

## ATTACHMENT 9 Reference and Work Product Form

### 1. Section One: References

Reference # 1 of 3 for <input checked="" type="checkbox"/> Recipient <input type="checkbox"/> Subcontractor	
<b>Name of Recipient/ Subcontractor</b>	Wind Harvest International
<b>Name of Reference Firm/Organization</b>	IOPARA, Inc.
<b>Address (city, state, and zip code)</b>	1595 Chemin Norway Mont-Royal (Qc), Canada H4P 1Y3
<b>Contact Name and Title</b>	Marius Paraschivoiu, CFD Expert
<b>Contact Phone Number and Email Address</b>	+1 (514) 342-2982 <a href="mailto:marius@iopara.ca">marius@iopara.ca</a>
<b>Describe the services or products the Recipient/subcontractor provided to the reference firm/organization.</b>	WHI provided package of VAWT operational data analytics and supporting external conditions.

**ATTACHMENT 9**  
**Reference and Work Product Form**

Reference # 2 of 3 for <input checked="" type="checkbox"/> Recipient <input type="checkbox"/> Subcontractor	
<b>Name of Recipient/ Subcontractor</b>	Wind Harvest International
<b>Name of Reference Firm/Organization</b>	Technip Stone & Webster Process Technology, Inc. Phone: +1 (909) 447-3600 Email: <a href="mailto:jstrawn@technip.com">jstrawn@technip.com</a>
<b>Address (city, state, and zip code)</b>	555 West Arrow Highway Claremont, CA 91711-4805 USA
<b>Contact Name and Title</b>	John Strawn, Vice President, Operations
<b>Contact Phone Number and Email Address</b>	+1 (909) 447-3600 <a href="mailto:jstrawn@technip.com">jstrawn@technip.com</a>
<b>Describe the services or products the Recipient/subcontractor provided to the reference firm/organization.</b>	WHI provided a complete package outlining all aspects of the company's business model, economic competitiveness, patent position, management team and VAWT design and schematics.

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Reference # 3 of 3 for <input checked="" type="checkbox"/> Recipient <input type="checkbox"/> Subcontractor	
Name of Recipient/ Subcontractor	Wind Harvest International
Name of Reference Firm/Organization	Patriot Modular
Address (city, state, and zip code)	120 Bearle St Pasadena, TX 77506
Contact Name and Title	Justin Kreft
Contact Phone Number and Email Address	281-990-3043 Justin@patriotmodular.com
Describe the services or products the Recipient/subcontractor provided to the reference firm/organization.	WHI provided drawings for manufacturing of turbines.

### 2. Section Two: Work Product

- Past Projects

#### **Modeling Blade Pitch and Solidities in Straight Bladed VAWTs**

In 2010, WHI and IOPARA collaborated on a research project funded by the CEC Energy Innovations Small Grants Project. IOPARA treated WHI data sets to create an aerodynamic model of WHI's VAWTs when placed in a linear array configuration. The project scope included analysis of turbine behavior at various speeds of operation as well as with turbines of various solidities. The objective was to determine the ability to model the increase in power efficiency for turbines placed in an array and to optimize the solidity of turbine and speed of operation to harvest the highest possible power coefficient for the equipment under investigation.

#### **WHI Aeroelastic Model**

WHI has created a proprietary aeroelastic model for VAWT technology that integrates individual modeling components of aerodynamic, structural and fatigue analysis into a single, predictive model of VAWT behavior. The model reacts to VAWT behavior across a full range of external wind conditions imposed (e.g. speeds, gusts). WHI created this aeroelastic model over the past three years and has validated outcomes with live field-tested data generated by an operating WHI turbine in Denmark. WHI's field testing and data generation was conducted in coordination with one of the world's leading authorities for VAWT design, the Technical University of Denmark (DTU).

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#### **WHI G168 Turbine Beta Testing**

Over the past two years WHI embarked on a commercial validation of its G168 VAWT. The project was designed to design and build a class-leading, stand-alone VAWT. Subsequently the project included an operational phase to optimize power efficiency, lifetime fatigue, structural integrity, and ease of maintenance over the life of the turbine. The successful result is a commercially viable G168 VAWT that is planned for installation into early-stage projects in the U.S. and abroad beginning in 2017.