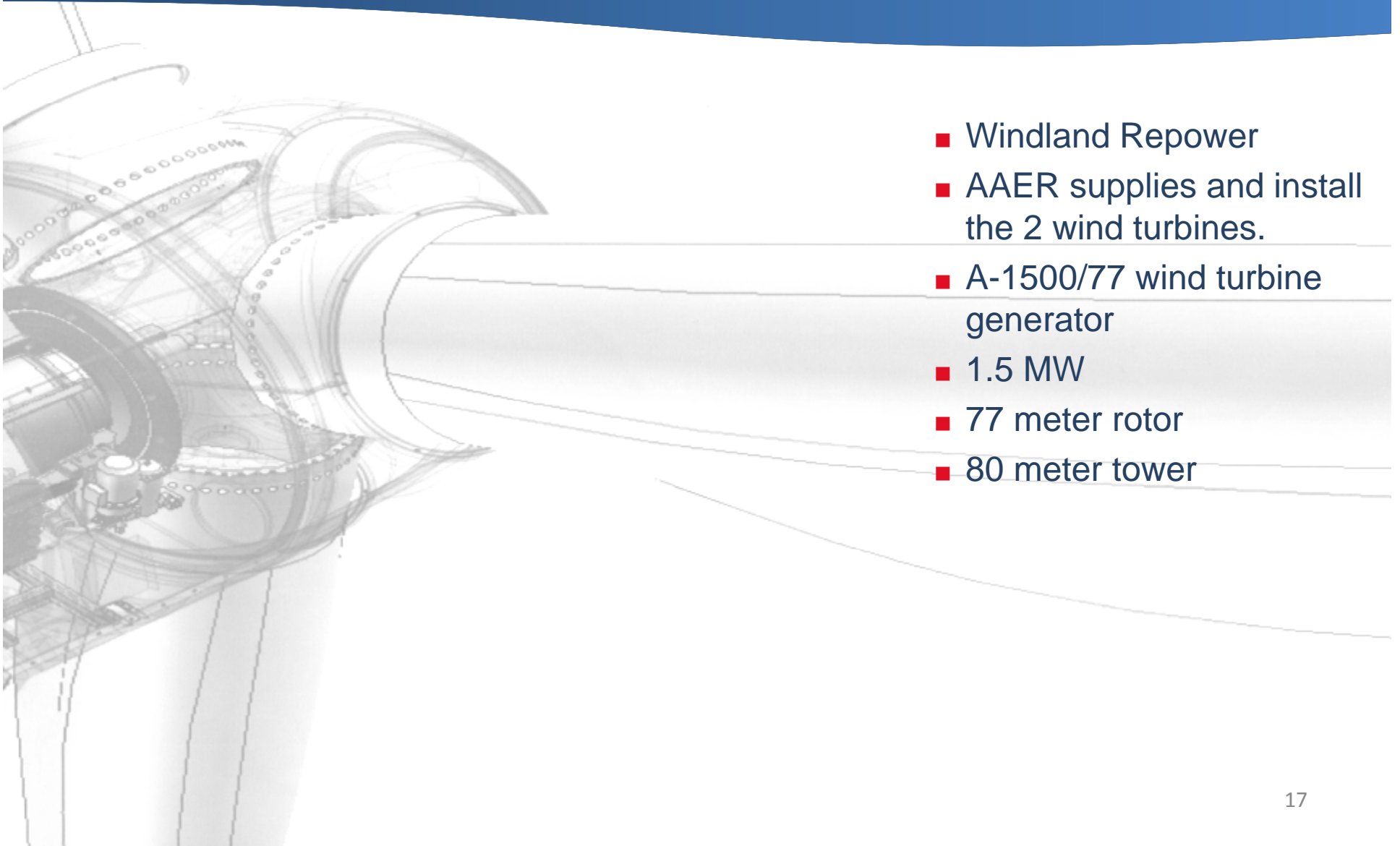
- They were awarded a \$25K grant for the feasibility study from the State.
- They were also awarded the option to use \$2.6M in Clean Renewable Energy Bonds (CREB) at 0% interest.



CATCH
the
WIND

Windland Repower II, Tehachapi (CA)

- Windland Repower
- AAER supplies and install the 2 wind turbines.
- A-1500/77 wind turbine generator
- 1.5 MW
- 77 meter rotor
- 80 meter tower



Templeton Water & Light dept. (MA)

Municipal Wind Turbine Project; The John RS LeClerc Wind Turbine



- Municipal project constructed at the town's high school.
- AAER providing wind turbine only.
- A-1650/77 wind turbine generator
- 1.65 MW
- 77 meter rotor
- 80 meter tower

Strategic Partnership

Why a Strategic Partnership?

- Base on the AAER costly manufacturing experience
- Cash flow intensive, Low production number
- Lowering the cost of the components thru higher purchasing capacities
- Lowering the cost of the transportation thru higher logistic capacities
- Maximization of existing manufacturing and production facilities
- Good strategic localization for deliveries in a high potential market

Decision is imminent, we are in the final discussion phase with a strong and diversified partner.

Supply Chain

Why building a North American supply chain?

- Better costs, Automotive industry diversification
- Euro-CAD/USD exchange rates
- Cutting inbound transportation costs
- Transportation delays-just in time
- Local content requirements

Warranties

PWES is offering a wide range of warranties on its WTG for community wind projects;

- Electro-Mechanical warranty

- Two years standard, including parts, equipment and labor
- Extended warranty for year three to five

- Power Curve warranty

- One year 96% standard, including associated LD's if failed

- Sound level warranty

- One year standard, including associated LD's if failed

- Availability warranty

- For the duration of the O&M contract, level to be discuss

Warranties

PWES warranties will be back-stop outside of its balance sheet by a high rated wind industry insurance policy that will protect its customers.

We are in the final process.

Operation & Maintenance

PWES will perform on its WTG for community wind projects the following scope of work;

- **Preventive Maintenance**

- For the duration of the warranties PWES will perform or will supervise the Preventive Maintenance, including the labor and the consumables twice a year.

- **Unpredicted Maintenance**

- For the duration of the warranties PWES will perform or will supervise the Unpredicted Maintenance, including the labor and the parts as required.

- **Operation & Remote Control**

- PWES will operate all functions of the WTG both on-site and remotely on a 24/7

Costs & Financing Community Project

The general cost of Community wind project for a single wind turbine 1.65 is by experience between \$2.2M to \$2.6M per install MW;

The wind turbine alone represent 70% of the cost of the project, while the transportation is 5% to 7% and the BOP is 25%.

The cost for a 1.65 WTG is between \$2.3M to \$2.5M.
The transportation is between \$175K to \$250K.

Costs & Financing Community Project

PWES will perform the following scope of work during the course of the project up to final completion;

- **Assignment of a dedicated Project Manager at contractual agreement**
- **Engineering support during design and construction phase**
- **Logistic organization and flow through costs of transportation**
- **User friendly Installation manual**
- **Supervision during installation**
- **Commissioning services**
- **Testing**
- **Complete as-built documentation (Job Book)**
- **Wind turbine operation and SCADA training**
- **Safety training**

Costs & Financing Community Project

Based on our experience PWES has built a new and easy financing structure for the “ready to go” community projects:

We will finance the WTG for a period of up to 12 months after delivery with no down payments up front at a competitive and affordable interest rate, with in counter part minimal commercial securities and conditions;

***One of the condition is; if illegible to the ITC, PWES will get 100% of it.**

Costs & Financing Community Project

The securities and conditions will vary from project to project depending on the following aspects;

- Readiness of the project
- Wind resource & capacity factor
- Structure of PPA and pricing
- End stakeholder of power
- Strength of the promoter/developer/community
- Cost of construction
- Return on the investment
- Equity availability and/or grant availability
- Quick due diligence
- Localization of the project
- Operation & Maintenance contract
- Purchasing of other Pioneer Power Solutions products

Competitive Edge

Summary of PWES's Wind Turbine Advantages

- Wind Turbine financing
- Low risk of a proven technology (Operate since 1998)
- Installed base of more than 5,000 turbines in Germany, China and USA
- Existing Operation and Maintenance track record
- *Germanischer Lloyd (GL) Certification*
- Low sound level
- Competitive prices
- 2-year warranty that includes parts, labor and equipment with optional extended 3-5 year warranty
- Local O&M team with national Super O&M team
- 24/7 remote monitoring

Locations

Questions?

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