SECTION 1

SECTION 2

SECTION 3

1). Goals and strategies

a). Identify the primary ARC goal and objective the project will address.
As the forerunner of locally owed wind development in the region, the Angel Winds project addresses the ARC goal to "develop and market strategic assets for local economies."

b). Identify and quote the primary ARC State Strategy the project will address.
The Angel Wind project addresses Commission Strategy 1.4.5 – "Increase the use of renewable energy resources to produce alternative transportation fuels, electricity, and heat."

2) Purpose, Description & Rationale

a) Describe specific problems or issues the project will address and how these issues impact the community.
While the Western and Midwestern regions of the country are actively pursuing locally-owned wind farms as a result of their significant economic impacts, Appalachia currently has no real world examples of this financial model. Rather, all wind farms in West Virginia are of the corporate, absentee-owned model. While this form of development has many benefits, only a small fraction of the profits generated by these farms stays in-state, with that small portion being paid out in the form of modest land lease payments, and property taxes that are subject to accelerated depreciation. At a macroeconomic level, then, despite being the third windiest state in the East, the existing wind farms of West Virginia provide a relatively insignificant and non-sustainable return on investment to West Virginia.

The financial model of the proposed project, however, will present to West Virginians a more profitable way to harness their wind resources: locally owned wind projects can be an economic, social and ecological boon to the rural, agricultural-based community that otherwise fray under the stress of an aging population and steadily declining economic fortunes.

Determining the economic benefits of West Virginia's first locally-owned wind farm in wind-rich Monroe County is clearly one such opportunity. Wind energy is a geographically and socio-economically disbursed resource that has the potential to benefit many individuals and families, revitalize Monroe County's rural economy and help harness a new and ever-expanding renewable energy economy. As such, locally owned wind energy as an ideal form of economic development in at-risk and distressed counties, providing an opportunity local participation in development and wealth generation. Southern West Virginia boasts extremely rich wind resources that are ripe for development, and the proactive members of the Angel Winds Renewable Energy, LLC have organized their community to assertively market their wind resource to wind developers. With similar rural communities experiencing decline as a result of limited economic opportunities, creating a real world model of locally-owned development will play a significant role in compelling younger generations to stay in their communities of birth and stimulate new economic development.

Locally-owned wind is distinguished from the corporate, absentee-owned wind model outlined above, in which the revenues from lucrative electricity sales flow to out-of-state entities. In the locally-owned financial model, much of the ownership or investment in a project is local, which means that the economic development benefits and financial returns from such projects are at least three times greater than out-of-state owned wind (where the vast majority of profits leave the state), keeping these benefits local rather than exported, contributing vastly greater sums to the local and regional economy.

In the rush to capture these sums, out-of-state wind developers have already gone door-to-door in wind-rich Monroe County seeking leases and easements for wind projects, and landowners are uneasy with the rush to sign complicated, confusing and potentially less-than-lucrative contracts, which, if signed, would ensure that most wind-related profits leave the state, leaving many local residents with zero benefits from the resource at their very doorstep. The Angel Winds Renewable Energy, LLC members recognize this traditional pattern of absentee resource extraction that minimizes local benefits, and have pursued instead a financial model that could transform West Virginia's renewable energy economy.

Hence the launch of West Virginia's first locally-owned wind farm in Monroe County, a group of rural landowners who come together in an LLC to pool resources and information to develop a structure and business model to not only become intelligently prepared to work with wind developers, but to aggressively market their land and wind resource to attain the most beneficial deal. The Angel Winds LLC is working to map and assess the wind resource, in order to create a pro forma financial model that determines the precise profitability of a locally-owned wind farm in Appalachia.

As a model of economic development, locally owned wind which emphasizes developing the necessary skill sets for the emerging renewable energy industry is a multi-faceted strategy that addresses energy and the economy in the following ways:

- Develops 21st century skill sets for the emerging “green” economy
- Increases renewable energy development
- Increases local and national energy independence and security
- Creates local jobs at a rate often three times greater than absentee-owned wind and activates local supply chains
- Stimulates local community social cohesion and identity
- Transforms energy consumers into energy producers, thus opening energy production to everyday citizens and maximizing its local economic impact

This approach is clearly a "best practice" in terms of advancing wind energy production hand in hand with increased local economic benefits, both individually and for the local tax base. The Angel Winds Renewable Energy, LLC represents a new model of an organized, educated and cohesive community group involved in local energy production as a driver of locally-owned, sustainable economic prosperity, a financial model that can be mimicked across resource-rich Appalachia.

If the success of this project is widely imitated, this model of organization may result in more sustainable development practices becoming the de facto standard. As landowners will be living with turbines for the long term, they should be an active part in determining where and the manner in which wind development occurs on their land. Organized into more powerful bargaining units, landowners make better deals than isolated individuals who may not negotiate from such a position of strength and knowledge. Thus the development of locally-owned wind projects sets a transformative precedent for energy rich West Virginia, putting the economic benefits of the state's energy future squarely in the hands of their citizens.

Finally, as West Virginia's wind resources are actively exploited in the coming decades, establishing the precedent of local ownership is paramount. Indeed, a wind resource report cites a "study conducted for the West Virginia Development Office, that private land in the state of West Virginia can potentially support 3,830 megawatts (MW) of wind power in areas with Class 4 through 7 winds" (Truewind Solutions, 2007). Accordingly, the recent energy plan from the West Virginia Division of Energy considers wind to be the most significant renewable energy opportunity in the state at the current time (West Virginia Division of Energy,

2007). Clearly, it is in the best interests of the Appalachian region that LWEAs and locally-owned wind projects be promoted now, not later, so that Southern West Virginia citizens can enjoy the full benefits of their natural resources, rather than sending them out of the region to out-of-state entities.

b). Provide a detailed description of all major construction components. Include details such as linear feet to be constructed, square footage built, or acreage served, and timelines for starting and completing each component. (An executive summary or narrative description from an engineer's report can be substituted for this narrative.)
See attachment preconstruction development proposal from Alpha Energy.

c). Identify who will own improvements and provide maintenance for the completed project.
Angel Winds Renewable Energy, LLC will own all improvements.

With regards to the maintenance of the project, Mid-Atlantic Technology, Research and Innovation Center, in collaboration with The JOBS Project, Monroe County Technical Center (MCTC) and Angel Winds Renewable Energy, LLC will create a participatory model for innovation which actively engages the interests of the maintenance employee by providing employee ownership coupled with an increase of shares based on potential technological "tweeks" which may be produced during the day to day maintenance processes. One example is the development and improvement of climbing assists devices. If a particular innovation is brought to market and produces a financial return, a significant portion of this return will be reflected in the employees shares in Angel Winds Renewable Energy, LLC with the remaining return being distributed between the LLC members and local renewable energy fund.

Additionally, MCTC, in collaboration with The JOBS Project, was recently awarded a grant from the state of West Virginia. This grant is presently being utilized for developing a wind training course at MCTC. The purpose of this project is to provide training for local students in order to reverse the destructive effects of "brain drain," where students, upon graduation, leave their home town in order identify more prosperous areas of which provide more opportunities

d) Address how the project addresses opportunities for regional infrastructure.
Local ownership provides an innovative approach to community revitalization which has consistently proven to keep a vastly greater share of the wind power revenue in-state, also boosting wind-related employment significantly. To name just one of many studies, the U.S. General Accounting Office (GAO) has proven that a comparison between a 40 MW wind project owned by absentee-owners and 40 MWs owned locally yields benefits that look quite different over the same period: while the 40 MW project generated $1.3 million in income, the locally owned model produced $4 million in income that will remain in the community. Employment-wise, the absentee-owned project produced 18 high-paying energy jobs, while the locally-owned model produced 41 energy jobs. Additionally, this project will provide a substantial increase in the local tax base. This will aid the local efforts to leverage additional funds that will support development of needed infrastructure.

A recent study by the National Renewable Energy Laboratory (NREL) confirms the GAO report: "operations-period economic impacts are observed to be greater for community-owned projects. The majority of studies indicate that the range of increased operations-period impact is on the order of 1.5 to 3.4 times. New retrospective analysis of operating community wind projects finds that total employment impacts from completed community wind projects are estimated to be on the order of four to six 1 –year jobs per-MW during construction and 0.3 to 0.6 long-tern1 jobs per-MW during operations. In addition, when comparing retrospective results of community wind to hypothetical average absentee projects, construction-period

employment impacts are 1.1 to 1.3 times higher and operations-period impacts are 1.1 to 2.8 times higher for community wind." A 15 MW project in Monroe County, then, would create a minimum of 4 high-paying, permanent "green" energy jobs.

While accounting for the importance of job creation in the development of a regional energy based infrastructure, this project intends to not only develop the regions capacity for RE generation and local wealth creation by specifically focusing on developing a replicable approach to community revitalization, more importantly this project will provide important insight into applying "open" or "distributed" innovation approaches within the RE sector as well as enriching the regions institutional capacity within the research and development (R&D) sector. Similar to the R&D processes utilized by Toyota, "Open innovation is a paradigm that assumes that firms can and should use external ideas as well as internal ideas, and internal and external paths to market, as the firms look to advance their technology". (Chesbrough, 2003) By adopting this approach, boundaries between AWRE and its environment will become more permeable; innovations will easily transfer inward and outward. The central idea behind open innovation is that in a world of widely distributed knowledge, companies cannot afford to rely entirely on their own research, but should instead buy or license processes or inventions (e.g. patents) from other companies such as AWRE. Moreover, internal inventions not being used in AWEA's day to day business will be taken outside the company (e.g., through licensing, joint ventures, spin-offs).

In order to ensure the project's success as well as potential replicability, the Policy Consensus Initiative (PCI) will support the Angel Winds project by creating and staffing a collaborative structure within which relevant stakeholders can streamline regulatory, zoning, and other decision-making processes that are central to alternative energy development. PCI and its partners have nine years of experience in helping communities work through the issues surrounding alternative energy siting and development. In Monroe County, PCI would use its tested Community Governance System to implement the vision of the community. In order to assist Monroe County in achieving its goals, PCI will:

1. Conduct a thorough assessment of the project and design a replicable collaborative process that will help the stakeholders work through potential disagreements and complex issues and achieve shared goals;
2. Conduct a workshop and training for the team to launch the process;
3. Staff and support the team working on the Monroe County Wind Development, assisting them with clarifying shared goals, working through regulatory hurdles;
4. Assist the team in drafting a Declaration of Cooperation that will document the commitments of all the relevant stakeholders; and
5. Assist the team in evaluating the process and preparing a workbook for other communities.

Given the complexity both of siting wind projects and developing a local ownership model, a well-designed and supervised process will be essential to addressing issues that will undoubtedly arise. The learning from this process will benefit Monroe County and other similarly situated communities around the country.

Lastly, the creation of a local EERE fund will provide an invaluable component for EERE expansion in Monroe County and beyond. Moreover, the EERE fund will ensure local wealth generation as well as provide supplementary funds for EE upgrades for local housing. The EERE will only be used to stimulate the adoption of locally owned RE and provide EE funds for residential applications.

e) Illustrate local demand for the project including letters from key stakeholders, customer data, etc.

Currently, Southern West Virginia is well-known for its economic decline. Monroe County is a sparsely populated, relatively isolated county with a historical dependence upon agriculture and timber, as it has none of the coal reserves boasted by nearby counties. Similar to surrounding counties, however, Monroe County exhibits its "at risk" status in very real ways: the median age in Monroe County is over five years higher than the national average, and the population aged 65 or higher is 25% higher than the national average (US Census). This speaks to the now familiar population flight in rural fanning communities like Monroe County. This "brain drain" is even more acute in a county where just 8% of the adult population has a college degree or equivalent (US Census). These conditions of a declining rural population are of course expressed in simple economics, as Monroe County's median income is a full 30% below the national average, and per capita income a full 20% below the national average (US Census). Against this backdrop, expanding economic opportunities in a sustainable way is a necessity.

f) For residential service projects in non-distressed counties, address how the project meets the "Policy for Residential Infrastructure Projects" in ARC's Project Guidelines. Include letters or other documentation from state health/environmental agencies if relevant.
Monroe County is classified as an at-risk county and is situated in Southern West Virginia which has a high concentration of distressed counties.

g) For industrial sites or community facilities, describe strategies for marketing the project to potential users and beneficiaries.
Once the first quarter of anemometer data is secured, Alpha Energy will begin marketing the project to their investors. Additionally, The JOBS Project will ensure a localized equity drive by identifying West Virginia as well as Central Appalachia based investors. See attached preconstruction development proposal for more details.

h) Energy efficient efforts: Describe any energy-efficient features of the project or any efforts that have been made to improve the energy-efficiency of the project.
The local EERE fund will provide supplementary funds for residential EE projects.

3). Relation to Other Local/Regional Activities
According to the "West Virginia Energy Opportunities: A Blueprint for the Future" report, "Wind is the most significant renewable energy opportunity at this time." The report goes out to outline an action plan: "Overview: West Virginia has an estimated wind energy resource of 3,800 MW on private lands according to a study by Truewind Solutions for the West Virginia Development Office. Class *5* and 6 wind areas are identified as wind resources.

We also anticipate that the Angel Winds project will start as a small energy production business; however, as the first of its kind, creating the financial model for this locally-owned project will develop a replicable model for other communities to follow. Integrated economic development needs pioneers to create a dataset of lessons learned for those who are ready to follow. Thus, the Angel Winds project directly addresses the goals and priorities of the state of West Virginia and of the ARC.

In addition to the expressed support of the Monroe County Commission, the Angel Winds Project also aligns with the County Comprehensive Plan, in which the Monroe County Planning Commission set "high priority" goals to "support efforts to better educate and train the workforce," "solicit or promote businesses which would provide economic opportunities without negatively impacting rural character and culture," "research and develop innovative and desirable non-agricultural opportunities and markets," and "emphasize and support locally-owned businesses." These are concurrent goals of the Angel Winds project.

As a collaborative partner, the Center for Economic Options (CEO) has a statewide focus and is a board member of West Virginia's State Energy Sector Partnership (SESP). Additionally, CEO's Executive Director is a member of the West Virginia Vision Shared's Sustainability Team which is formulating policy and projects around support for renewable and sustainable energy development. CEO, through its Green Business, Green Jobs Accelerator Project will be facilitating a broad network of renewable energy businesses, stakeholders, investors, and supporters. This network will help inform policy discussions and provide another level of coordination with other area economic development activities, particularly in promoting the financial outlays determined as a result of the project.

4). Geographic Area

a) Identify the counties and census tracts served by the project.
The Angel Wind project will be located in Monroe County along Little Mountain, between Linside and Fountain Springs. If the site does not satisfy all the "go no go" parameters of the due diligence phase, another wind site with an emphasis upon local ownership will be determined in Monroe County or another at-risk or distressed county. Presently we are conducting the preliminary site assessment of a site located in both Summers and Monroe county as well as a site in Mercer County.

b). Comment on the project's impact on ARC'S designated distressed areas.
Monroe County is listed as an at-risk country for the ARC. According to 2000 Census data, Monroe County has a population of 14,583, with a per capita income of $22,131. Approximately 25 percent of households report income less than $35,000, and the median household income is $27,575. In terms of the labor force, the 2008 unemployment rate was 4.3 percent, although it is certain to be significantly higher due to the economic crisis of the last year. Monroe County is part of Workforce Investment Area 1.

According to the ARC Annual Implementing Strategy 2009 report, "'Unemployment rates in the at-risk counties have averaged 15 percent higher than the transitional counties in 2007 (5.3 percent vs. 4.6 percent). From 2000 to 2007, West Virginia at-risk counties average employment growth rate was actually in the negative numbers at -0.8, while the transitional counties averaged an employment growth rate of 1.1 percent. At-risk counties' 2005 poverty rates averaged 27 percent higher than the poverty rates in transitional counties (19.8 percent vs. 15.6 percent), and 2006 per capita personal incomes were 12 percent lower ($24,584 vs. $28,007)." The Report goes on to state that "emphasis in these counties will be placed on developing *strong local economic development organizations; assistance to diversify and expand local industry,* including destination tourism development; and *support for small business development."* This project directly addresses those goals.

c) Attach area map(s) with the project's service area clearly marked, diagrams of building sites, and plans of buildings to be constructed.
Below are several maps detailing the little mountain site as well as the extensive wind resources at the location. The preliminary wind analysis (attached) was performed by Meteodyn, the world's leading expert in rough terrain analyses. The following is a brief description of the following images:

- Figure 1: Location of Little Mountain site in Monroe County
- Figure 2: Little mountain
- Figure 3: Mean wind speed at 100 meter resolution
- Figure 4: Table for color coding for 100 meter resolution map (above)
- Figure 5: Energy density rose (left) – Energy distribution rose (right)

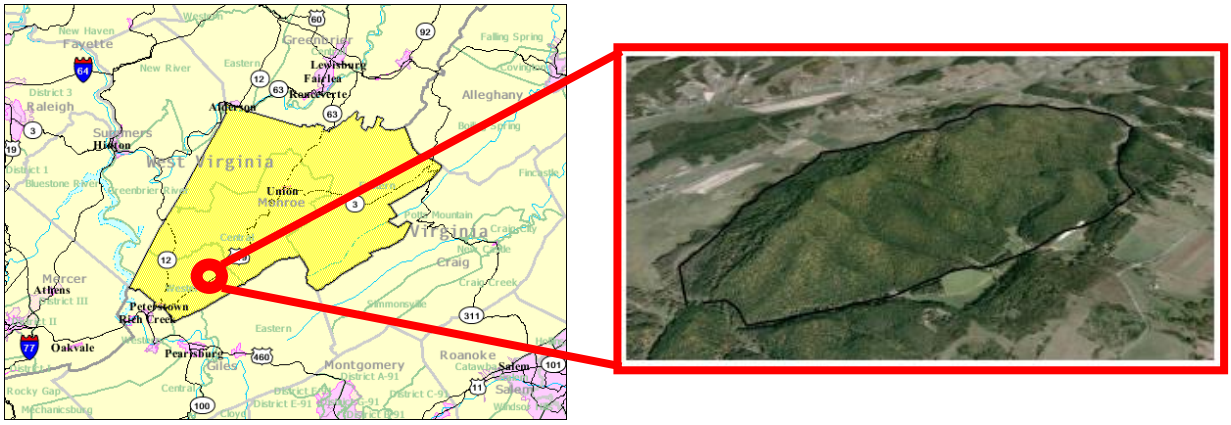


Figure 1

Figure 2

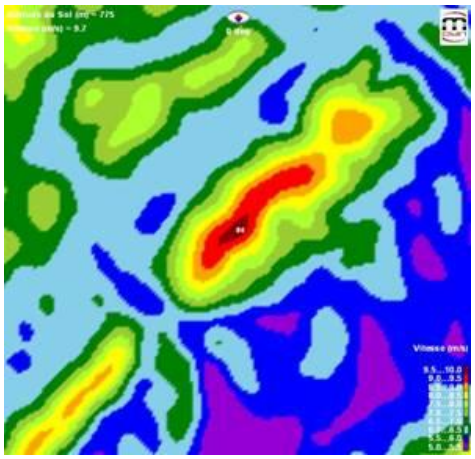


Figure 3

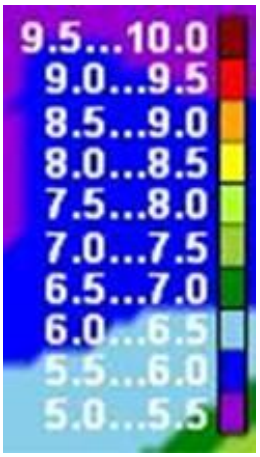


Figure 4

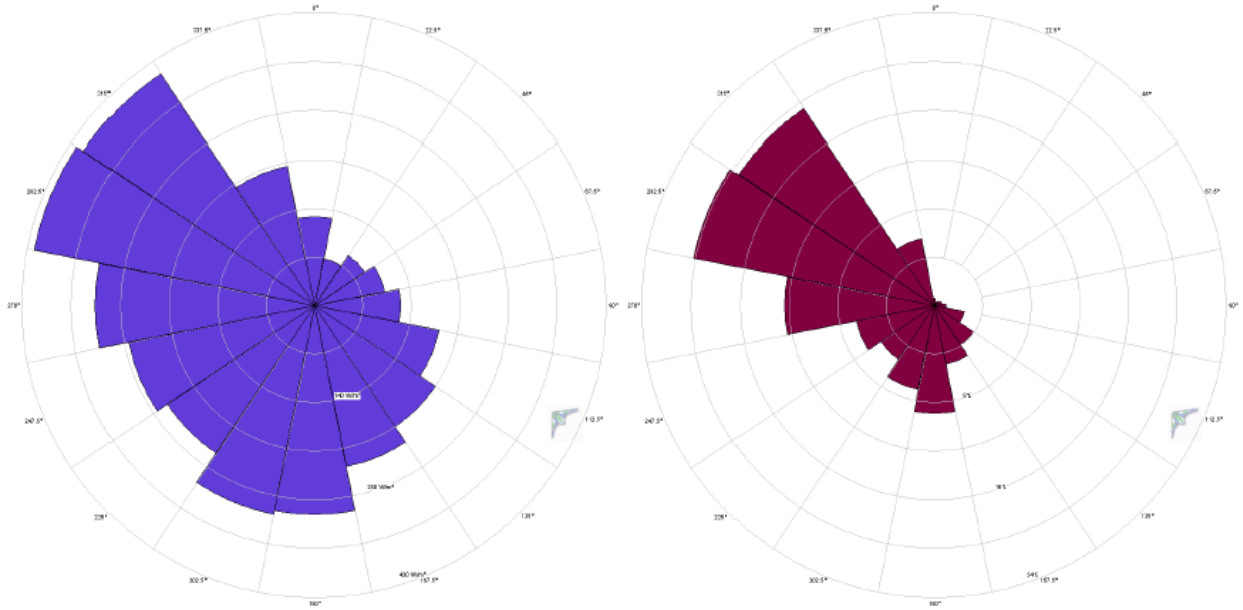


Figure 5

5). Benefits and Performance Measures

a) State outputs and outcomes in absolute numerical terms per ARC's Performance Measurement Guidelines. For infrastructure projects, state number of customers served and how many are residential and/or business customers.
Goal 1: Develop and Market Strategic Assets for Local Economies

Entrepreneurial Education:
Project Output: Approximately 30 direct participants
Project Outcomes: Financial outlay/pro forma established and 1 wind energy business created

Business Incubator:
Project Output: 1 wind energy business assisted; approximately 15 direct participants
Project Outcomes: 1 wind energy business created and one financial outlay/pro forma model created Jobs created: none in pre-feasibility stage; four to six I-year jobs per-MW during construction and 0.3 to 0.6 long-term jobs per-MW during operations.

b) Attach letters documenting jobs retained, jobs created, and leveraged private investment (LPI) when applicable.
See attached preconstruction development proposal by Alpha Energy, LLC.

c) Describe other project benefits as appropriate, such as the likely impact on future economic development activity in the area, or anticipated spin-off results.
Again citing the above-mentioned NREL study, "policies that prioritize higher levels of local ownership are likely to result in increased economic development impacts. Furthermore, the increased economic development impact of community wind shown here should not be undervalued. As the wind industry grows and approaches penetrations in the U.S. electricity market of 20%, social opposition to new wind power projects may increase. Community wind could provide a valuable strategy for building community support of wind power -especially in communities that are new to wind power."

Thus, not only will the proposed project serve as a crucial financial model for opening the door lo other lucrative locally-owned wind projects in Southern West Virginia, it would also result in economic development beyond the project itself.

Such a high profile, flagship project would likely be a model that spurs larger renewable energy innovation and entrepreneurship that takes advantage of the increasing investment in the "green" sector. This will be particularly true as the ever increasing value of "clean" power is realized. Biomass electricity generation, for example, considered a "carbon neutral" energy source, would likely increase in some entrepreneurial capacity, given the region's vast biomass resources.

Finally, this pilot project would help West Virginia, particularly its Southern region, remain competitive with other Appalachian states (like OH, PA and NC) that have already capitalized on the new energy economy in a proactive, comprehensive manner.

6). Agency Capacity, Staff and Consultation Qualifications, and Procurement Procedures

a)Briefly review the applicant's capacity to undertake the proposed activity by describing previous experience with relevant activities.

The Mid-Atlantic Technology, Research and Innovation Center (MATRIC) is an independent, nonprofit, 501(c)(3) corporation headquartered in West Virginia. World-class scientists in the areas of chemical and environmental technologies, health and life sciences, and advanced engineering systems partner with higher education, industry, and government to conduct life-changing research and development and to commercialize resulting products and services. With superior leadership from a quality professional management team, a committed board of directors, and an outstanding technical staff, MATRIC is well positioned to oversee this project.

b) Describe the qualifications needed for key individuals who will manage and operate the project. Attach position descriptions or brief resumes.
See attached preconstruction development proposal by Alpha Energy, LLC.

c) Describe proposed qualifications for all consultants and subcontractors, and describe the competitive procedures used to select them.

Keith Pauley: MATRIC – Keith will oversee all aspects of the project.
Greg Clutter: MATRIC – In collaboration with Robleto Law, Greg will develop the innovation incubator.
Peter Dalke: National Policy Consensus Center – Peter will conduct the assessment and will design the collaborative process.
Wendy Willis: Policy Consensus Initiative – Wendy will supervise the assessment and the project and will conduct the introductory workshop.
Mike McArthur: Oregon Association of Counties – Mike McArthur has extensive experience in wind siting, both as a property owner and as a County Commissioner. He will conduct the introductory workshop with Wendy.
Local Staff Person: PCI will hire a local project manager to conduct the day-to-day work of the project. That person will learn the community governance system and will be a local resource in the future.
Eric Mathis: The JOBS Project – In collaboration with MATRIC, Eric will oversee all aspects of the proposed development project.
Jenny Hudson: The JOBS Project – Jenny will aid in the development of the Monroe County Technical Center wind training program.
Paul Lovette: Monroe County Technical Center – Paul will oversee the development of the wind training program.
Joe Brouse: Natural Capital Investment Fund – In collaboration with The JOBS Project, Joe will oversee the development of local EERE expansion fund.
Chris Burgess: Alpha Energy – Chris will facilitate pre-development requirements for the wind project including: federal aviation and communication interference studies, meteorological tower installation and data collection services, represent AWRE LLC for the utility interconnection process, environmental studies, geo-technical analysis, civil engineering, permitting and turbine manufacturer logistics and siting coordination.
Aure Robleto: Robleto Law – Aure will oversee all legal matters pertaining to AWRE, LLC as well as work with MATRIC in developing the innovation incubator.

Angel Winds Renewable Energy assessed all available options and members selected project team based on organization or companies capacity to ensure their project's success.

7). Project Sustainability & Grantee Capacity
Alpha Energy will oversee management of all operations of project. Please see attached resumes and preconstruction development proposal produced by Alpha Energy, LLC.

SECTION 4

Attachment Table of Contents

Attachment A

State of West Virginia

Certificate

I, Natalie E. Tennant, Secretary of State of the State of West Virginia, hereby certify that

ANGEL WINDS RENEWABLE ENERGY LLC

Control Number: 99KVE

has filed its "Articles of Organization" in my office according to the provisions of West Virginia Code §§31B-2-203 and 206. I hereby declare the organization to be registered as a limited liability company from its effective date of July 22, 2010 until the expiration of the term or termination of the company.

Therefore, I hereby issue this

CERTIFICATE OF A LIMITED LIABILITY COMPANY

Given under my hand and the Great Seal of the State of West Virginia on this day of July 22, 2010

Natalie E Tennant

Secretary of State

Attachment B

EARL LONG
P O BOX 1122
BEAVER, WV 25813-1122

Donald J Evans
MONROE County 11:58:19 AM
Instrument No 60943
Date Recorded 09/23/2010
Document Type LEASE
Book-Page 20-624
Recording Fee $17.00
Additional $7.00

OPTION AGREEMENT AND LEASE

This OPTION AGREEMENT AND WIND ENERGY LEASE ("Agreement" or "Lease") is made by and between Margaret M. Fario, an individual and/or entity residing at Green Valley Rd Monroe Co WV, and ("Lessor") and Angel Winds Renewable Energy LLC ("Lessee"), a West Virginia limited liability company.

WHEREAS, the Lessor desires to give Lessee an option to lease the real property more fully described in this Agreement, and on Lessee's exercise of the option, to lease the real property to the Lessee on the terms and conditions herein set forth, for the purpose of conducting feasibility studies and pre-development work that may lead to the construction of wind power facilities on the property;

WHEREAS, the Lessee develops real property sites for wind-energy usage, including pre-development activities and development and construction of wind power facilities; and

WHEREAS, the Lessee desires to acquire the right (but not the obligation) to lease the property for purposes of conducting feasibility studies, collecting wind data, and constructing Wind Power Facilities on the property, and operating the Wind Power Facilities for the term of the Lease, plus any Renewal Terms.

Now therefore, for valuable consideration, the receipt and sufficiency of which the parties hereto acknowledge, the parties agree as follows:

1. GRANT OF EXCLUSIVE OPTION.

Lessor hereby unconditionally and irrevocably grants, bargains, sells and conveys to Lessee, the exclusive right and option (the "Option") to lease the Property (or such portion thereof as may be designated by Lessee) in accordance with the terms and conditions of this Lease entered into by the parties. During the Option Term (defined below), and other than the Option granted herein, Lessor shall grant no option or other right in the Property with respect to Wind Power Facilities on the Property or any right related thereto. By executing this Option Agreement and Lease, Lessor acknowledges that (i) Lessor has the full power and authority to enter into and perform its obligations under this Agreement and (ii) Lessor holds fee simple title to the Property and is the sole owner of the Property.

2. TERM OF OPTION.

The term of the Option shall commence on the Effective Date, and shall continue for a period of two (2) years thereafter, (the "Option Term"), unless extended by the mutual agreement of the parties hereto.

3. CONSIDERATION FOR OPTION.

This Option is granted in consideration of a payment by Lessee to Lessor (the "Option Payment") in an amount equal to $1,000. The Option Payment shall be made within 60 days of the Effective Date hereof. The Option Payment is also consideration, in addition to the rent described below, for the Lease.

4. EXERCISE OF OPTION.

Lessee shall notify Lessor of its election to exercise the Option by providing written notice thereof before the expiration of the Option Term. All of the terms and conditions of the Lease shall apply from the Effective Date hereof, unless the Lessee does not exercise the Option within the Option Term. The Lease shall terminate at the expiration of the Option Term in the event Lessee does not exercise the Option within the Option Term.

5. ACTIVITIES DURING OPTION TERM.

During the Option Term, Lessor will cooperate with Lessee and take all action reasonably necessary to enable Lessee to conduct feasibility studies on the Property. Lessee will have the right to use the Property to determine the suitability of thereof for wind-powered electrical generating facilities. In connection with such use, Lessee will have the right to construct and place on the Property, and to operate, one or more "Meteorological Structures" (including without limitation meteorological towers and/or masts for the purpose of collecting weather and wind data on the Property), and to conduct land, engineering, environmental, and architectural surveys for the anticipated construction of wind turbine generators, the associated electrical transmission lines and related surface and subsurface equipment, collection and transmission grid, power conditioning equipment, transformers, telecommunications equipment, and other related facilities, equipment and improvements (collectively, the "Wind Power Facilities"). Lessee will have the right to enter and exit the Property over and across the Property.

6. LEASE.

On written notice of the exercise of the Option by Lessee, Lessor shall lease to Lessee, and Lessee shall lease from Lessor, that real property located in Monroe County WV, and more particularly described in Exhibit A attached hereto (the "Leased Property"). The Leased Property is graphically depicted in the drawings attached hereto as Exhibit B. Lessee shall have the right to use the Leased Property for the operation of a wind-powered electrical generating facility for the conversion of wind energy into electrical energy. In connection with such use, Lessee shall have the right to construct and place on the Leased Property, and to operate, one or more wind turbine generators (each, a "Turbine"), the associated electrical transmission lines and related surface and subsurface equipment, collection and transmission grid, power conditioning equipment, transformers, telecommunications equipment, and other related facilities, equipment and improvements (collectively, the "Wind Power Facilities").

Lessee shall at all times retain title to the Wind Power Facilities. Lessee shall have the right of ingress to and egress from the Wind Power Facilities over and across the Leased Property and, if necessary, over and across any adjacent property owned by Lessor, by means of existing roads or by routes which Lessee or Lessor may construct, whether located on the Leased Property or elsewhere. Lessor, at Lessor's risk as to loss of crops and compaction by reason of Lessee's use, may use the Leased Property for purposes of cultivation and other agricultural uses that do not interfere, in Lessee's sole determination, with Lessee's use of the Leased Property.

7. CONSTRUCTION AND WIND EASEMENTS.

Lessor shall sign and deliver to Lessee the Construction, Access, and Transmission Easement attached hereto as Exhibit C (the "Construction Easement") and the Wind Non-Obstruction Easement attached hereto as Exhibit D (the "Wind Easement"), each of which shall be recorded in the Currituck County Records. If more than one Construction Easement and/or Wind Easement is required in order for Lessee to construct and operate the Wind Power Facilities (either because the property of several different owners is involved, or because separate easements are needed for separate portions of the Wind Power Facilities), as determined by Lessee in its sole discretion, then Lessor shall cooperate with Lessee in obtaining all of such easements. These easements shall be appurtenant to this Lease.

8. LEASE TERM.

8.1 Commencement Date. The term of this Lease (the "Term") shall commence on that date (the "Commencement Date") by which the last of the conditions set forth in Section 8.2 shall have been satisfied, and shall end on the twenty-fifth (25^{th}) anniversary of the Commencement Date, unless renewed or terminated as provided in this Lease.

8.2 Condition Subsequent. Lessee shall have the right to terminate this Lease at any time prior to the satisfactory occurrence, as determined by Lessee, of all of the following:

(a) Lessee's receipt of consultants' reports confirming that there are no environmental conditions on the Leased Property which would interfere with the Wind Power Facilities or cause Lessee to incur any liability.

(b) Lessee's receipt of all zoning and land use approvals, and all other permits and approvals, required for the construction and operation of the Wind Power Facilities.

(c) Lessee's receipt of all easements described in Section 2 above, including, without limitation, a Wind Easement from Lessor and each adjoining property owner, the Construction Easement, and any other easements required in connection with the installation of the Wind Power Facilities (including, without limitation, any easement required for the construction and operation of, and/or the connection to and use of, an electrical substation).

(d) Lessee's satisfaction as to the economic viability of individual Turbines.

(e) Lessee's approval of title to the Leased Property and the legal description and survey of the Leased Property.

(f) Lessee's receipt of non-disturbance agreements from all holders of liens and other encumbrances affecting the Leased Property, and from all landlords under any master leases or underlying leases.

(g) Lessor's approval of acceptable areas on the Leased Property where Turbines may be constructed, operated, and maintained.

8.3 Renewals. The Lease shall be automatically renewed for additional, consecutive twenty (20) year terms ("Renewal Terms") unless and until Lessee gives written notice of termination, which notice shall be given not more than twelve (12) months nor less than four (4) months prior to the expiration of the then-current Term or Renewal Term. Each Renewal Term shall begin on the expiration date of the Term or previous Renewal Term. The same terms and conditions contained in this Lease shall govern the Renewal Terms, except that the rent for each Renewal Term shall be the then-current market rate. If the parties cannot agree on the rent on or before ninety (90) days prior to the commencement of the Renewal Term, then they shall conduct an appraisal pursuant to Section 8.4 below.

8.4 Appraisal Demand. If the parties are unable mutually to agree upon the fair market rent, then the fair market rent initially shall be determined by Lessee by written notice ("Lessee's Notice") given to Lessor promptly following the 90-day deadline set forth in Section 8.3. If Lessor disputes the amount of fair market rent set forth in Lessee's Notice, then, within ten (10) days after the date of Lessee's Notice, Lessor shall send Lessee a written notice ("Lessor's Notice") which clearly (i) disputes the fair market rent set forth in Lessee's Notice, and (ii) demands an appraisal pursuant to this Section 8.4. Within thirty (30) days of Lessor's Notice, the parties shall mutually select an appraiser, or it the parties cannot agree on an appraiser, then the parties shall each select one appraiser. The appraisal(s) shall be performed in accordance with standards customary in the wind energy industry. The appraiser(s) shall have at least five years of full-time commercial appraisal experience and be familiar with the fair market rent of properties leased for the operation of wind-powered electrical generating facilities in the general location of the Leased Property. Each party shall pay the fees and expenses of its respective appraiser.

8.5 Defective Notice. Lessor's Notice shall be deemed defective, and not given to Lessee, if it fails strictly to comply with the requirements and time period set forth above. If Lessor does not send Lessor's Notice within ten (10) days after the date of Lessee's Notice, or if Lessor's Notice fails to contain all of the required information, then the fair market rent for the Renewal Term in question shall be the amount specified in Lessee's Notice.

8.6 Determination of Final Appraisal. Any appraisal of the fair market rent obtained pursuant to Section 8.4 shall be delivered, with supporting documentation as is customary in the wind energy industry, to Lessee within forty-five (45) days of the Lessor's Notice. If no appraisal is delivered within the time allowed, the fair market rent for the Renewal Term in question shall be the amount specified in the Lessee's Notice. If two or more appraisals are obtained, the parties agree to take an average of all appraisals to determine the fair market rent. If the Lessee, in its sole discretion, disagrees with the average rent as determined by the appraisals, the Lessee may obtain another independent appraisal, at its cost. In the event the additional independent appraisal is reasonably consistent with the other appraisals obtained hereby, then this additional appraisal shall be the final fair market rent for the Renewal Term in question.

8.7 Lessee's Right to Terminate. Lessee shall have the right to terminate this Lease as to all or any part of the Leased Property, or as to any Turbine, at any time and from time to time, upon thirty (30) days' prior written notice to Lessor.

9. RENT.

9.1 Rent. Beginning sixty (30) days after the Lessee constructs and commissions the Wind Power Facility, Lessee shall pay rent for the Leased Property in the following amounts: a Base Rent of $2000 per turbine, and Royalties in the amount of 3.5 percent (3.5%) of the gross revenues generated from electricity sales by Lessee from Turbines located on the Property. (Base Rent and Royalties together are the "Rent"). Base Rent and Royalties payments will be made on the first day of the month. Rent shall end on the last day of the Term or upon physical removal of the Wind Power Facilities in accordance with Section 9.3. Lessor agrees that Rent includes compensation for any roads constructed by Lessee on the Leased Property.

9.2 Increases in Rent. The Base Rent shall be adjusted (but never decreased) at the beginning of each year of the Lease Term to reflect the increase, if any, in the "CPI" (as defined below). The "Adjustment Dates" shall be the first day of each Lease Year. The "Adjustment Index" shall be the CPI published most recently before the applicable Adjustment Date. The "Comparison Index" for the first CPI adjustment shall be the CPI published most recently before the applicable Commencement Date; the "Comparison Index" for each subsequent CPI adjustment shall be the Adjustment Index which was used for the immediately preceding CPI adjustment. On each Adjustment Date, the Rent payable immediately prior thereto shall be adjusted by multiplying such Rent by a fraction, the numerator of which is the applicable Adjustment Index and the denominator of which is the applicable Comparison Index. As used herein, the term "CPI" means the Consumer Price Index for the Mid-Atlantic region published by the Bureau of Labor Statistics of the United States Department of Labor. If the Base Year of the CPI is changed, then the foregoing calculation shall be made using the appropriate conversion factor published by the Bureau of Labor Statistics (or successor agency) to correlate to the Base Year of the CPI herein specified.

9.3 Removal of Wind Power Facilities. Lessee shall have the right, at any time and in its sole discretion, to remove one or more Turbines or other Wind Power Facilities. If Lessee removes a Turbine, then there shall be a corresponding reduction in the Rent. Lessor expressly waives any statutory or common law landlord's lien to which Lessor might be entitled. In the event that Lessee removes any portion of the Wind Power Facilities, that portion shall be removed to a depth of 42 inches below the natural surrounding grade.

9.4 Payment for Crop Damage. On the terms set forth below, Lessee shall pay Lessor for crop damage occurring on the Leased Property in 20___ as a direct result of Lessee's activities on the Leased Property. If Lessee damages Lessor's crops on the Leased Property in the first year of this Lease 20___, then Lessee shall pay Lessor damages calculated pursuant to the following formula: Damages=Price x Yield x Percentage of Damage x Acreage. The price for a damaged crop shall be the arithmetic average of (1) the West Virginia Board of Trade's price for that crop on the most recent previous March 1 and (2) the West Virginia Board of Trade's price for that crop on the most recent previous September 1. Yield will be the average of the previous three (3) years' yields according to the Lessor's records for the smallest parcel of land which includes the damaged area. If Lessor does not have yield records available, then the parties shall use FSA (*Farm Service Agency*) records or other commonly used yield information available for the area. The parties shall try in good faith to agree on the extent of damage and acreage affected. If they cannot so agree, then the extent of damage and acreage affected shall be determined by an impartial party selected by Lessee, such as a crop insurance adjuster or an extension agent. In no case shall Lessee be required to pay more than a single total crop loss in one year. Lessee shall make payment to Lessor not later than thirty (30) days after determining the amount of the payment due. Lessee shall not be required to pay for crop damage occurring after calendar year 20_____unless such damage is a direct result of construction activities of Lessee on the Property. No damages shall be payable for soil compaction, as opposed to crop damage, on the Leased Property in 20____or any other year.

10. TAXES.

Lessee shall pay any increase in the real property taxes on the Leased Property which is directly attributable to the installation of the Wind Power Facilities. Lessee shall not be liable for any taxes or assessments of any type levied or assessed against the Leased Property; provided, however, that Lessee shall pay, during the Lease Term, any increase in ad valorem real property taxes attributable to Lessee's installation of the Wind Power Facilities. To receive reimbursement under this Section, Lessor must submit the tax bill to Angel Winds Renewable Energy LLC, together with documentation showing Lessee's liability for the increase in ad valorem taxes, within thirty (30) days after Lessor receives the bill from the taxing authority and at least ten (10) days prior to the due date. The parties agree to fully cooperate to obtain any available tax refunds or tax abatements.

11. LESSEE'S REPRESENTATIONS, WARRANTIES AND COVENANTS.

11.1 Construction of Wind Power Facilities. Prior to Lessee's construction of the Wind Power Facilities, Lessee shall consult with Lessor for informational purposes only, but Lessor shall not have the right to approve any portion of the Wind Power Facilities. Lessee will obtain Lessor's approval as to removal of excavated materials from and disposition of excavated materials on the Leased Property. All topsoil will be reserved and replaced on the Leased Property unless otherwise agreed in advance by the parties. Lessor shall not unreasonably withhold or delay any required approvals.

11.2 Insurance and Indemnity. Lessee shall maintain liability insurance insuring Lessee against loss caused by Lessee's use of the Leased Property under this Lease, in an amount not less than $1,000,000 of combined single-limit liability coverage, and shall provide certificates of this insurance coverage to Lessor upon Lessor's written request. Lessee shall indemnify Lessor against liability for injuries and claims for direct physical damage to the extent caused by Lessee's exercise of rights granted in this Lease, the Construction Easement or the Wind Easement. This indemnity does not cover losses of rent, business opportunities, crop production, profits and the like that may result from Lessor's loss of use of the Leased Property. This indemnity also does not extend to, and Lessor expressly waives and releases any claims for: (a) property damage or personal injuries attributable to risks of known and unknown dangers associated with electrical generating facilities, or (b) claims of nuisance based on the construction, operation, maintenance or removal of the Wind Power Facilities.

11.3 Requirements and Governmental Agencies. Lessee shall comply in all material respects with valid laws applicable to the Wind Power Facilities, but shall have the right, in its sole discretion and at its sole expense, in its name or Lessor's name, to contest the validity or applicability to the Leased Property and/or the Wind Power Facilities of any law, ordinance, order, rule or regulation of any governmental agency or entity. Lessee shall control any such contest and Lessor shall cooperate with Lessee in every reasonable way in such contest, at no out-of-pocket expense to Lessor.

11.4 Mechanics' Liens. Lessee shall not permit any mechanics' liens arising out of Lessee's use of the Leased Property pursuant to this Lease to be filed against the Leased Property. If Lessee wishes to contest any such lien, Lessee shall, within sixty (60) days after it receives notice of the lien, provide a bond or other security Lessor may reasonably request, or remove such lien from the Leased Property pursuant to applicable law.

11.5 Hazardous Materials. Lessee shall indemnify Lessor against Lessee's material violation on the Leased Property of any applicable law or regulation relating to any substance, material or waste classified as hazardous or toxic, or which is regulated as a hazardous waste.

12. LESSOR'S REPRESENTATIONS, WARRANTIES AND COVENANTS.

Lessor hereby represents, warrants and covenants as follows:

12.1 Lessor's Authority. Lessor is the sole owner of the Leased Property and has the unrestricted right and authority to sign this Lease and to grant Lessee the rights granted in this Lease. When signed by Lessor, this Lease constitutes a valid and binding agreement enforceable against Lessor in accordance with its terms.

12.2 No Interference. Lessor agrees that Lessee shall have the exclusive right to convert all of the wind resources of the Leased Property. Lessor's activities and any grant of rights Lessor makes to any third party, whether located on the Leased Property or elsewhere, shall not, now or in the future, interfere in any way with Lessee's use of the Leased Property, the rights granted under this Lease, the Construction Easement or the Wind Easement. Lessor shall not interfere with the wind speed or wind direction over the Leased Property by engaging in any activity on the Leased Property or elsewhere that might cause a decrease in the output or efficiency of the Wind Power Facilities. Lessor reserves the right to erect buildings for ordinary agricultural use, except that Lessor must consult with and obtain Lessee's prior written approval as to the location and dimensions of all structures. Approval shall be based on whether, in Lessee's sole and absolute discretion, the proposed structures might interfere with wind speed or wind direction over any portion of the Leased Property, or cause a decrease in the output or efficiency of the Turbines, or interfere in any other way with Lessee's operations on the Leased Property.

12.3 Liens and Tenants. Lessor shall provide Lessee with a current abstract of title or preliminary title report for the Leased Property, showing all liens and other exceptions to title to the Leased Property. Lessor shall cooperate with Lessee to obtain a non-disturbance agreement from each lienholder (recorded or unrecorded) which provides that the lienholder shall not disturb Lessee's possession or rights under this Lease or terminate this Lease so long as Lessor is not entitled to terminate this Lease under its terms.

12.4 Requirements of Governmental Agencies. Lessor shall assist and fully cooperate with Lessee, at no out-of-pocket expense to Lessor, in applying for (including signing in Lessor's name, if necessary), complying with or obtaining any land use permits and approvals, building permits, environmental impact reviews or any other approvals required for the financing, construction, installation, replacement, relocation, maintenance, operation or removal of the Wind Power Facilities.

12.5 Indemnity. Lessor shall indemnify, defend, protect and hold Lessee harmless from and against all damages, losses, costs, expenses (including reasonable attorneys' fees), liabilities, injuries and claims arising out of or caused by the operations or activities of Lessor or its invitees, employees, agents, contractors or other tenants.

12.6 Hazardous Materials. Lessor hereby represents and warrants to Lessee that, to the best of Lessor's knowledge: (i) there are no abandoned wells, solid waste disposal sites,

hazardous wastes or substances, or underground storage tanks located on the Leased Property, (ii) the Leased Property does not contain levels of petroleum or hazardous substances which require remediation; and (iii) the Leased Property is not subject to any judicial or administrative action, investigation or order under any applicable environmental laws or regulations. Lessor warrants that it has done nothing to contaminate the Leased Property with hazardous substances or wastes. Lessor shall indemnify, defend, protect and hold Lessee harmless from and against all damages, losses, costs, expenses (including reasonable attorneys' fees), liabilities, injuries and claims resulting from violation of any applicable environmental laws, except those violations resulting from Lessee's activities on the Leased Property.

12.7 Negative Covenant. Lessor shall not grant, convey, assign or provide any easement, license, permit, lease or other right for access across the Leased Property, or for generation or transmission of power on or across the Leased Property, to any third party in connection with the construction or operation of electrical generating or transmission facilities.

13. ASSIGNMENT AND SUBLETTING; EASEMENTS AND LICENSES.

Lessee may assign this Lease or sublet all or any part of the Leased Property or the Wind Power Facilities without obtaining the consent of Lessor. Without limiting the generality of the foregoing, a foreclosure and sale by a Leasehold Mortgagee pursuant to Section 14 shall be a permitted assignment. In the event of an assignment of Lessee's entire interest in this Lease, Lessee shall be released of all further liability under this Lease. If Lessee shall have subleased all or a portion of the Leased Property or the Wind Power Facilities, no such sublease shall be affected by a cancellation or termination of this Lease, and Lessor shall recognize the rights of the subtenant thereunder, provided only that such subtenant attorn to Lessor upon its request. Lessor shall enter into a non-disturbance and attornment agreement, in form and substance reasonably acceptable to Lessee, upon the request of the subtenant under any sublease. Lessee also shall have the right to grant easements, licenses or similar rights (however denominated) to one or more persons or entities, without obtaining the consent of Lessor.

14. LEASEHOLD FINANCING.

14.1 Mortgage by Lessee. Lessee may, from time to time, hypothecate, mortgage, pledge or alienate the Wind Power Facilities and/or Lessee's leasehold estate and rights under this Lease. Each holder of any such lien is hereinafter referred to as a "Leasehold Mortgagee." A Leasehold Mortgagee or its assigns may enforce such lien and acquire title to the leasehold estate in any lawful way and, pending foreclosure of such lien, the Leasehold Mortgagee may take possession of and operate the Leased property, performing all obligations performable by Lessee. Upon foreclosure of such lien by power of sale, judicial foreclosure or acquisition of the leasehold estate by deed in lieu of foreclosure, the Leasehold Mortgagee may, upon notice to Lessor, sell and assign the leasehold estate. Notwithstanding anything herein contained to the contrary, the Leasehold Mortgagee and/or any person or entity acquiring the leasehold estate shall be

liable to perform the obligations imposed on Lessee by this Lease only to the extent arising during the period during which such person or entity has ownership of the leasehold estate or possession of the Leased Property.

14.2 Rights of Leasehold Mortgagees.

(a) The right of a Leasehold Mortgagee to receive notices and to cure Lessee's defaults pursuant to the provisions of this Section 14 shall be available only to those Leasehold Mortgagees which shall have notified Lessor in writing of their name and address, or whose lien is recorded in the official records of the County in which the Leased Property is located, regardless of whether the specific provision in question expressly so states. When giving notice to Lessee of Lessee's default under this Lease, Lessor shall also serve a copy of such notice upon each Leasehold Mortgagee. No such notice shall be effective against a Leasehold Mortgagee unless and until served on such Leasehold Mortgagee. If Lessee shall default in the performance of any of its obligations under this Lease, then Lessor shall give each Leasehold Mortgagee a second written notice of such default and each Leasehold Mortgagee shall have the right, within thirty (30) days after the expiration of the cure period which this Lease provides to Lessee for curing such default, to cure such default and Lessor shall accept such performance as though the same had been done or performed by Lessee.

(b) In the case of a default by Lessee in the payment of money, Lessor shall take no action to terminate this Lease unless such default shall have continued beyond the cure period which this Lease provides to Lessee for curing such default, and then only after Lessor shall have given each Leasehold Mortgagee a second written notice of such default and an additional thirty (30) days, in addition to and after the expiration of Lessee's cure period, within which to cure such default.

(c) In the case of a non-mandatory default by Lessee, Lessor shall take no action to terminate this Lease unless such default shall have continued beyond the cure period which this Lease provides to Lessee for curing such default, and then only after Lessor shall have given each Leasehold Mortgagee a second written notice of such default and an additional thirty (30) days, in addition to and after the expiration of Lessee's cure period, within which to elect:

(i) to commence and diligently proceed to cure such default, if such default can be cured by the Leasehold Mortgagee without obtaining possession of the Leased Property; or

(ii) to commence and diligently proceed to obtain possession of the Leased Property (including possession by a receiver) in order to cure such default, in the case of a default which can be cured only after the Leasehold Mortgagee has obtained possession of the Leased Property; or

(iii) to institute and diligently pursue foreclosure proceedings or otherwise proceed to acquire Lessee's interest under this Lease. A Leasehold Mortgagee shall not be required to continue such possession or continue such foreclosure proceedings if the default which prompted the service of such notice shall have

been cured. A Leasehold Mortgagee shall have no obligation to cure any default in the payment of money which has occurred more than sixty (60) days before its receipt of notice of such default, in order to preserve its interest under its mortgage or to exercise any of the rights granted to it under this Lease. A Leasehold Mortgagee shall have no obligation to cure any default which is not reasonably susceptible of being cured by the Leasehold Mortgagee.

(d) If this Lease is terminated by Lessor on account of any default, or terminates for any other reason, then Lessor shall give prompt written notice thereof to each Leasehold Mortgagee. Each Leasehold Mortgagee, within sixty (60) days after receipt of written notice from Lessor, shall have the right to elect to enter into a new lease of the Leased Property as described below. Within thirty (30) days after receiving a Leasehold Mortgagee's written request therefor, Lessor shall execute and deliver a new lease of the Leased Property to such Leasehold Mortgagee or its nominee or to the purchaser, assignee or transferee, as the case may be, for the remainder of the Term of this Lease, containing the same covenants, agreements, terms, provisions and limitations as are contained in this Lease, provided that the Leasehold Mortgagee shall pay to Lessor, simultaneously with the delivery of such new lease, all unpaid rental due under this lease up to and including the date of the commencement of the term of such new lease and all expenses, including reasonable attorneys' fees, disbursements and court costs, incurred by Lessor in connection with Lessee's default, the termination of this Lease and the preparation of the new lease. After execution of the new lease, the Leasehold Mortgagee shall commence and diligently proceed to cure all defaults which reasonably can be cured by the Leasehold Mortgagee.

(e) As long as there is a Leasehold Mortgage, neither the bankruptcy nor the insolvency of Lessee shall operate to terminate, nor permit Lessor to terminate, this Lease as long as all rent and other charges payable by Lessee continue to be paid in accordance with the terms of this Lease.

(f) The time available to a Leasehold Mortgagee to initiate foreclosure proceedings as aforesaid shall be extended by the number of days of delay occasioned by judicial restriction against such initiation or occasioned by other circumstances beyond such Leasehold Mortgagee's reasonable control.

(g) During the period that a Leasehold Mortgagee shall be in possession of the Leased Property and/or during the pendency of any foreclosure proceedings instituted by a Leasehold Mortgagee, the Leasehold Mortgagee shall pay or cause to be paid all rent and other charges payable by Lessee which have accrued during said period and are unpaid. Following the acquisition of Lessee's leasehold estate by the Leasehold Mortgagee or its designee, either as a result of foreclosure or acceptance of an assignment in lieu of foreclosure, the Leasehold Mortgagee or party acquiring title to Lessee's leasehold estate shall commence performing all of Lessee's obligations under this Lease thereafter arising, whereon Lessor's right to terminate this Lease based upon the default in question shall be deemed waived. Any default not susceptible of being cured by the Leasehold Mortgagee or party acquiring title to Lessee's leasehold estate shall be, and shall be deemed to have been, waived by Lessor upon completion of the foreclosure proceedings or acquisition of Lessee's interest in this Lease by any purchaser (who may, but need not be, the Leasehold Mortgagee) at the foreclosure sale, or who otherwise acquires

Lessee's interest from the Leasehold Mortgagee or by virtue of a Leasehold Mortgagee's exercise of its remedies. No such purchaser, or successor to such purchaser, shall be liable to perform the obligations imposed on Lessee by this Lease incurred or accruing after such purchaser or successor no longer has ownership of the leasehold estate or possession of the Leased Property.

(h) If two or more Leasehold Mortgagees exercise their rights hereunder and there is a conflict which renders it impossible to comply with all such requests, then the Leasehold Mortgagee whose Leasehold Mortgage would be senior in priority if there were a foreclosure shall prevail. If any Leasehold Mortgagee pays any rental or other sums due hereunder which relate to periods other than during its actual ownership of the leasehold estate, such Leasehold Mortgagee shall be subrogated to any and all rights which may be asserted against Lessor with respect to such period of time.

(i) Upon the reasonable request of any Leasehold Mortgagee, Lessor and Lessee shall amend this Lease to include any provision requested by such Leasehold Mortgagee to implement the protective provisions contained in this Lease for the benefit of such Leasehold Mortgagee or to allow such Leasehold Mortgagee reasonable means to protect or preserve the lien of its Leasehold Mortgage on the occurrence of a default under this Lease; provided, however, that Lessor shall not be required to amend this Lease in any way which would affect the Term or rental hereunder or otherwise in any material respect adversely affect any rights of Lessor under this Lease.

15. DEFAULT AND TERMINATION.

15.1 Remedies Upon Lessee's Default. Lessee shall be in default under this Lease if: (i) Lessee shall have failed to perform any of Lessee's covenants under this Lease (other than the payment of rent or other charges) and such failure shall have continued for a period of thirty (30) days after written notice from Lessor (or if such failure is not reasonably capable of being cured within thirty (30) days, if Lessee shall not have commenced to cure the same within said 30-day period and/or shall not have diligently prosecuted the same to completion); or (ii) Lessee shall have failed to pay rent or other charges herein required to be paid by Lessee and such failure shall have continued for a period of fifteen (15) days after written notice from Lessor. If Lessee shall be in default after the expiration of the cure period set forth above, then Lessor shall be entitled, at its election, to terminate this Lease, reenter the Leased Property and take possession thereof (subject, however, to the rights of sublessees pursuant to Section 8 and Leasehold Mortgagees pursuant to Section 9) or, so long as Lessor does not terminate Lessee's right to possession of the Leased Property, keep this Lease in full force and effect and collect rent and other charges from Lessee as and when due under this Lease, with Lessor having the obligation to mitigate damages. If Lessor shall elect to terminate this Lease, then all rights and obligations of the parties shall terminate, except that Lessor shall have the right to sue for and collect all rents and other amounts with respect to which Lessee shall then be in default, and all damages to Lessor by reason of such default, Lessor having the obligation to mitigate damages, and Lessee shall surrender the Leased Property to Lessor. Upon the termination of this Lease, Lessee shall (a) upon written

request by Lessor, execute and record a quitclaim deed of Lessee's right, title and interest in and to the Leased Property, and (b) as soon as reasonably practicable thereafter, remove all Wind Power Facilities from the Leased Property. If Lessee fails to remove the Wind Power Facilities within twelve (12) months after termination of this Lease, then Lessor may do so, in which case Lessee shall reimburse Lessor for the reasonable costs of removal (less salvage) incurred by Lessor.

15.2 Remedies Upon Lessor's Default. If Lessor shall at any time be in default of any of its covenants under this Lease and such default shall continue for a period of thirty (30) days after written notice to Lessor (or if such default is not reasonably capable of being cured within thirty (30) days, if Lessor has not commenced to cure the same within said 30-day period and/or has not diligently prosecuted the same to completion), then Lessee shall be entitle to exercise concurrently or successively any one or more of the following rights, in addition to all other remedies provided in this Lease or available at law or in equity: (a) to bring suit for the collection of any amounts for which Lessor may be in default, or for the performance of any other covenant or agreement of Lessor, without terminating this Lease; and/or (b) to terminate this Lease upon thirty (30) days' written notice to Lessor, without waiving Lessee's rights to damages for Lessor's failure to perform its obligations hereunder.

16. MISCELLANEOUS.

16.1 Force Majeure. If performance of this Lease or of any obligation hereunder is prevented or substantially restricted or interfered with by reason of an event of "Force Majeure" (as defined below), the affected party, upon giving notice to the other party, shall be excused from such performance (except payment of rent) to the extent of and for the duration of such prevention, restriction or interference. The affected party shall use its reasonable efforts to avoid or remove such causes of nonperformance and shall continue performance as soon as such causes are removed. "Force Majeure" means, fire, earthquake, flood, tornado, or other acts of God and natural disasters; strikes or labor disputes; war, civil strife or other violence; any law, order proclamation, regulation, ordinance, action, demand or requirement of any government agency or utility; or any other act or condition beyond the reasonable control of a party.

16.2 Sound Emission Rights. The Lessee has the right to generate and maintain audible sound levels on and above the Leased Property up to sixty-five (65) dB(A) in excess of the ambient sound level measured at ground level at a point five hundred (500) meters in an upwind direction from the source of the sound, wherever originating, at any or all times of the day or night.

16.3 Confidentiality. Lessor shall maintain in the strictest confidence, for the sole benefit of Lessee, all information pertaining to the terms and conditions of this Lease, including, without limitation, the financial terms of, and payments under, this Lease, Lessee's site design and product design, methods of operation, methods of construction, power production or availability of the Wind Power Facilities, and the like, whether disclosed by Lessee or discovered by Lessor, unless such information is in the public domain by

reason of prior publication. Lessor shall not use such information for its own benefit, publish or otherwise disclose it to others, or permit its use by others.

16.4 Wind/Weather Data. Lessor acknowledges that all wind and weather data gathered through the use of Meteorological Structures on the Property and other activities of the Lessee during the term of this Agreement are proprietary and confidential and that all such data belongs to Lessee. Lessor agrees not to disclose any such data at any time to any third party, without the express written consent of the Lessee.

16.5 Successors and Assigns. This Lease shall burden the Leased Property and shall run with the land. This Lease shall inure to the benefit of and be binding upon Lessor and Lessee, and their respective heirs, successors and assigns.

16.6 Memorandum. Lessor and Lessee shall execute in recordable form and Lessee shall record, a memorandum of this Lease satisfactory in form and substance to Lessee and Lessor. Lessor consents to the recordation of the interest of any Leasehold Mortgagee or assignee of Lessee's interest in this Lease.

16.7 Notices. All notices pursuant to this Lease shall be in writing and shall be sent only by the following methods: personal delivery; mail (first-class, certified, returnreceipt requested, postage prepaid); or delivery by an overnight courier service which keeps records of deliveries (such as, by way of example but not limitation, Federal Express, United Parcel Service, and DHL). For purposes of giving notice hereunder, the respective addresses of the parties are, until changed as hereinafter provided, the following:

Lessor:
[address]

Lessee:
[address]

Any party may change its address at any time by giving written notice of such change to the other party in the manner provided herein. All notices shall be deemed given on the date of personal delivery or, if mailed by certified mail, on the delivery date or attempted delivery date shown on the return-receipt.

16.8 Entire Agreement/Amendments. This Lease and the attached Exhibits constitute the entire agreement between Lessor and Lessee respecting its subject matter, and replace and superseded any prior agreements. This Lease shall not be modified or amended except in a writing signed by both parties or their lawful successors in interest.

16.9 Legal Matters. This Lease shall be governed by and interpreted in accordance with the laws of the State of West Virginia. Any dispute shall be resolved in a court of competent jurisdiction in the state of West Virginia. The parties agree to first attempt to settle any dispute arising out of or in connection with this Lease by good-faith negotiation. If the

parties are unable to resolve amicably any dispute arising out of or in connection with this Lease, then each shall have all remedies available at law or in equity. Each party waives all right to trial by jury and specifically agrees that trial of suits or causes of action arising out of this Lease shall be to the Court. The parties agree that any rule of construction to the effect that ambiguities are to be resolved in favor of either party shall not be employed in the interpretation of this Lease. In any dispute arising out of or in connection with this Lease, a party that obtains an award substantially the same as the award sought therein shall be entitled to payment of its reasonable attorneys' fees in connection with the action. Time is of the essence with regard to the terms and conditions of this Lease.

16.10 Partial Invalidity. Should any provision of this Lease be held, in a final and unappealable decision by a court of competent jurisdiction, to be invalid, void or unenforceable, the remaining provisions hereof shall remain in full force and effect, unimpaired by the holding. Notwithstanding any other provision of this Lease, the parties agree that in no event shall the Term (or a Renewal Term, if applicable), the Construction Easement or the Wind Easement be for longer periods than permitted by applicable law.

16.11 Tax Credits. If under applicable law the holder of a lease becomes ineligible for any tax credit, benefit or incentive for alternative energy expenditure established by any local, state or federal government, then, at Lessee's option, Lessor and Lessee shall amend this Lease or replace it with a different instrument so as to convert Lessee's interest in the Leased Property to a substantially similar interest that makes Lessee eligible for such tax credit, benefit or incentive.

16.12 Estoppel Certificates. From time to time, each party, within fifteen (15) days after written request from the other party, shall execute and deliver an estoppel certificate certifying as to the status of this Lease and each party's performance thereunder.

16.13 Quiet Enjoyment. Lessor covenants and warrants that Lessor is the true and lawful owner of the Leased Property, subject only to those matters shown on the title report or abstract provided to Lessee, and has full right and power to lease the same. Lessor agrees that Lessee shall quietly and peaceably hold, possess and enjoy the Leased Property for the Term of this Lease, and any extension thereof, without any hindrance or molestation. Lessor shall defend title to the Leased Property and the use and occupancy of the same against the claims of all persons, except those claiming by or through Lessee. Lessor shall not enter into or modify any documents, including any declarations, easements, restrictions or other similar instruments, that are or may be recorded against the Lease Property, or otherwise affect the Leased Property, or the rights and/or obligations of Lessee, without first obtaining the prior written consent of Lessee, which consent may be withheld in Lessee's sole and absolute discretion.

16.14 Brokerage Commissions. Each of Lessor and Lessee warrants and represents to the other that there are no brokers' commissions, finders' fees or any other charges due to any broker, agent or other party in connection with the negotiation or execution of this

Lease, or on behalf of either of them. Lessor shall pay all brokerage commissions and other amounts owning to Broker and shall indemnify, defend, protect and hold Lessee harmless from and against all damages, losses, costs, expenses (including reasonable attorneys' fees), liabilities and claims in connection with such obligation and any claim by Broker for payments. Each party shall indemnify, defend, protect and hold the other party harmless from and against all damages, losses, costs, expenses (including reasonable attorneys' fees), liabilities and claims with respect to any claims made by any other broker or finder based upon such broker's or finder's representation or alleged representation of such indemnifying party.

16.15 Transfer Taxes. Lessor shall pay any transfer tax or other tax payable to any governmental taxing authority, including the County in which the Leased Property is located, by reason of the execution of this Lease and/or the recordation of a memorandum thereof.

IN WITNESS WHEREOF, the parties hereto have executed this Lease on the dates set forth below.

Lessee:
Angel Winds Renewable Energy LLC
By: A. Earl Long Jr.

Name:

Title:

Date:

Lessor:

By: Margaret M. Fazio

Claudine Burris
Notary Public
Stanly County, NC
My Commission Expires June 27, 2012

Name: Margaret M. Fazio

Title: owner/lessor

Date: 09.03.10

Mecklenburg County, North Carolina

I certify that the following person personally appeared before me this day, acknowledging to me that she signed the foregoing document:
Margaret M. Fazio.

Date: September 3, 2010

Claudine Burris: Notary Public
My commission expires: June 27, 2012

Claudine Burris
Notary Public
Stanly County, NC
My Commission Expires June 27, 2012

STATE OF WEST VIRGINIA
COUNTY OF MONROE

TAKEN, SUBSCRIBED, AND SWORN TO BEFORE THE UNDERSIGNED AUTHORITY BY A. Earl Long IN THE COUNTY AFORESAID THIS 23 DAY OF September 20 10

MY COMMISSION EXPIRES May 18 2015

NOTARY PUBLIC Jeremy F. Meadows

OFFICIAL SEAL
NOTARY PUBLIC
STATE OF WEST VIRGINIA
JEREMY E. MEADOWS
MONROE COUNTY CLERK
P. O. BOX 350
UNION, WV 24983
My commission expires May 18, 2015

Attachment C

EARL LONG
P O BOX 1122
BEAVER, WV 25813-1122

Donald J Evans
MONROE County 12:03:53 PM
Instrument No 60944
Date Recorded 09/23/2010
Document Type LEASE
Book-Page 20-641
Recording Fee $18.00
Additional $7.00

OPTION AGREEMENT AND LEASE

This OPTION AGREEMENT AND WIND ENERGY LEASE ("Agreement" or "Lease") is made by and between James L. Mc Ghee an individual and/or entity residing at Rt. 2 box 321 Peterstown WV 24963 and ("Lessor") and Angel Winds Renewable Energy LLC ("Lessee"), a West Virginia limited liability company.

WHEREAS, the Lessor desires to give Lessee an option to lease the real property more fully described in this Agreement, and on Lessee's exercise of the option, to lease the real property to the Lessee on the terms and conditions herein set forth, for the purpose of conducting feasibility studies and pre-development work that may lead to the construction of wind power facilities on the property;

WHEREAS, the Lessee develops real property sites for wind-energy usage, including pre-development activities and development and construction of wind power facilities; and

WHEREAS, the Lessee desires to acquire the right (but not the obligation) to lease the property for purposes of conducting feasibility studies, collecting wind data, and constructing Wind Power Facilities on the property, and operating the Wind Power Facilities for the term of the Lease, plus any Renewal Terms.

Now therefore, for valuable consideration, the receipt and sufficiency of which the parties hereto acknowledge, the parties agree as follows:

1. GRANT OF EXCLUSIVE OPTION.

Lessor hereby unconditionally and irrevocably grants, bargains, sells and conveys to Lessee, the exclusive right and option (the "Option") to lease the Property (or such portion thereof as may be designated by Lessee) in accordance with the terms and conditions of this Lease entered into by the parties. During the Option Term (defined below), and other than the Option granted herein, Lessor shall grant no option or other right in the Property with respect to Wind Power Facilities on the Property or any right related thereto. By executing this Option Agreement and Lease, Lessor acknowledges that (i) Lessor has the full power and authority to enter into and perform its obligations under this Agreement and (ii) Lessor holds fee simple title to the Property and is the sole owner of the Property.

2. TERM OF OPTION.

The term of the Option shall commence on the Effective Date, and shall continue for a period of two (2) years thereafter, (the "Option Term"), unless extended by the mutual agreement of the parties hereto.

3. CONSIDERATION FOR OPTION.

This Option is granted in consideration of a payment by Lessee to Lessor (the "Option Payment") in an amount equal to $1,000. The Option Payment shall be made within 60 days of the Effective Date hereof. The Option Payment is also consideration, in addition to the rent described below, for the Lease.

4. EXERCISE OF OPTION.

Lessee shall notify Lessor of its election to exercise the Option by providing written notice thereof before the expiration of the Option Term. All of the terms and conditions of the Lease shall apply from the Effective Date hereof, unless the Lessee does not exercise the Option within the Option Term. The Lease shall terminate at the expiration of the Option Term in the event Lessee does not exercise the Option within the Option Term.

5. ACTIVITIES DURING OPTION TERM.

During the Option Term, Lessor will cooperate with Lessee and take all action reasonably necessary to enable Lessee to conduct feasibility studies on the Property. Lessee will have the right to use the Property to determine the suitability of thereof for wind-powered electrical generating facilities. In connection with such use, Lessee will have the right to construct and place on the Property, and to operate, one or more "Meteorological Structures" (including without limitation meteorological towers and/or masts for the purpose of collecting weather and wind data on the Property), and to conduct land, engineering, environmental, and architectural surveys for the anticipated construction of wind turbine generators, the associated electrical transmission lines and related surface and subsurface equipment, collection and transmission grid, power conditioning equipment, transformers, telecommunications equipment, and other related facilities, equipment and improvements (collectively, the "Wind Power Facilities"). Lessee will have the right to enter and exit the Property over and across the Property.

6. LEASE.

On written notice of the exercise of the Option by Lessee, Lessor shall lease to Lessee, and Lessee shall lease from Lessor, that real property located in Monroe County WV, and more particularly described in Exhibit A attached hereto (the "Leased Property"). The Leased Property is graphically depicted in the drawings attached hereto as Exhibit B. Lessee shall have the right to use the Leased Property for the operation of a wind-powered electrical generating facility for the conversion of wind energy into electrical energy. In connection with such use, Lessee shall have the right to construct and place on the Leased Property, and to operate, one or more wind turbine generators (each, a "Turbine"), the associated electrical transmission lines and related surface and subsurface equipment, collection and transmission grid, power conditioning equipment, transformers, telecommunications equipment, and other related facilities, equipment and improvements (collectively, the "Wind Power Facilities").

Lessee shall at all times retain title to the Wind Power Facilities. Lessee shall have the right of ingress to and egress from the Wind Power Facilities over and across the Leased Property and, if necessary, over and across any adjacent property owned by Lessor, by means of existing roads or by routes which Lessee or Lessor may construct, whether located on the Leased Property or elsewhere. Lessor, at Lessor's risk as to loss of crops and compaction by reason of Lessee's use, may use the Leased Property for purposes of cultivation and other agricultural uses that do not interfere, in Lessee's sole determination, with Lessee's use of the Leased Property.

7. CONSTRUCTION AND WIND EASEMENTS.

Lessor shall sign and deliver to Lessee the Construction, Access, and Transmission Easement attached hereto as Exhibit C (the "Construction Easement") and the Wind Non-Obstruction Easement attached hereto as Exhibit D (the "Wind Easement"), each of which shall be recorded in the Currituck County Records. If more than one Construction Easement and/or Wind Easement is required in order for Lessee to construct and operate the Wind Power Facilities (either because the property of several different owners is involved, or because separate easements are needed for separate portions of the Wind Power Facilities), as determined by Lessee in its sole discretion, then Lessor shall cooperate with Lessee in obtaining all of such easements. These easements shall be appurtenant to this Lease.

8. LEASE TERM.

8.1 Commencement Date. The term of this Lease (the "Term") shall commence on that date (the "Commencement Date") by which the last of the conditions set forth in Section 8.2 shall have been satisfied, and shall end on the twenty-fifth (25^{th}) anniversary of the Commencement Date, unless renewed or terminated as provided in this Lease.

8.2 Condition Subsequent. Lessee shall have the right to terminate this Lease at any time prior to the satisfactory occurrence, as determined by Lessee, of all of the following:

(a) Lessee's receipt of consultants' reports confirming that there are no environmental conditions on the Leased Property which would interfere with the Wind Power Facilities or cause Lessee to incur any liability.

(b) Lessee's receipt of all zoning and land use approvals, and all other permits and approvals, required for the construction and operation of the Wind Power Facilities.

(c) Lessee's receipt of all easements described in Section 2 above, including, without limitation, a Wind Easement from Lessor and each adjoining property owner, the Construction Easement, and any other easements required in connection with the installation of the Wind Power Facilities (including, without limitation, any easement required for the construction and operation of, and/or the connection to and use of, an electrical substation).

(d) Lessee's satisfaction as to the economic viability of individual Turbines.

(e) Lessee's approval of title to the Leased Property and the legal description and survey of the Leased Property.

(f) Lessee's receipt of non-disturbance agreements from all holders of liens and other encumbrances affecting the Leased Property, and from all landlords under any master leases or underlying leases.

(g) Lessor's approval of acceptable areas on the Leased Property where Turbines may be constructed, operated, and maintained.

8.3 Renewals. The Lease shall be automatically renewed for additional, consecutive twenty (20) year terms ("Renewal Terms") unless and until Lessee gives written notice of termination, which notice shall be given not more than twelve (12) months nor less than four (4) months prior to the expiration of the then-current Term or Renewal Term. Each Renewal Term shall begin on the expiration date of the Term or previous Renewal Term. The same terms and conditions contained in this Lease shall govern the Renewal Terms, except that the rent for each Renewal Term shall be the then-current market rate. If the parties cannot agree on the rent on or before ninety (90) days prior to the commencement of the Renewal Term, then they shall conduct an appraisal pursuant to Section 8.4 below.

8.4 Appraisal Demand. If the parties are unable mutually to agree upon the fair market rent, then the fair market rent initially shall be determined by Lessee by written notice ("Lessee's Notice") given to Lessor promptly following the 90-day deadline set forth in Section 8.3. If Lessor disputes the amount of fair market rent set forth in Lessee's Notice, then, within ten (10) days after the date of Lessee's Notice, Lessor shall send Lessee a written notice ("Lessor's Notice") which clearly (i) disputes the fair market rent set forth in Lessee's Notice, and (ii) demands an appraisal pursuant to this Section 8.4. Within thirty (30) days of Lessor's Notice, the parties shall mutually select an appraiser, or it the parties cannot agree on an appraiser, then the parties shall each select one appraiser. The appraisal(s) shall be performed in accordance with standards customary in the wind energy industry. The appraiser(s) shall have at least five years of full-time commercial appraisal experience and be familiar with the fair market rent of properties leased for the operation of wind-powered electrical generating facilities in the general location of the Leased Property. Each party shall pay the fees and expenses of its respective appraiser.

8.5 Defective Notice. Lessor's Notice shall be deemed defective, and not given to Lessee, if it fails strictly to comply with the requirements and time period set forth above. If Lessor does not send Lessor's Notice within ten (10) days after the date of Lessee's Notice, or if Lessor's Notice fails to contain all of the required information, then the fair market rent for the Renewal Term in question shall be the amount specified in Lessee's Notice.

8.6 Determination of Final Appraisal. Any appraisal of the fair market rent obtained pursuant to Section 8.4 shall be delivered, with supporting documentation as is customary in the wind energy industry, to Lessee within forty-five (45) days of the Lessor's Notice. If no appraisal is delivered within the time allowed, the fair market rent for the Renewal Term in question shall be the amount specified in the Lessee's Notice. If two or more appraisals are obtained, the parties agree to take an average of all appraisals to determine the fair market rent. If the Lessee, in its sole discretion, disagrees with the average rent as determined by the appraisals, the Lessee may obtain another independent appraisal, at its cost. In the event the additional independent appraisal is reasonably consistent with the other appraisals obtained hereby, then this additional appraisal shall be the final fair market rent for the Renewal Term in question.

8.7 Lessee's Right to Terminate. Lessee shall have the right to terminate this Lease as to all or any part of the Leased Property, or as to any Turbine, at any time and from time to time, upon thirty (30) days' prior written notice to Lessor.

9. RENT.

9.1 Rent. Beginning sixty (30) days after the Lessee constructs and commissions the Wind Power Facility, Lessee shall pay rent for the Leased Property in the following amounts: a Base Rent of $2000 per turbine, and Royalties in the amount of 3.5 percent (3.5%) of the gross revenues generated from electricity sales by Lessee from Turbines located on the Property. (Base Rent and Royalties together are the "Rent"). Base Rent and Royalties payments will be made on the first day of the month. Rent shall end on the last day of the Term or upon physical removal of the Wind Power Facilities in accordance with Section 9.3. Lessor agrees that Rent includes compensation for any roads constructed by Lessee on the Leased Property.

9.2 Increases in Rent. The Base Rent shall be adjusted (but never decreased) at the beginning of each year of the Lease Term to reflect the increase, if any, in the "CPI" (as defined below). The "Adjustment Dates" shall be the first day of each Lease Year. The "Adjustment Index" shall be the CPI published most recently before the applicable Adjustment Date. The "Comparison Index" for the first CPI adjustment shall be the CPI published most recently before the applicable Commencement Date; the "Comparison Index" for each subsequent CPI adjustment shall be the Adjustment Index which was used for the immediately preceding CPI adjustment. On each Adjustment Date, the Rent payable immediately prior thereto shall be adjusted by multiplying such Rent by a fraction, the numerator of which is the applicable Adjustment Index and the denominator of which is the applicable Comparison Index. As used herein, the term "CPI" means the Consumer Price Index for the Mid-Atlantic region published by the Bureau of Labor Statistics of the United States Department of Labor. If the Base Year of the CPI is changed, then the foregoing calculation shall be made using the appropriate conversion factor published by the Bureau of Labor Statistics (or successor agency) to correlate to the Base Year of the CPI herein specified.

9.3 Removal of Wind Power Facilities. Lessee shall have the right, at any time and in its sole discretion, to remove one or more Turbines or other Wind Power Facilities. If Lessee removes a Turbine, then there shall be a corresponding reduction in the Rent. Lessor expressly waives any statutory or common law landlord's lien to which Lessor might be entitled. In the event that Lessee removes any portion of the Wind Power Facilities, that portion shall be removed to a depth of 42 inches below the natural surrounding grade.

9.4 Payment for Crop Damage. On the terms set forth below, Lessee shall pay Lessor for crop damage occurring on the Leased Property in 20___ as a direct result of Lessee's activities on the Leased Property. If Lessee damages Lessor's crops on the Leased Property in the first year of this Lease 20___, then Lessee shall pay Lessor damages calculated pursuant to the following formula: Damages=Price x Yield x Percentage of Damage x Acreage. The price for a damaged crop shall be the arithmetic average of (1) the West Virginia Board of Trade's price for that crop on the most recent previous March 1 and (2) the West Virginia Board of Trade's price for that crop on the most recent previous September 1. Yield will be the average of the previous three (3) years' yields according to the Lessor's records for the smallest parcel of land which includes the damaged area. If Lessor does not have yield records available, then the parties shall use FSA (*Farm Service Agency*) records or other commonly used yield information available for the area. The parties shall try in good faith to agree on the extent of damage and acreage affected. If they cannot so agree, then the extent of damage and acreage affected shall be determined by an impartial party selected by Lessee, such as a crop insurance adjuster or an extension agent. In no case shall Lessee be required to pay more than a single total crop loss in one year. Lessee shall make payment to Lessor not later than thirty (30) days after determining the amount of the payment due. Lessee shall not be required to pay for crop damage occurring after calendar year 20_____unless such damage is a direct result of construction activities of Lessee on the Property. No damages shall be payable for soil compaction, as opposed to crop damage, on the Leased Property in 20____or any other year.

10. TAXES.

Lessee shall pay any increase in the real property taxes on the Leased Property which is directly attributable to the installation of the Wind Power Facilities. Lessee shall not be liable for any taxes or assessments of any type levied or assessed against the Leased Property; provided, however, that Lessee shall pay, during the Lease Term, any increase in ad valorem real property taxes attributable to Lessee's installation of the Wind Power Facilities. To receive reimbursement under this Section, Lessor must submit the tax bill to Angel Winds Renewable Energy LLC, together with documentation showing Lessee's liability for the increase in ad valorem taxes, within thirty (30) days after Lessor receives the bill from the taxing authority and at least ten (10) days prior to the due date. The parties agree to fully cooperate to obtain any available tax refunds or tax abatements.

11. LESSEE'S REPRESENTATIONS, WARRANTIES AND COVENANTS.

11.1 Construction of Wind Power Facilities. Prior to Lessee's construction of the Wind Power Facilities, Lessee shall consult with Lessor for informational purposes only, but Lessor shall not have the right to approve any portion of the Wind Power Facilities. Lessee will obtain Lessor's approval as to removal of excavated materials from and disposition of excavated materials on the Leased Property. All topsoil will be reserved and replaced on the Leased Property unless otherwise agreed in advance by the parties. Lessor shall not unreasonably withhold or delay any required approvals.

11.2 Insurance and Indemnity. Lessee shall maintain liability insurance insuring Lessee against loss caused by Lessee's use of the Leased Property under this Lease, in an amount not less than $1,000,000 of combined single-limit liability coverage, and shall provide certificates of this insurance coverage to Lessor upon Lessor's written request. Lessee shall indemnify Lessor against liability for injuries and claims for direct physical damage to the extent caused by Lessee's exercise of rights granted in this Lease, the Construction Easement or the Wind Easement. This indemnity does not cover losses of rent, business opportunities, crop production, profits and the like that may result from Lessor's loss of use of the Leased Property. This indemnity also does not extend to, and Lessor expressly waives and releases any claims for: (a) property damage or personal injuries attributable to risks of known and unknown dangers associated with electrical generating facilities, or (b) claims of nuisance based on the construction, operation, maintenance or removal of the Wind Power Facilities.

11.3 Requirements and Governmental Agencies. Lessee shall comply in all material respects with valid laws applicable to the Wind Power Facilities, but shall have the right, in its sole discretion and at its sole expense, in its name or Lessor's name, to contest the validity or applicability to the Leased Property and/or the Wind Power Facilities of any law, ordinance, order, rule or regulation of any governmental agency or entity. Lessee shall control any such contest and Lessor shall cooperate with Lessee in every reasonable way in such contest, at no out-of-pocket expense to Lessor.

11.4 Mechanics' Liens. Lessee shall not permit any mechanics' liens arising out of Lessee's use of the Leased Property pursuant to this Lease to be filed against the Leased Property. If Lessee wishes to contest any such lien, Lessee shall, within sixty (60) days after it receives notice of the lien, provide a bond or other security Lessor may reasonably request, or remove such lien from the Leased Property pursuant to applicable law.

11.5 Hazardous Materials. Lessee shall indemnify Lessor against Lessee's material violation on the Leased Property of any applicable law or regulation relating to any substance, material or waste classified as hazardous or toxic, or which is regulated as a hazardous waste.

12. LESSOR'S REPRESENTATIONS, WARRANTIES AND COVENANTS.

Lessor hereby represents, warrants and covenants as follows:

12.1 Lessor's Authority. Lessor is the sole owner of the Leased Property and has the unrestricted right and authority to sign this Lease and to grant Lessee the rights granted in this Lease. When signed by Lessor, this Lease constitutes a valid and binding agreement enforceable against Lessor in accordance with its terms.

12.2 No Interference. Lessor agrees that Lessee shall have the exclusive right to convert all of the wind resources of the Leased Property. Lessor's activities and any grant of rights Lessor makes to any third party, whether located on the Leased Property or elsewhere, shall not, now or in the future, interfere in any way with Lessee's use of the Leased Property, the rights granted under this Lease, the Construction Easement or the Wind Easement. Lessor shall not interfere with the wind speed or wind direction over the Leased Property by engaging in any activity on the Leased Property or elsewhere that might cause a decrease in the output or efficiency of the Wind Power Facilities. Lessor reserves the right to erect buildings for ordinary agricultural use, except that Lessor must consult with and obtain Lessee's prior written approval as to the location and dimensions of all structures. Approval shall be based on whether, in Lessee's sole and absolute discretion, the proposed structures might interfere with wind speed or wind direction over any portion of the Leased Property, or cause a decrease in the output or efficiency of the Turbines, or interfere in any other way with Lessee's operations on the Leased Property.

12.3 Liens and Tenants. Lessor shall provide Lessee with a current abstract of title or preliminary title report for the Leased Property, showing all liens and other exceptions to title to the Leased Property. Lessor shall cooperate with Lessee to obtain a non-disturbance agreement from each lienholder (recorded or unrecorded) which provides that the lienholder shall not disturb Lessee's possession or rights under this Lease or terminate this Lease so long as Lessor is not entitled to terminate this Lease under its terms.

12.4 Requirements of Governmental Agencies. Lessor shall assist and fully cooperate with Lessee, at no out-of-pocket expense to Lessor, in applying for (including signing in Lessor's name, if necessary), complying with or obtaining any land use permits and approvals, building permits, environmental impact reviews or any other approvals required for the financing, construction, installation, replacement, relocation, maintenance, operation or removal of the Wind Power Facilities.

12.5 Indemnity. Lessor shall indemnify, defend, protect and hold Lessee harmless from and against all damages, losses, costs, expenses (including reasonable attorneys' fees), liabilities, injuries and claims arising out of or caused by the operations or activities of Lessor or its invitees, employees, agents, contractors or other tenants.

12.6 Hazardous Materials. Lessor hereby represents and warrants to Lessee that, to the best of Lessor's knowledge: (i) there are no abandoned wells, solid waste disposal sites,

hazardous wastes or substances, or underground storage tanks located on the Leased Property, (ii) the Leased Property does not contain levels of petroleum or hazardous substances which require remediation; and (iii) the Leased Property is not subject to any judicial or administrative action, investigation or order under any applicable environmental laws or regulations. Lessor warrants that it has done nothing to contaminate the Leased Property with hazardous substances or wastes. Lessor shall indemnify, defend, protect and hold Lessee harmless from and against all damages, losses, costs, expenses (including reasonable attorneys' fees), liabilities, injuries and claims resulting from violation of any applicable environmental laws, except those violations resulting from Lessee's activities on the Leased Property.

12.7 Negative Covenant. Lessor shall not grant, convey, assign or provide any easement, license, permit, lease or other right for access across the Leased Property, or for generation or transmission of power on or across the Leased Property, to any third party in connection with the construction or operation of electrical generating or transmission facilities.

13. ASSIGNMENT AND SUBLETTING; EASEMENTS AND LICENSES.

Lessee may assign this Lease or sublet all or any part of the Leased Property or the Wind Power Facilities without obtaining the consent of Lessor. Without limiting the generality of the foregoing, a foreclosure and sale by a Leasehold Mortgagee pursuant to Section 14 shall be a permitted assignment. In the event of an assignment of Lessee's entire interest in this Lease, Lessee shall be released of all further liability under this Lease. If Lessee shall have subleased all or a portion of the Leased Property or the Wind Power Facilities, no such sublease shall be affected by a cancellation or termination of this Lease, and Lessor shall recognize the rights of the subtenant thereunder, provided only that such subtenant attorn to Lessor upon its request. Lessor shall enter into a non-disturbance and attornment agreement, in form and substance reasonably acceptable to Lessee, upon the request of the subtenant under any sublease. Lessee also shall have the right to grant easements, licenses or similar rights (however denominated) to one or more persons or entities, without obtaining the consent of Lessor.

14. LEASEHOLD FINANCING.

14.1 Mortgage by Lessee. Lessee may, from time to time, hypothecate, mortgage, pledge or alienate the Wind Power Facilities and/or Lessee's leasehold estate and rights under this Lease. Each holder of any such lien is hereinafter referred to as a "Leasehold Mortgagee." A Leasehold Mortgagee or its assigns may enforce such lien and acquire title to the leasehold estate in any lawful way and, pending foreclosure of such lien, the Leasehold Mortgagee may take possession of and operate the Leased property, performing all obligations performable by Lessee. Upon foreclosure of such lien by power of sale, judicial foreclosure or acquisition of the leasehold estate by deed in lieu of foreclosure, the Leasehold Mortgagee may, upon notice to Lessor, sell and assign the leasehold estate. Notwithstanding anything herein contained to the contrary, the Leasehold Mortgagee and/or any person or entity acquiring the leasehold estate shall be

liable to perform the obligations imposed on Lessee by this Lease only to the extent arising during the period during which such person or entity has ownership of the leasehold estate or possession of the Leased Property.

14.2 Rights of Leasehold Mortgagees.

(a) The right of a Leasehold Mortgagee to receive notices and to cure Lessee's defaults pursuant to the provisions of this Section 14 shall be available only to those Leasehold Mortgagees which shall have notified Lessor in writing of their name and address, or whose lien is recorded in the official records of the County in which the Leased Property is located, regardless of whether the specific provision in question expressly so states. When giving notice to Lessee of Lessee's default under this Lease, Lessor shall also serve a copy of such notice upon each Leasehold Mortgagee. No such notice shall be effective against a Leasehold Mortgagee unless and until served on such Leasehold Mortgagee. If Lessee shall default in the performance of any of its obligations under this Lease, then Lessor shall give each Leasehold Mortgagee a second written notice of such default and each Leasehold Mortgagee shall have the right, within thirty (30) days after the expiration of the cure period which this Lease provides to Lessee for curing such default, to cure such default and Lessor shall accept such performance as though the same had been done or performed by Lessee.

(b) In the case of a default by Lessee in the payment of money, Lessor shall take no action to terminate this Lease unless such default shall have continued beyond the cure period which this Lease provides to Lessee for curing such default, and then only after Lessor shall have given each Leasehold Mortgagee a second written notice of such default and an additional thirty (30) days, in addition to and after the expiration of Lessee's cure period, within which to cure such default.

(c) In the case of a non-mandatory default by Lessee, Lessor shall take no action to terminate this Lease unless such default shall have continued beyond the cure period which this Lease provides to Lessee for curing such default, and then only after Lessor shall have given each Leasehold Mortgagee a second written notice of such default and an additional thirty (30) days, in addition to and after the expiration of Lessee's cure period, within which to elect:

(i) to commence and diligently proceed to cure such default, if such default can be cured by the Leasehold Mortgagee without obtaining possession of the Leased Property; or

(ii) to commence and diligently proceed to obtain possession of the Leased Property (including possession by a receiver) in order to cure such default, in the case of a default which can be cured only after the Leasehold Mortgagee has obtained possession of the Leased Property; or

(iii) to institute and diligently pursue foreclosure proceedings or otherwise proceed to acquire Lessee's interest under this Lease. A Leasehold Mortgagee shall not be required to continue such possession or continue such foreclosure proceedings if the default which prompted the service of such notice shall have

been cured. A Leasehold Mortgagee shall have no obligation to cure any default in the payment of money which has occurred more than sixty (60) days before its receipt of notice of such default, in order to preserve its interest under its mortgage or to exercise any of the rights granted to it under this Lease. A Leasehold Mortgagee shall have no obligation to cure any default which is not reasonably susceptible of being cured by the Leasehold Mortgagee.

(d) If this Lease is terminated by Lessor on account of any default, or terminates for any other reason, then Lessor shall give prompt written notice thereof to each Leasehold Mortgagee. Each Leasehold Mortgagee, within sixty (60) days after receipt of written notice from Lessor, shall have the right to elect to enter into a new lease of the Leased Property as described below. Within thirty (30) days after receiving a Leasehold Mortgagee's written request therefor, Lessor shall execute and deliver a new lease of the Leased Property to such Leasehold Mortgagee or its nominee or to the purchaser, assignee or transferee, as the case may be, for the remainder of the Term of this Lease, containing the same covenants, agreements, terms, provisions and limitations as are contained in this Lease, provided that the Leasehold Mortgagee shall pay to Lessor, simultaneously with the delivery of such new lease, all unpaid rental due under this lease up to and including the date of the commencement of the term of such new lease and all expenses, including reasonable attorneys' fees, disbursements and court costs, incurred by Lessor in connection with Lessee's default, the termination of this Lease and the preparation of the new lease. After execution of the new lease, the Leasehold Mortgagee shall commence and diligently proceed to cure all defaults which reasonably can be cured by the Leasehold Mortgagee.

(e) As long as there is a Leasehold Mortgage, neither the bankruptcy nor the insolvency of Lessee shall operate to terminate, nor permit Lessor to terminate, this Lease as long as all rent and other charges payable by Lessee continue to be paid in accordance with the terms of this Lease.

(f) The time available to a Leasehold Mortgagee to initiate foreclosure proceedings as aforesaid shall be extended by the number of days of delay occasioned by judicial restriction against such initiation or occasioned by other circumstances beyond such Leasehold Mortgagee's reasonable control.

(g) During the period that a Leasehold Mortgagee shall be in possession of the Leased Property and/or during the pendency of any foreclosure proceedings instituted by a Leasehold Mortgagee, the Leasehold Mortgagee shall pay or cause to be paid all rent and other charges payable by Lessee which have accrued during said period and are unpaid. Following the acquisition of Lessee's leasehold estate by the Leasehold Mortgagee or its designee, either as a result of foreclosure or acceptance of an assignment in lieu of foreclosure, the Leasehold Mortgagee or party acquiring title to Lessee's leasehold estate shall commence performing all of Lessee's obligations under this Lease thereafter arising, whereon Lessor's right to terminate this Lease based upon the default in question shall be deemed waived. Any default not susceptible of being cured by the Leasehold Mortgagee or party acquiring title to Lessee's leasehold estate shall be, and shall be deemed to have been, waived by Lessor upon completion of the foreclosure proceedings or acquisition of Lessee's interest in this Lease by any purchaser (who may, but need not be, the Leasehold Mortgagee) at the foreclosure sale, or who otherwise acquires

Lessee's interest from the Leasehold Mortgagee or by virtue of a Leasehold Mortgagee's exercise of its remedies. No such purchaser, or successor to such purchaser, shall be liable to perform the obligations imposed on Lessee by this Lease incurred or accruing after such purchaser or successor no longer has ownership of the leasehold estate or possession of the Leased Property.

(h) If two or more Leasehold Mortgagees exercise their rights hereunder and there is a conflict which renders it impossible to comply with all such requests, then the Leasehold Mortgagee whose Leasehold Mortgage would be senior in priority if there were a foreclosure shall prevail. If any Leasehold Mortgagee pays any rental or other sums due hereunder which relate to periods other than during its actual ownership of the leasehold estate, such Leasehold Mortgagee shall be subrogated to any and all rights which may be asserted against Lessor with respect to such period of time.

(i) Upon the reasonable request of any Leasehold Mortgagee, Lessor and Lessee shall amend this Lease to include any provision requested by such Leasehold Mortgagee to implement the protective provisions contained in this Lease for the benefit of such Leasehold Mortgagee or to allow such Leasehold Mortgagee reasonable means to protect or preserve the lien of its Leasehold Mortgage on the occurrence of a default under this Lease; provided, however, that Lessor shall not be required to amend this Lease in any way which would affect the Term or rental hereunder or otherwise in any material respect adversely affect any rights of Lessor under this Lease.

15. DEFAULT AND TERMINATION.

15.1 Remedies Upon Lessee's Default. Lessee shall be in default under this Lease if: (i) Lessee shall have failed to perform any of Lessee's covenants under this Lease (other than the payment of rent or other charges) and such failure shall have continued for a period of thirty (30) days after written notice from Lessor (or if such failure is not reasonably capable of being cured within thirty (30) days, if Lessee shall not have commenced to cure the same within said 30-day period and/or shall not have diligently prosecuted the same to completion); or (ii) Lessee shall have failed to pay rent or other charges herein required to be paid by Lessee and such failure shall have continued for a period of fifteen (15) days after written notice from Lessor. If Lessee shall be in default after the expiration of the cure period set forth above, then Lessor shall be entitled, at its election, to terminate this Lease, reenter the Leased Property and take possession thereof (subject, however, to the rights of sublessees pursuant to Section 8 and Leasehold Mortgagees pursuant to Section 9) or, so long as Lessor does not terminate Lessee's right to possession of the Leased Property, keep this Lease in full force and effect and collect rent and other charges from Lessee as and when due under this Lease, with Lessor having the obligation to mitigate damages. If Lessor shall elect to terminate this Lease, then all rights and obligations of the parties shall terminate, except that Lessor shall have the right to sue for and collect all rents and other amounts with respect to which Lessee shall then be in default, and all damages to Lessor by reason of such default, Lessor having the obligation to mitigate damages, and Lessee shall surrender the Leased Property to Lessor. Upon the termination of this Lease, Lessee shall (a) upon written

request by Lessor, execute and record a quitclaim deed of Lessee's right, title and interest in and to the Leased Property, and (b) as soon as reasonably practicable thereafter, remove all Wind Power Facilities from the Leased Property. If Lessee fails to remove the Wind Power Facilities within twelve (12) months after termination of this Lease, then Lessor may do so, in which case Lessee shall reimburse Lessor for the reasonable costs of removal (less salvage) incurred by Lessor.

15.2 Remedies Upon Lessor's Default. If Lessor shall at any time be in default of any of its covenants under this Lease and such default shall continue for a period of thirty (30) days after written notice to Lessor (or if such default is not reasonably capable of being cured within thirty (30) days, if Lessor has not commenced to cure the same within said 30-day period and/or has not diligently prosecuted the same to completion), then Lessee shall be entitle to exercise concurrently or successively any one or more of the following rights, in addition to all other remedies provided in this Lease or available at law or in equity: (a) to bring suit for the collection of any amounts for which Lessor may be in default, or for the performance of any other covenant or agreement of Lessor, without terminating this Lease; and/or (b) to terminate this Lease upon thirty (30) days' written notice to Lessor, without waiving Lessee's rights to damages for Lessor's failure to perform its obligations hereunder.

16. MISCELLANEOUS.

16.1 Force Majeure. If performance of this Lease or of any obligation hereunder is prevented or substantially restricted or interfered with by reason of an event of "Force Majeure" (as defined below), the affected party, upon giving notice to the other party, shall be excused from such performance (except payment of rent) to the extent of and for the duration of such prevention, restriction or interference. The affected party shall use its reasonable efforts to avoid or remove such causes of nonperformance and shall continue performance as soon as such causes are removed. "Force Majeure" means, fire, earthquake, flood, tornado, or other acts of God and natural disasters; strikes or labor disputes; war, civil strife or other violence; any law, order proclamation, regulation, ordinance, action, demand or requirement of any government agency or utility; or any other act or condition beyond the reasonable control of a party.

16.2 Sound Emission Rights. The Lessee has the right to generate and maintain audible sound levels on and above the Leased Property up to sixty-five (65) dB(A) in excess of the ambient sound level measured at ground level at a point five hundred (500) meters in an upwind direction from the source of the sound, wherever originating, at any or all times of the day or night.

16.3 Confidentiality. Lessor shall maintain in the strictest confidence, for the sole benefit of Lessee, all information pertaining to the terms and conditions of this Lease, including, without limitation, the financial terms of, and payments under, this Lease, Lessee's site design and product design, methods of operation, methods of construction, power production or availability of the Wind Power Facilities, and the like, whether disclosed by Lessee or discovered by Lessor, unless such information is in the public domain by

reason of prior publication. Lessor shall not use such information for its own benefit, publish or otherwise disclose it to others, or permit its use by others.

16.4 Wind/Weather Data. Lessor acknowledges that all wind and weather data gathered through the use of Meteorological Structures on the Property and other activities of the Lessee during the term of this Agreement are proprietary and confidential and that all such data belongs to Lessee. Lessor agrees not to disclose any such data at any time to any third party, without the express written consent of the Lessee.

16.5 Successors and Assigns. This Lease shall burden the Leased Property and shall run with the land. This Lease shall inure to the benefit of and be binding upon Lessor and Lessee, and their respective heirs, successors and assigns.

16.6 Memorandum. Lessor and Lessee shall execute in recordable form and Lessee shall record, a memorandum of this Lease satisfactory in form and substance to Lessee and Lessor. Lessor consents to the recordation of the interest of any Leasehold Mortgagee or assignee of Lessee's interest in this Lease.

16.7 Notices. All notices pursuant to this Lease shall be in writing and shall be sent only by the following methods: personal delivery; mail (first-class, certified, returnreceipt requested, postage prepaid); or delivery by an overnight courier service which keeps records of deliveries (such as, by way of example but not limitation, Federal Express, United Parcel Service, and DHL). For purposes of giving notice hereunder, the respective addresses of the parties are, until changed as hereinafter provided, the following:

Lessor:
[address]

Lessee:
[address]

Any party may change its address at any time by giving written notice of such change to the other party in the manner provided herein. All notices shall be deemed given on the date of personal delivery or, if mailed by certified mail, on the delivery date or attempted delivery date shown on the return-receipt.

16.8 Entire Agreement/Amendments. This Lease and the attached Exhibits constitute the entire agreement between Lessor and Lessee respecting its subject matter, and replace and superseded any prior agreements. This Lease shall not be modified or amended except in a writing signed by both parties or their lawful successors in interest.

16.9 Legal Matters. This Lease shall be governed by and interpreted in accordance with the laws of the State of West Virginia. Any dispute shall be resolved in a court of competent jurisdiction in the state of West Virginia. The parties agree to first attempt to settle any dispute arising out of or in connection with this Lease by good-faith negotiation. If the

parties are unable to resolve amicably any dispute arising out of or in connection with this Lease, then each shall have all remedies available at law or in equity. Each party waives all right to trial by jury and specifically agrees that trial of suits or causes of action arising out of this Lease shall be to the Court. The parties agree that any rule of construction to the effect that ambiguities are to be resolved in favor of either party shall not be employed in the interpretation of this Lease. In any dispute arising out of or in connection with this Lease, a party that obtains an award substantially the same as the award sought therein shall be entitled to payment of its reasonable attorneys' fees in connection with the action. Time is of the essence with regard to the terms and conditions of this Lease.

16.10 Partial Invalidity. Should any provision of this Lease be held, in a final and unappealable decision by a court of competent jurisdiction, to be invalid, void or unenforceable, the remaining provisions hereof shall remain in full force and effect, unimpaired by the holding. Notwithstanding any other provision of this Lease, the parties agree that in no event shall the Term (or a Renewal Term, if applicable), the Construction Easement or the Wind Easement be for longer periods than permitted by applicable law.

16.11 Tax Credits. If under applicable law the holder of a lease becomes ineligible for any tax credit, benefit or incentive for alternative energy expenditure established by any local, state or federal government, then, at Lessee's option, Lessor and Lessee shall amend this Lease or replace it with a different instrument so as to convert Lessee's interest in the Leased Property to a substantially similar interest that makes Lessee eligible for such tax credit, benefit or incentive.

16.12 Estoppel Certificates. From time to time, each party, within fifteen (15) days after written request from the other party, shall execute and deliver an estoppel certificate certifying as to the status of this Lease and each party's performance thereunder.

16.13 Quiet Enjoyment. Lessor covenants and warrants that Lessor is the true and lawful owner of the Leased Property, subject only to those matters shown on the title report or abstract provided to Lessee, and has full right and power to lease the same. Lessor agrees that Lessee shall quietly and peaceably hold, possess and enjoy the Leased Property for the Term of this Lease, and any extension thereof, without any hindrance or molestation. Lessor shall defend title to the Leased Property and the use and occupancy of the same against the claims of all persons, except those claiming by or through Lessee. Lessor shall not enter into or modify any documents, including any declarations, easements, restrictions or other similar instruments, that are or may be recorded against the Lease Property, or otherwise affect the Leased Property, or the rights and/or obligations of Lessee, without first obtaining the prior written consent of Lessee, which consent may be withheld in Lessee's sole and absolute discretion.

16.14 Brokerage Commissions. Each of Lessor and Lessee warrants and represents to the other that there are no brokers' commissions, finders' fees or any other charges due to any broker, agent or other party in connection with the negotiation or execution of this

Lease, or on behalf of either of them. Lessor shall pay all brokerage commissions and other amounts owning to Broker and shall indemnify, defend, protect and hold Lessee harmless from and against all damages, losses, costs, expenses (including reasonable attorneys' fees), liabilities and claims in connection with such obligation and any claim by Broker for payments. Each party shall indemnify, defend, protect and hold the other party harmless from and against all damages, losses, costs, expenses (including reasonable attorneys' fees), liabilities and claims with respect to any claims made by any other broker or finder based upon such broker's or finder's representation or alleged representation of such indemnifying party.

16.15 Transfer Taxes. Lessor shall pay any transfer tax or other tax payable to any governmental taxing authority, including the County in which the Leased Property is located, by reason of the execution of this Lease and/or the recordation of a memorandum thereof.

IN WITNESS WHEREOF, the parties hereto have executed this Lease on the dates set forth below.

Lessee:
Angel Winds Renewable Energy LLC
By: J. Earl Hoag Jr.

Name:

Title:

Date:

Lessor:

By: James McGhee

Name: James L. McGhee

Title: Notary
Betty B Brown
Commission Expires
April 12, 2010

Date:

OFFICIAL SEAL
STATE OF WEST VIRGINIA
NOTARY PUBLIC
BETTY B. BROWN
P. O. BOX 141
PETERSTOWN, WV 24963
My commission expires November 12, 2014

STATE OF WEST VIRGINIA
COUNTY OF MONROE

TAKEN, SUBSCRIBED, AND SWORN TO BEFORE THE UNDERSIGNED AUTHORITY BY A. Earl Long Jr
IN THE COUNTY AFORESAID THIS 23 DAY OF September
20 10

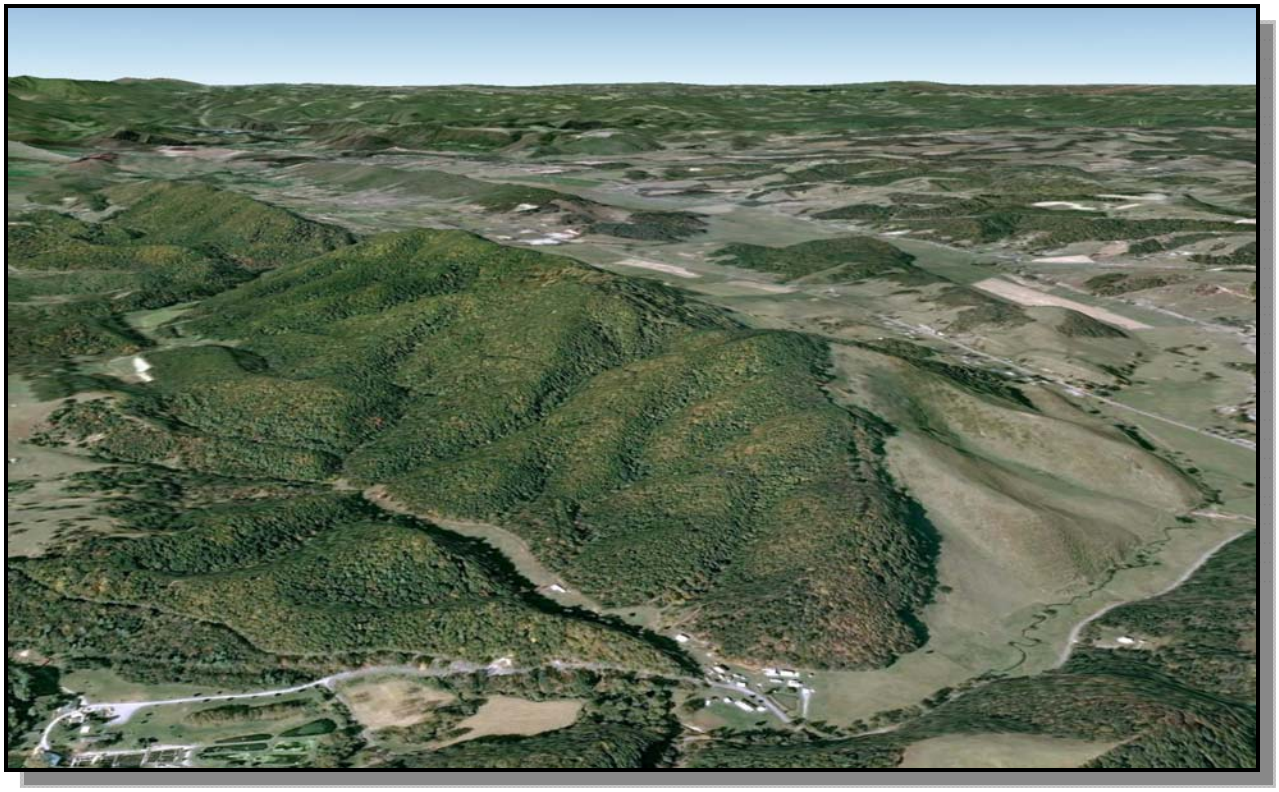
MY COMMISSION EXPIRES May 18, 2015

NOTARY PUBLIC Jeremy Meadows

OFFICIAL SEAL
NOTARY PUBLIC
STATE OF WEST VIRGINIA
JEREMY E. MEADOWS
MONROE COUNTY CLERK
P. O. BOX 350
UNION, WV 24983
My commission expires May 18, 2015

Attachment D

Pre-construction Development Proposal for the Little Mountain Project in Monroe County, WV



Prepared for:

Angel Winds Renewable Energy LLC

August 24, 2010

Table of Contents

1.0 Alpha Energy Introduction

Alpha Energy LLC is a Maryland based Limited Liability Corporation developing community based renewable energy solutions to create new green power production while stabilizing the existing power grid and future energy costs. Alpha Energy's primary focus is on wind energy suited to fit with in communities, harmonized with regional infrastructure and local concerns. Alpha Energy projects are scalable with immediate benefits for the local community, the grid and the environment.

Alpha Energy is a full service developer of community scale wind energy with prospective sites under development in Pennsylvania, Michigan and the Chesapeake Bay region. Our team of company officers and strategic partners are accomplished leaders in the industries they represent. Based in Annapolis Maryland, AE activities have attracted key players to their board and galvanized public support from local, state and national levels.

Our company's Community Wind model maintains a high regard for community involvement, public priorities and concerns. Alpha integrates community, environment and public interests into a collective renewable energy development process.

Alpha Energy's focus on providing clean renewable wind energy to the local power grid has direct benefits to the local community and the larger region as a whole. Our wind energy facilities provide enormous local benefit through clean power, local taxes, local investment and job creation.

This is a very exciting time for American communities. We now have the technology and commercial market to develop and invest in local wholesale electricity production, while protecting human health, and the environment. Alpha Energy believes that developing future energy sources starts today; in our own communities with our own renewable resources that will propel us into diversified energy independence.

2.0 Desktop Wind Energy Analysis

Alpha Energy has analyzed the localized Meteodyn wind study for Little Mountain, local restrictions, current land-use, wind turbine hardware and current transmission infrastructure to determine the potential for developing wind energy on the Little Mountain ridgeline near Peterstown, WV. We have prepared a wind energy production projection for review and discussion in Section 3.

2.1 Desktop Analysis criteria

Alpha Energy has completed a preliminary desktop analysis to determine maximum wind energy production of the Little Mountain Ridgeline using the following criteria:

1.) **Land area**: Considered only top elevation areas on Little Mountain. Additional parcels will be considered after the civil engineering report is reviewed by General Electric Wind Energy.

2.) **Wind Turbine:** Used the General Electric 1.6 MW xle[1] turbine for this preliminary analysis. The GE 1.6xle is production ready from Pensacola, FL and the Greenville, SC manufacturing and assembly plant. The world class turbine is available on an 85 meter tower with 84 meter rotor diameter. This turbine is well suited for the wind class on the ridgeline.

3.) **Setbacks**: Used turbine spacing setbacks:

- 3 rotor diameters with parallel spacing;

4.) **Wind resource**: At least 6.0 Meters per second at 80 meters with 360 degrees of wind direction. This is a conservative wind speed based on the Meteodyn Preliminary Wind Analysis of Little Mountain.

5.) **Proximity to interconnection**: Within 5 miles of an existing transmission line

2.2 Desktop Analysis Methodology

The five criteria in Section 2.1 were used to determine the maximum number of GE1.6MW wind turbines that could be constructed profitably on the Little Mountain Ridge. The methodology is based in land-use planning using ArcGIS software with the following inputs; meteorology data, power transmission data, topographic data, federal and state land data, aerial imagery and turbine location analytics.

Limitations of this preliminary analysis include: (1) lack of on-site wind data to properly classify the wind resource, capacity factor and ideal turbine spacing; (2) lack of interference data from regulatory agencies that may limit turbine heights or eliminate certain areas from development; (3) lack of civil engineering report with turbine manufacturing assessment to determine construction and logistics feasibility.

Increasing the land available into any future analysis from nearby ridges will increase the number of turbines and overall production. In addition, onsite wind data will provide a baseline to increase or decrease the turbine spacing requirements, thereby increasing or decreasing the turbine quantity. Decreasing the land available for wind turbine siting from development restrictions or unfavorable on-site wind data will decrease the number of turbines and overall production. Finally, the geo-technical report, civil engineering or turbine manufacturer logistics study could provide unfeasible or cost prohibitive.

3.0 Angel Winds Wind Energy Potential

The wind energy potential on Little Mountain is estimated to be 16 mega-watts (MW) from 10 General Electric 1.6MW turbines placed on the ridgeline using the criteria and methodology in Section 2. This is significant renewable energy, enough to power 6,600 homes.

Angel Winds Wind Energy Potential

16 MW

10 GE 1.6MW Turbines

Power for 6,600 homes

42, 048,000 kilowatt hours

5-6 direct jobs

440 jobs within the total industry

3.1 Retail electricity potential

The total scope of this project is estimated to produce an annual average of 42,048,000 kilowatt hours. The current West Virginia residential retail electricity rate for the estimated production is estimated to be over $3,300,000[2].

Note: This is a conservative estimate based on annual kilowatt hour projections with a 30% capacity factor for purposes of demonstrating the retail price for a consumer in West Virginia. Actual revenue from this project would be determined by a future power purchase agreement with a wholesale electricity buyer and a certified renewable energy credit buyer.

3.2 Job Creation

Wind energy stimulates the growth of rural communities by adding a long-term source of highly-skilled jobs. As compared to traditional fossil fuels, renewable energy is a more labor-intensive industry by producing 27% more jobs per MW than a traditional coal-fired power plant [3]. Wind farms generate a wide variety of high-wage and high-skilled jobs in: 1) research and development; 2) design and manufacturing; 3) construction and installation; and 4) operations and maintenance. For every one (1) megawatt of installed capacity, wind energy produces 22 direct and indirect jobs[4]. For a typical 100MW wind farm there are an average of 100 construction jobs and 18 operations and maintenance jobs[5].

3.3 Landowner and Tax Revenue

Wind energy projects are farmers' and landowners' new cash crop. Leasing a 16MW project could generate $65,000 in landowner payments annually. However, shared ownership of a wind energy system, as with a Community Owned model, can bring in a significant amount more. Local ownership creates more local

jobs and local pride in producing sustainable, clean and renewable electricity for their community. It also puts more money back into the hands of landowners and the local economy, not absentee corporate developers.

Wind power also provides a significant amount of tax revenues to rural areas. Property tax revenues for this project in Monroe County, WV are 2.2%; property tax payments provide $22,000 per MW of installed capacity. This project is estimated to yield over $350,000 in annual property taxes for Monroe County.

3.4 Community Wind showcase

This project has the potential to be a community wind showcase for the wind industry. As the first locally owned wind farm in West Virginia, the Little Mountain project could provide political demonstration and career education for a new and promising West Virginian wind industry.

3.5 Assumptions

The projections outlined in this section are calculated with certain reasonable assumptions for a preliminary desktop analysis (accuracy of published data as well as logistical and legal factors). These assumptions will be vetted and verified throughout the comprehensive feasibility study as this project moves on to the next phase. Any future Alpha Energy projections or proposals will disclose all findings and factors that would cause any deviation from the intent and original plans. Moreover, all deviations will be discussed with the Angel Winds Renewable Energy LLC as they are discovered.

4.0 Little Mountain Wind Energy Project Scope of Work

Alpha Energy has compiled all requirements and preliminary cost estimates to build a 16MW wind energy facility on Little Mountain near Peterstown, WV. These costs include final engineering and design needed to provide Angel Winds Renewable Energy LLC an accurate estimate for grant and investor funding.

The scope of work for the first phase on this project is provided in Section 5. The second or construction phase of this project is provided in Section 6. All costs are estimates based on past invoices or recent quotes for similar services in the Mid-Atlantic. The purpose of this proposal is to provide the Angel Winds Renewable Energy LLC with a detailed outline of pre-development requirements and estimated costs for a utility wind energy project on Little Mountain in Monroe County, West Virginia.

4.1 The Alpha Approach

A careful approach was followed during this process to protect the interests of the Angel Winds Renewable Energy LLC and non-profit organization sponsors. We are confident we will provide the best price while maintaining exceptional quality and performance. This is a ground breaking community owned wind energy project with significant implications for the Region. To better position this project for grant award and future equity investment, Alpha Energy has aligned General Electric and two experienced, award winning engineering and construction firms. Alpha has also teamed with one of the brightest and most experienced electrical engineers in the renewable energy industry to design and manage the interconnection.

In addition, Alpha has provided feasibility, engineering and construction estimates based on past projects, institutional insight and current labor and equipment rates. Please use these figures as forecast estimations and not fixed prices quotations.

5.0 Feasibility Analysis, Engineering and Permitting

This section outlines the feasibility, engineering and permitting requirements of a utility wind energy project. There is also the potential for wildlife, noise, flicker and view-shed studies. These studies are included in this section but note that these are not defined requirements by financial lenders or regulatory agencies. These optional studies are included as good neighbor policies by Alpha Energy.

5.1 Federal Aviation Administration (FAA) and National Telecommunication Information Agency (NTIA) Interference Study

Federal agency interference study for potential impact from the installation and operation of wind turbines at the project site. This process takes 60-90 days.

Estimated Interference Study Cost: $7,000

5.2 On-site Meteorological Study

Installation of a 60-meter meteorological tower to measure wind speed, direction and density at various heights. The data collected from this study is used to make critical design decisions and is required by lending institutions, equity investors and turbine manufacturers. This study lasts from 12-18 months.

Estimated Meteorological Study Cost: $40,000

5.3 Wind Analysis

Data from the 12-18 month meteorological study is analyzed for power production, turbine specifications and turbine spacing. Report is used for financing construction, refining the scope of civil engineering and by turbine manufacturer to quote a specific turbine model.

Estimated Wind Analysis Cost: $20,000

5.3 Power Purchase Agreement and Legal Representation

Legal representation for Power Purchase Agreement (PPA) negotiations and closing. Power may be purchased by a range of utilities and green power buyers in the Mid-Atlantic. This process takes approximately 2 months.

Estimated PPA and Attorney Fees: $20,000

5.4 Interconnection Study

Utility interconnection study performed by the PJM and Transmission Operator to determine a.) capacity of existing electrical infrastructure to integrate power generated from the new wind project; b.) required upgrades and transformer/conditioning equipment; c.) specific location for the interconnection; d.) costs for interconnection. This process can take 90-120 days.

Estimated Interconnection Study / Deposit Cost: $160,000

5.5 Environmental Impact Assessment

Comprehensive assessment of the potential impacts of the wind energy facility to wildlife habitat, endangered species, cultural resources, water resources, ambient noise, blade flicker and the Appalachian view-shed. Approximately 3-4 months to complete the environment assessment.

Estimated Environmental Assessment Cost: $100,000

5.6 Geo-technical survey

Subsurface investigation (test bores) for proper access roads, crane pads and turbine foundations at the project site. The geo-technical report is required by the engineer to design the roads, crane pads and turbine foundations. Typical geo-tech services take 30 days to complete.

Estimated Geo-technical Cost: $18,000

5.7 Civil Engineering

Surveying, site design and civil engineering of the project site for a wind energy facility. Civil engineering for a project of this scale would take approximately 4 months.

Estimated Civil Engineering Cost: $50,000

5.8 Permitting

Secure all relevant permits to construct and operation the wind energy facility on Little Mountain. This includes but is not limited to: county building permit, county grading permit, WV Public Utility Service Commission operation permit, Utility Interconnection permit, FAA No Hazard Determination, NTIA finding of no interference

Estimated Permitting Cost: $30,000

6.0 Final Design and Construction Estimates

Note: Construction estimates are for planning purposes only. Construction quotes will be based on final design, final equipment selections and final interconnection and electrical construction quotes from the local utility, PJM and Transmission Operators.

6.1 Turbine Foundations

Overview of Scope for Design and Construction Pricing:

1. Review the structural analysis report for one 85m tall tubular tower with 1.6 MW Turbine. The structural calculations shall include local wind conditions which include elevation roughness. Sign as Engineer of Record for the calculations and tower design drawings as provided by the client.

2. Provide to the client the following deliverables:

- Signed and stamped Tower calculation report covering local wind and seismic conditions.

- Signed and stamped Tower drawings provided by the client. The Tower Drawings shall be provided for review and comment and should consist of a design package that satisfies IBC 2009 requirements with a minimum of the following: General Notes, Specifications, Tower x-sections, details, connection details, and foundation connection.

3. Prepare two conceptual/preliminary foundation designs

4. Develop the final engineering foundation plan with details, specifications, and structural calculations in accordance with IBC 2009 provisions. The deliverables to the client are:

- Signed and stamped Foundation calculation report covering local wind and seismic conditions.
- Signed and stamped foundation drawings consisting of a design package that satisfies IBC 2009 requirements with a minimum of the following: General Notes, Specifications, Foundation x-sections, details, connection details, and foundation connection.

Total foundation design costs - $20,000
Preliminary estimated foundation construction cost - $3,000,000

6.2 Electrical Design

Overview of Scope for Design and Construction Pricing:

1. Review electrical capabilities of the GE 1.6 xle.

2. Perform investigation with current electricity supplier to establish requirements for Feasibility Study, Detailed Study and Technical inputs for Interconnect Agreement. This will include developing proposed POI power quality and power control requirements.

3. Prepare Preliminary Interconnecting Electrical Single Line and physical layout. Determine physical interconnect requirements at the POI.

4. With the preliminary single line and physical layout, interconnection requirements, existing studies and other information, develop a turnkey Scope of Work and price quotation and schedule The Scope of Work is to include:
    a. Electrical design and construction costs from the wind turbine switchgear located in the base of the wind turbine to the point of interconnection.

    b. Analysis, pricing and construction costs of any required electrical protection, either at the substation level or locally at the wind turbine point of interconnection.

    c. Analysis, pricing and construction costs of voltage regulation and curtailment as required to ensure proper power quality at the wind turbine point of interconnection in support of the transmission operator specifications for power. The power quality goals have been discussed in concept, but would need to be refined through the electrical study.

    d. Development of a communications design. This plan will include additional hardware and communications provisioning for the following:

        - Real-time power quality
        - Provisioning of T1, or fractional T1, as required by the turbine supplier. This connection would be from the closest commercial telecommunications node to the turbine.
        - Supervisory Control and Data Acquisition (SCADA) server. This connection is essential for Warranty / Operations and Maintenance (O&M) purposes.

- Determination of the method(s) of delivery for real-time turbine data (as provided by the turbine supplier) to the client.
- Any other electrical data as determined by the end user
- Discussions on graphical user interfaces or any other communications requirements that may be required.

Total Electrical design costs - $65,000
Preliminary estimated construction cost - $4,300,000

6.3 Turbine Procurement, Delivery and Commissioning

Alpha Energy has not received a recent indicative quote. On site metrological data is necessary for General Electric to provide a site specific quote. However, the cost range for the 1.6MW turbine we are considering ranges from $2.2M - $2.5M

6.4 Site Construction

Excavation, timbering, construction of roads, crane pads, retaining walls and any state road improvements for turbine delivery. Electrical construction and foundation construction estimates are provided separating from site construction in Sections 6.1 and 6.2 respectively.

Preliminary estimated construction cost - $1,200,000

6.5 Turbine Erection

Alpha Energy has consulted with several experienced turbine erection contractors for pricing this project. The company we have selected brings a wealth of experience in rugged terrain with many installations in the Pennsylvanian Appalachians and a perfect safety record.

Design Costs – N/A
Estimated construction cost - $1,600,000

6.6 Commissioning and Telecommunications

This process includes the certified electrical start-up of the wind energy facility and installation and testing of telecommunication controls and monitoring equipment per manufacturers specifications.

Total Estimated Design and Construction Costs – $25,000 *(General Electric provides turbine commissioning with turbine purchase)*

6.5 Preliminary estimated total cost

Total project cost is estimated to be roughly $33,000,000. This is a preliminary estimate for planning purposes only. A fixed price bid will only be provided after design, engineering and an official quote from the turbine manufacturer.

Industry average “cost per kW installed” or “cost per MW installed” should not be used for comparison. Fixed costs during construction are spread among many turbines at large wind farm projects on flat terrain so, there are significant economies of scale at work (equipment rental / transportation costs, turbine pricing etc.)

Alpha will work with our partners to provide the most competitive price for Angel Winds Renewable Energy, LLC once engineering and design is completed. We will bring integrity, experience and quality along with our exceptional value.

7.0 Angel Winds Renewable Energy Project Milestones

1.) **Site Screening / Preliminary Analysis** - This involves studying published wind data with overlays of power infrastructure, land-use and other geographic features. Preliminary discussions with transmission line operators, the local utility, regulatory agencies, local government and key landowners is also part of this first step. This step determines if the project is worth investment on part of the developer and the community. *Angel Winds Renewable Energy LLC has completed this critical step.*

2.) **Site Security** - This step is necessary for the developer to secure the site or a portion of the site to perform detailed wind studies in addition to interconnection and federal, state and local interference studies. This is usually performed as a temporary land lease or a Memorandum of Understanding with one or more landowners. *Angel Winds Renewable Energy LLC has completed this critical step.*

3.) **Detail Wind Study and Financial Modeling** - At this step the developer would raise a temporary Met-Tower to study the wind for a period of 12-18 months. This data is used to accurately classify the wind resource and forecast revenue for the project. This data is also critical to determine the optimal wind turbine size, number and layout over the geography of the project.

4.) **Formation of limited liability corporation for local project investment** – Establishment of the local LLC is the fundamental step in our process. *Angel Winds LLC has completed this critical step.*

5.) **Power interconnection Study** - Engineers study the connection options from the wind turbines to the transmission lines. This is usually performed by the utility at a cost to the developers.

6.) **Engineering and Environmental Studies** - Study of the substrate and local environment for the proper foundations, access roads and environmental mitigation and/or permits.

7.) **Community Outreach** - This step is actually integrated into virtually every step in our process. Community involvement is key to the success of any wind energy project

8.) **Site Permitting** – Securing all relevant permits for construction and operation.

9.) **Construction and Commissioning** - This step involves the construction of the roads, foundations, electrical interconnections as well as the erection of the towers and installation of the turbine nacelles and rotors.

10.) **Operation and Maintenance** – Final step in the development process but the first step to operating and maintaining a modern wind energy facility.

8.0 The Alpha Energy Team

8.1 Alpha Energy

Alpha Energy is the pioneer of industrial sited and community scale wind energy development in the Mid-Atlantic. Alpha Energy has proven internal resources to properly identify, accurately assess and objectively evaluate the feasibility and profitability of wind energy sites. Alpha also has extensive external resources to engineer, construct and commission wind energy projects. Our value to this project is our objective analysis of Little Mountain's wind energy capacity, our multi-disciplinary project experience, turbine manufacturer relationships and our uniquely qualified construction partnerships. We are a full service American wind energy developer with over a decade of experience in multi-disciplinary projects and over 50MW of wind energy capacity under development. www.alpha-energy.com

8.2 Energy Works

EnergyWorks is an engineering and energy services provider established in 1995. The Principals combine many years of professional experience in the disciplines of development, engineering, construction management, project management, operations, maintenance and asset management. This experience spans industrial and institutional sectors from petroleum and chemicals, manufacturing, electrical utilities to military and governmental agencies.

EnergyWorks has played a key role in the development support and implementation of over 1,500 MW of wind power generation. Implementation and Upgrade/Repair Management workload in 2010 to date includes the following:

- 290 MW wind farm, MHI - Project Management/Site Management – Texas
- 120 MW wind farm, GE - Project Management/Site Management - Texas
- 90MW wind farm, Gamesa -Construction Management – Pennsylvania
- 60MW wind farm, GE- Site Management - Wisconsin
- 100MW wind farm, Nordex / GE - Site Management - multiple New York

The EnergyWorks team is diverse; it has worked with many of the wind turbine suppliers, General Electric, Vestas, Gamesa, Mitsubishi and NEG-Micon. The team has worked in many areas of the world, including North America, Latin America and Europe, and can support any individual stage of a wind project venture or provide support to a project venture from development and implementation to operations and maintenance. www.energyworks.com

8.3 Cianbro Construction

Cianbro is an employee owned company and a leading health and safety innovator providing construction and service solutions to clients throughout North America. With the ability to self-perform all aspects of heavy industrial and civil construction projects, Cianbro also provides steel fabrication, modularized construction and construction management services. With over $450 million in annual sales and over 2,500 team members Cianbro is a national leader of heavy construction services.

Cianbro is an American Society of Civil Engineers award winning construction company with competitive advantages in; Modular Construction, Fabrication & Coating, Hydroelectric & Dam, Power & Energy, Industrial, Marine, Pulp & Paper, Transportation & Infrastructure, Commercial & Institutional and Water & Waste Water.

Wind Turbine Construction

Cianbro mechanically erected a 1.5 MW General Electric Wind Turbine on Jiminy Peak in Massachusetts. This included the transportation of the wind turbine components and construction cranes up a 2.5 mile slope to the mountain summit. Designed and fabricated transportation vehicles, brackets, and rigging for the turbine and affiliated components

Cianbro has also completed constructing three, GE 1.5 MW wind turbines in the town of Vinalhaven, Maine in the Fall of 2009. This project required marine construction support with barges and offshore construction equipment.

Cianbro was also recently awarded the construction contract to erect and install twenty (20) Nordex 2.5MW turbines for the Roth Rock Wind Energy Project in Garrett County MD.

Alpha Energy has signed a teaming agreement with Cianbro to provide engineering and construction support for wind energy projects in the Mid-Atlantic. www.cianbro.com

8.4 Clyde Industrial

Clyde Industrial, LLC is a seasoned utility wind turbine installer and service provider with nearly a decade of experience constructing utility scale wind turbines. Some recent experience includes: construction of 51 Vestas turbines at the Smoky Hills wind project in Kansas, erection and mechanical completion of 23 GE 1.5 turbines at the Casselman wind farm in Pennsylvania, a 14 turbine project in Illinois, and a 12 turbine project in New Hampshire. In early April of 2010, Clyde completed a technical gearbox repair of 2 NEG Micon 900kw wind turbines.

Clyde Industrial has a perfect safety record and manages the turbine erection process with timely precision. Alpha Energy has teamed with Clyde Industrial to ensure quality turbine construction. www.clydeindustrial.com

8.5 Sanderfoot Wind

Sanderfoot Wind & Excavating has installed 955 wind turbine foundations across the USA. They are extremely experienced in harsh terrain and have proven their success in 15 states. Sanderfoot optimizes the construction schedule with local resources and experienced project managers.

Sanderfoot Wind has signed a letter of intent with Alpha Energy to provide the foundation expertise needed on this Community owned project. www.sanderfootwind.com

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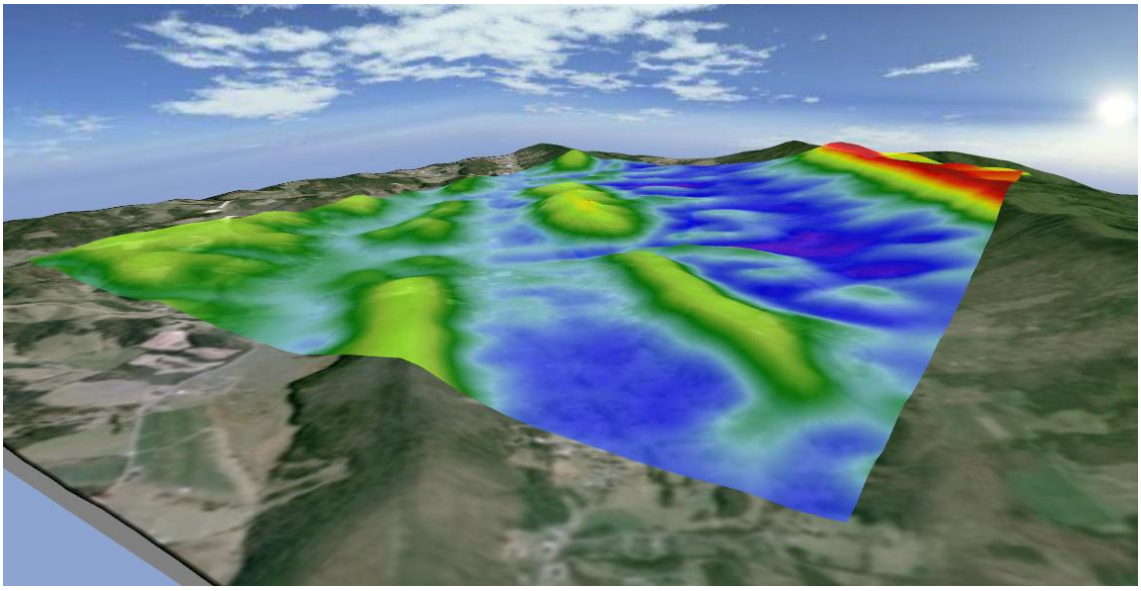
[1] General Electric 1.5MW wind turbine with WINDBOOST - http://www.gepower.com/about/press/en/2009_press/050409d.htm
[2] Average annual US electricity rate s (2010) - http://www.eia.doe.gov/electricity/epm/table5_6_b.html
[3] Jobs figures from "Wind Energy for Rural Economic Development", US Department of Energy, EERE (2003)
[4] Windustry : http://www.windustry.com/wind-basics/learn-about-wind-energy/wind-basics-why-wind-energy/why-wind-energy
[5] US Dept of Energy, National Renewable Energy Laboratory - DOE/GO-102005-2123 • April 2005

Attachment E

R10014_01

WIND MAPPING OF THE LITTLE MOUNTAIN SITE



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CONFIDENTIAL DOCUMENT

WIND MAPPING OF THE LITTLE MOUNTAIN SITE

				Ref.: R10014_01	
Addressees: Earl Long, Eric Mathis PO n: P_100123				Type of document : Report	
Authors: Céline Bezault, Tristan Clarenc				32 pages	
Version No	Date	Summary of the revision	Done by	Checked by	Approved by
01	30/08/2010	Original issue	CB, TC	D. Delaunay	DD

SOMMAIRE

1. INTRODUCTION

Angel Winds Energy Association, referred as Angel Winds in this document, has instructed Meteodyn to carry out a study in order to:

- perform a preliminary wind resource assessment to evaluate the wind energy potential on the site of Little Mountain, West Virginia;
- assess the best location for siting a meteorological tower.

The site, due to its location in the Appalachian Mountains, is considered complex:

- elevation variations can reach up to 3,300 feet at certain areas near the site;
- surrounding land covers include mix of forests and cultivated areas.

Because of an important difference in elevation and a complex roughness on the site, a linear model is not acceptable. Meteodyn, thanks to his knowledge in wind resource assessment, has used its own developed and validated software solution, Meteodyn WT, to solve accurately the flow above the site terrain. Its CFD-based technology, which solves the full Navier-Stokes equations, allows to reduce drastically the errors on the expected wind resources.
The results are reported in this report.

The main steps of the methodology being used for this wind resource assessment are presented in this section.

Directional properties of the wind flows are first evaluated around the site, through CFD calculations. For each calculated direction, the main flow properties include horizontal speed-up factors, changes in direction, vertical flow inclinations, and turbulent intensities. This important step is described in section 4.

No measured reference climatology being available, meso scale wind series are collected at site centre location. The corresponding climatology is described in section 3.

As the reference climatology is derived from a meso scale model (which cannot take into account the micro scale terrain variations and their effects), the extrapolation process will consider that the reference climatology represents the mean climatology above the site. Thus, all the computed directional properties of the flow are averaged above the zone, in order to

assess the directional wind properties of a “virtual reference point”.

Wind extrapolation is then processed, applying the reference climatology on this “virtual reference point”, and considering all the speed-up factors and changes in direction from the “virtual reference point” to all the other result points.

Figure 1 shows the surface used in order to assess the “virtual reference point” averaged directional properties. It covers a 5.0 km diameter circle centered on the site.

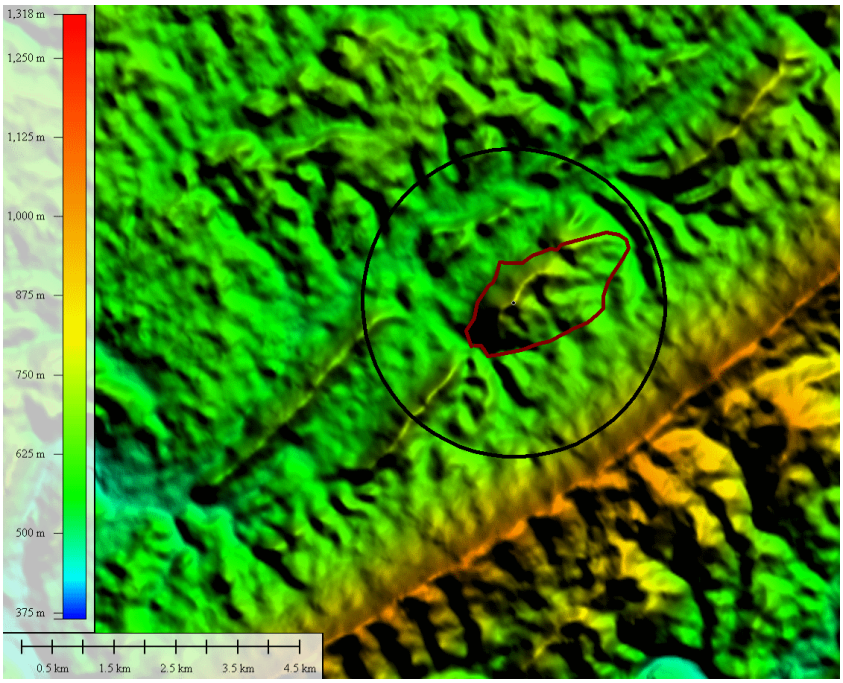


Figure 1: **Averaging surface(black circle) used in order to assess the “virtual reference point” flow properties**

Eventually, results are analyzed and recommendations are made for sitting the met mast on Little Mountain site.

2. SITE DESCRIPTION

This section describes the site characteristics.

2.1 Location

The project is located at Little Mountain, West Virginia, as plotted in Figure 2.

Figure 2: **Angel Wind's project location**

Latitude	Longitude
37°25'0.56''N	80°43'33.81''W

Table 1: **Geographical location of the project (WGS84)**

2.2 Zone of interest

The zone of interest is defined by an area visualized on Figure 3.

The defined perimeter is 7,346 km long. The selection contains area features with a combined enclosed area of 3,137 km^2.

Figure 3: **Zone of interest**

2.3 Orography

The orography description given in this section is based on orographical data used for the numerical model (refer to section 4.1.1).

The zone of interest surrounds a hill. The elevation inside this zone varies from 569 to 784 meters, with a maximal slope equal to 27 deg (the average slope being equal to 13 deg). Moreover, the site is located 3 km far from a rangy mountain. It separates West Virginia and Virginia, and is about 1,000 m high.

The particularly high slopes near the latest (up to 33 degrees) may lead to flow detachments and the model should be large enough to take those ones into account. Moreover, around this area, the mesh should be kept refined in order to catch with accuracy those strong elevation gradients.

Those main elevation variations can be visualized on Figure 4. On this picture, the elevations inside and around the zone of interest are plotted, as well as the elevation profiles along the two crossing lines visualized in yellow.

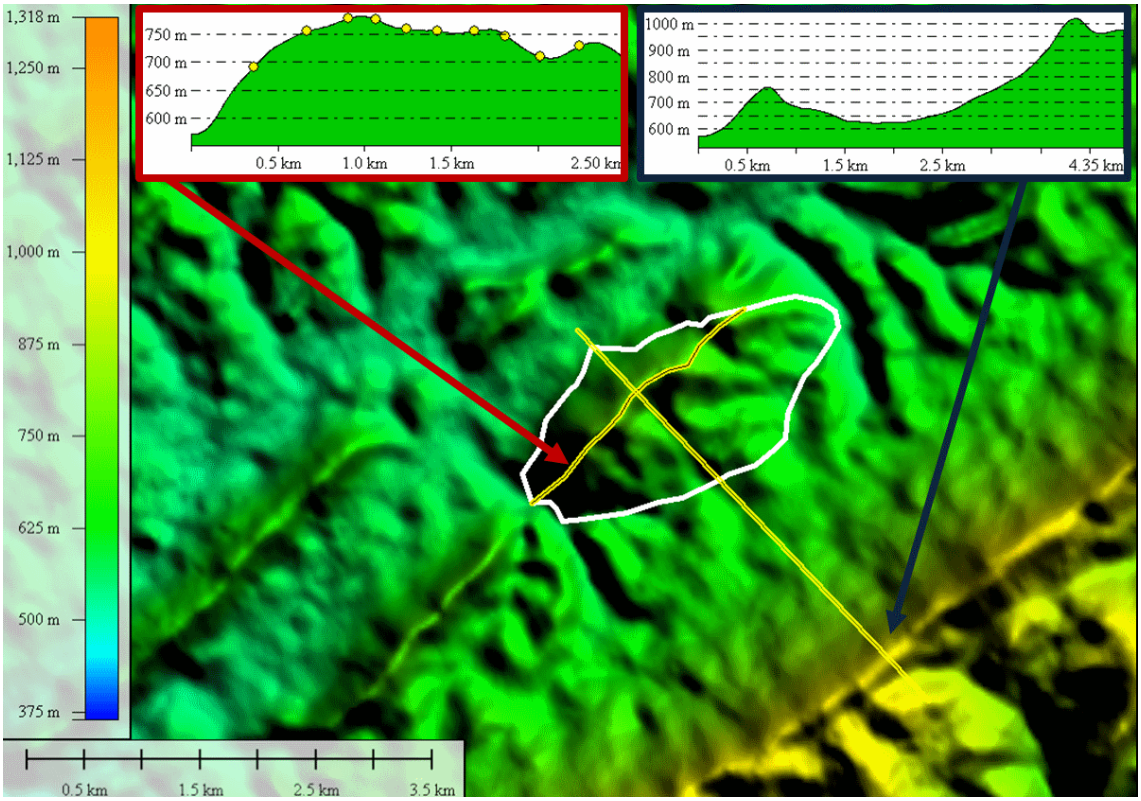


Figure 4: **Highly elevated surroundings**

2.4 Land covers

Land cover for the site is extracted from NLCD 2001 (National Land Cover Database).

Visualization of the extracted data is given in Figure 5. The zone is mainly covered with mix of forests, cultivated areas, and dwellings.

Such data cannot be used directly and should be first converted into roughness data, as described in section 4.1.2.

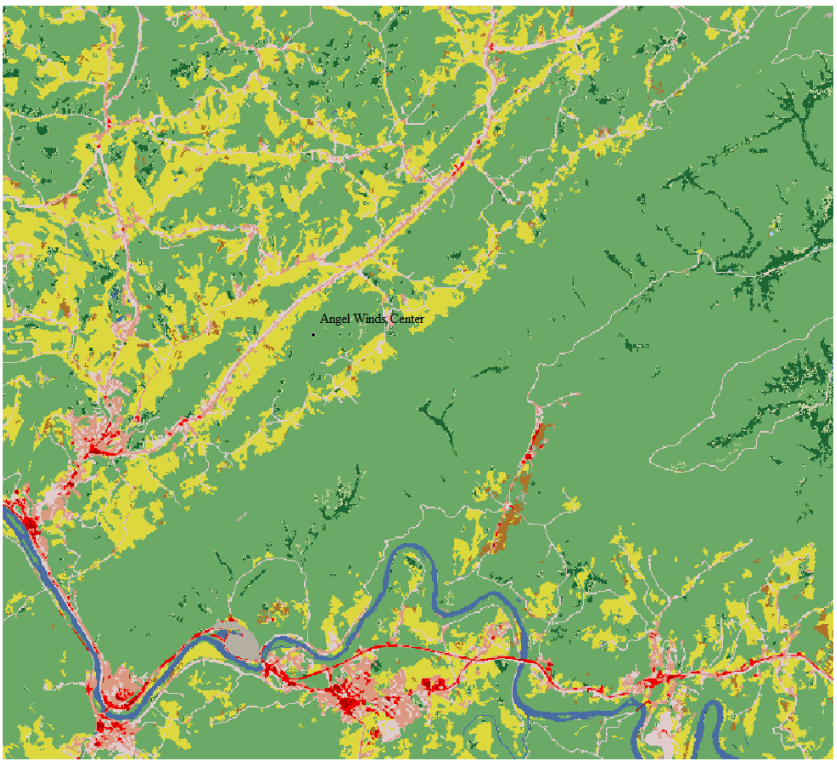


Figure 5: **Roughness map derived from NLCD 2001 database**

3. REFERENCE CLIMATOLOGY

3.1 Source

The meso scale (wind speed and direction) data have been provided by 3Tiers at 100 meters high.

Collected data are hourly data, and are available from 1980-01-01 00:00:00 to 2010-06-30 23:00:00.

3.2 Data analysis

3.2.1 Period of record

In order to remove the annual variations effects, an integer number of years have been extracted from the original set of data.

The final set of records taken into account starts from 1980-07-01 00:00:00 to 2010-06-30 23:00:00 (20 years), including 262 968 records.

3.2.2 Directional analysis

A directional analysis is performed in order to determine the main interesting wind sectors in term of energy density. Sixteen 22.5 degrees sectors are considered.

The wind sector frequency rose (Figure 6 – left part) shows that the west to north-west wind direction is the prevailing one, starting from 270° to 337.5°.

The wind sector 180° (south wind direction) is also quite frequent. Moreover, its corresponding mean wind speed is quite high (Figure 6 – right part).

The wind energy density and the energy distribution roses (Figure 7) particularly highlight the important wind sectors to focus on.

Thus, the four wind sectors 270°, 292.5°, 315°, and 180° are leading to more than 60% of the total energy density.

Table 2 provides those plotted data, including, for each wind sector:

- The amount of valid records ("**Valid Records**");
- The mean wind speed ("**Vmean**");
- The energy density ("**WPD**")
- The ratio to the total energy density ("**WPD distribution**").

It includes as well the maximal wind speed ("**Vmax**") and the two Weibull parameters for each wind distribution (the scale parameter is given by "**Weibull A**", and the shape parameter is given by "**Weibull k**"). It should be mentioned that two distinct wind sector are leading to the strongest wind speeds (sector 315° with a maximal wind speed equal to 22.69 $m.s^{-1}$, and sector 180° with a maximal wind speed equal to 22.62 $m.s^{-1}$).

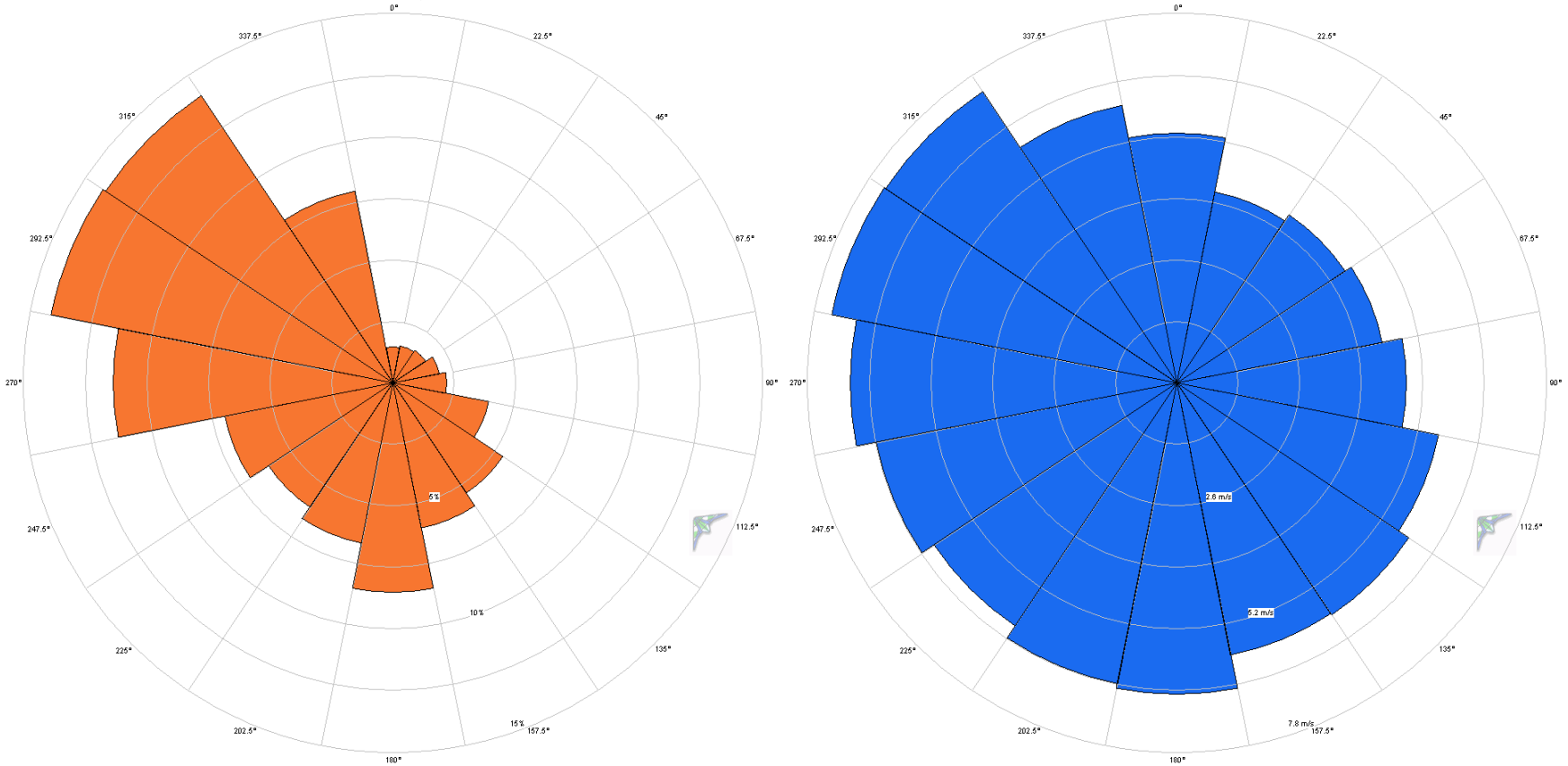


Figure 6: **Frequency rose (left part) – Mean wind speed rose (right part)**

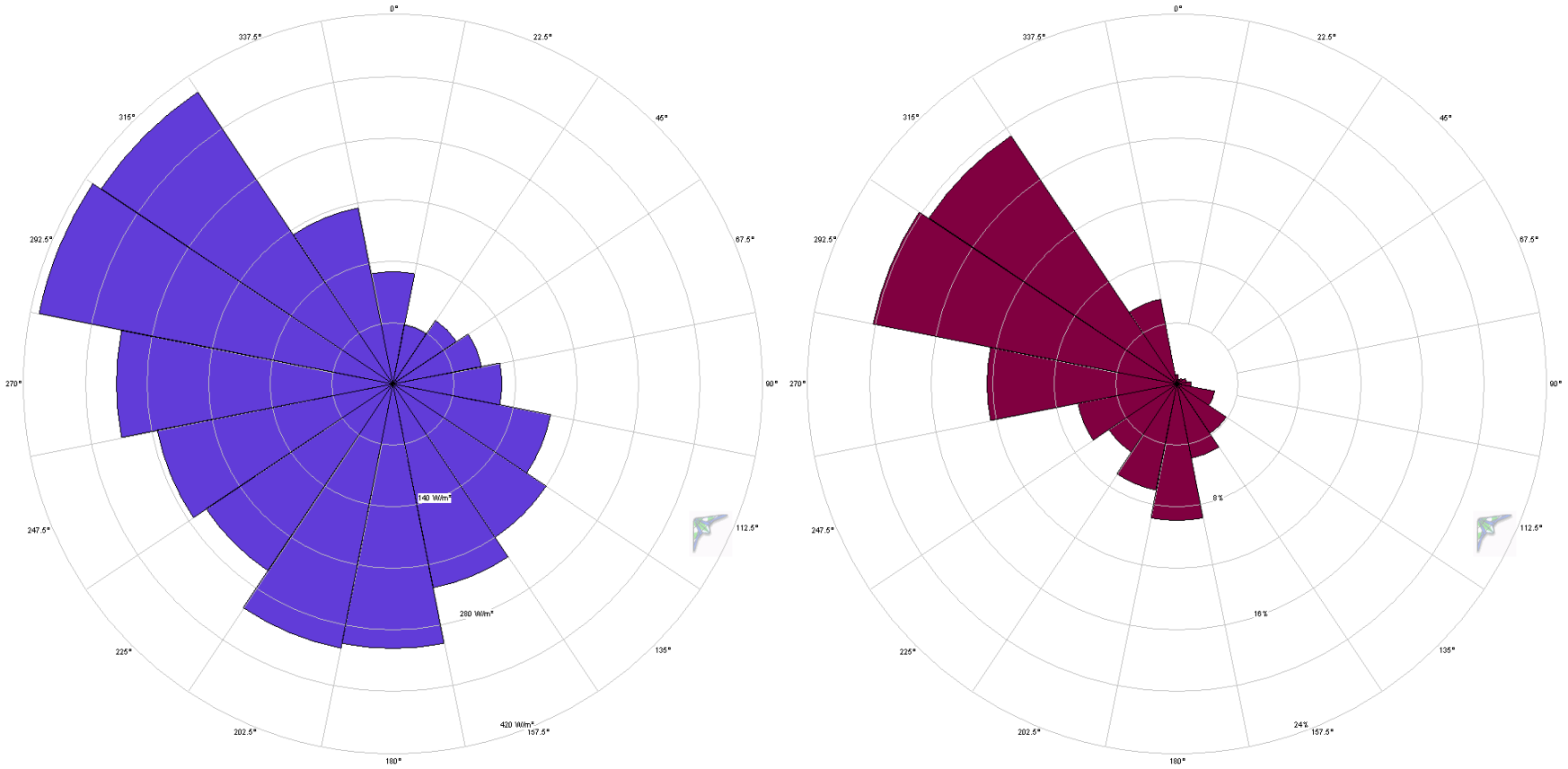


Figure 7: **Energy density rose (left part) – Energy distribution rose (right part) for meso scale data**

Sector	Valid Records (-)	Vmean (m/s)	Vmax (m/s)	Weibull A (m/s)	Weibull k (-)	WPD (W/m²)	WPD distribution (%)
348.75° - 11.25°	3932.00	5.29	14.57	5.92	2.94	128.50	0.67
11.25° - 33.75°	4120.00	4.13	12.15	4.66	2.45	69.45	0.38
33.75° - 56.25°	4274.00	4.28	12.32	4.84	2.12	87.73	0.49
56.25° - 78.75°	5127.00	4.43	14.87	5.01	2.01	103.00	0.70
78.75° - 101.25°	5862.00	4.86	16.47	5.48	2.18	124.49	0.96
101.25° - 123.75°	10450.00	5.65	17.56	6.37	2.33	183.38	2.52
123.75° - 146.25°	14161.00	5.90	19.42	6.65	2.32	210.14	3.92
146.25° - 168.75°	15870.00	5.87	22.62	6.62	2.02	236.38	4.94
168.75° - 191.25°	22427.00	6.58	20.56	7.42	2.21	300.88	8.88
191.25° - 213.75°	17466.00	6.47	19.11	7.29	2.04	306.89	7.06
213.75° - 236.25°	15995.00	6.17	18.55	6.96	2.14	256.17	5.39
236.25° - 258.75°	18339.00	6.47	18.91	7.29	2.32	273.01	6.59
258.75° - 281.25°	29871.00	6.90	19.21	7.77	2.52	314.47	12.36
281.25° - 303.75°	37284.00	7.43	20.66	8.39	2.39	410.12	20.13
303.75° - 326.25°	36870.00	7.40	22.69	8.34	2.43	399.36	19.38
326.25° - 348.75°	20920.00	5.98	17.50	6.74	2.55	204.76	5.64
All data	262968	6.47	22.69	7.31	2.21	288.91	100.00

Table 2: **Directional statistics**

3.2.3 Wind speed distribution

The wind speed distribution is plotted on Figure 8, including the best-fit Weibull distribution. It should be noticed that the Weibull fitted parameter are only indicative, as those are never used during the extrapolation process which is processed through the complete statistical tables.

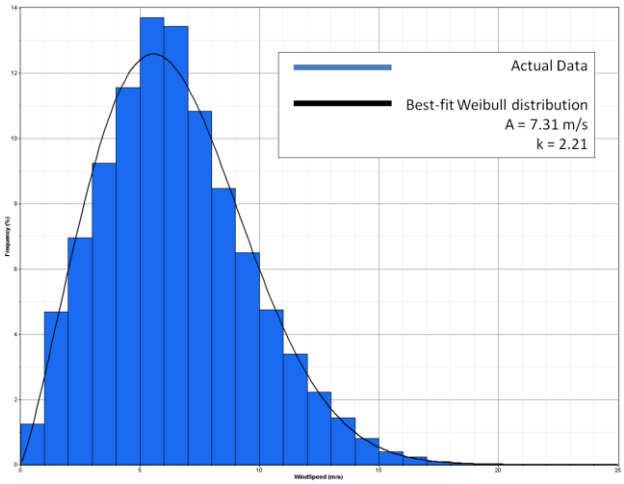


Figure 8: **Wind speed distribution of the meso scale data**

3.2.4 Variations over the period of records

Table 3 shows a huge variation of the wind according to the season of the year. The ratio to the mean energy density varies from 0.2 (in summer, during the day) to 1.7 (in winter).

Considering the year is divided into two 6-month periods, winter from November to April, and summer from May to October, 70.81% of the energy density of the site comes from the winter period. The seasonal pattern is thus particularly strong.

Mean Wind Speed (m/s)

Hour	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
00:00 - 01:00	7.9	7.8	7.7	7.6	6.6	5.8	5.3	5.2	6.0	6.5	7.3	7.5
01:00 - 02:00	8.0	7.8	7.7	7.6	6.7	6.0	5.6	5.4	6.1	6.5	7.3	7.5
02:00 - 03:00	7.9	7.7	7.6	7.5	6.6	6.0	5.6	5.4	6.0	6.4	7.2	7.5
03:00 - 04:00	7.9	7.7	7.5	7.4	6.4	5.9	5.6	5.3	5.9	6.4	7.2	7.5
04:00 - 05:00	7.9	7.7	7.5	7.3	6.3	5.8	5.5	5.2	5.8	6.3	7.2	7.5
05:00 - 06:00	8.0	7.7	7.5	7.3	6.3	5.8	5.5	5.2	5.8	6.3	7.2	7.6
06:00 - 07:00	8.0	7.8	7.6	7.3	6.3	5.9	5.5	5.2	5.8	6.4	7.3	7.6
07:00 - 08:00	8.0	7.7	7.6	7.3	6.2	5.8	5.5	5.1	5.7	6.4	7.3	7.7
08:00 - 09:00	8.0	7.7	7.5	7.2	6.2	5.7	5.4	5.0	5.6	6.3	7.2	7.7
09:00 - 10:00	7.9	7.6	7.4	7.1	6.0	5.6	5.3	4.8	5.4	6.2	7.1	7.6
10:00 - 11:00	7.8	7.5	7.3	6.9	5.9	5.5	5.1	4.7	5.3	6.1	7.0	7.6
11:00 - 12:00	7.7	7.4	7.2	6.8	5.8	5.3	5.0	4.6	5.2	6.0	7.0	7.5
12:00 - 13:00	7.6	7.3	7.2	6.7	5.4	4.7	4.4	4.3	5.0	5.9	6.9	7.5
13:00 - 14:00	7.6	7.2	7.1	6.4	5.2	4.6	4.2	3.7	4.6	5.7	6.8	7.4
14:00 - 15:00	7.4	7.1	7.0	6.7	5.6	5.1	4.6	4.0	4.5	5.3	6.6	7.2
15:00 - 16:00	7.3	7.1	7.2	7.0	6.0	5.3	4.7	4.2	4.7	5.4	6.4	7.1
16:00 - 17:00	7.4	7.3	7.4	7.3	6.1	5.3	4.7	4.2	4.9	5.7	6.5	7.1
17:00 - 18:00	7.6	7.5	7.6	7.5	6.3	5.4	4.8	4.3	4.9	5.8	6.7	7.2
18:00 - 19:00	7.8	7.7	7.7	7.6	6.4	5.5	4.8	4.4	5.0	5.9	6.9	7.4
19:00 - 20:00	7.9	7.9	7.9	7.9	6.6	5.7	5.0	4.5	5.2	6.1	7.0	7.5
20:00 - 21:00	7.9	7.8	7.9	8.0	6.7	5.8	5.1	4.6	5.3	6.1	7.1	7.5
21:00 - 22:00	7.8	7.7	7.9	7.9	6.7	5.8	5.1	4.7	5.4	6.1	7.0	7.4
22:00 - 23:00	7.7	7.6	7.7	7.8	6.7	5.8	5.2	4.8	5.4	6.1	7.0	7.4
23:00 - 24:00	7.8	7.6	7.5	7.5	6.5	5.7	5.1	4.8	5.6	6.2	7.1	7.5
All	7.8	7.6	7.5	7.3	6.2	5.6	5.1	4.7	5.4	6.1	7.0	7.5

Wind Energy Density (W/m²)

Hour	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
00:00 - 01:00	461.3	456.3	417.0	400.7	251.0	165.9	127.5	120.8	183.9	243.9	365.7	404.4
01:00 - 02:00	467.4	455.5	416.8	398.5	253.6	178.4	140.3	129.1	188.0	244.7	363.2	401.2
02:00 - 03:00	463.2	448.0	408.9	385.5	241.8	174.4	140.3	127.0	181.2	239.5	362.1	400.3
03:00 - 04:00	465.2	439.8	405.6	374.8	233.1	168.2	138.0	121.6	174.1	237.4	362.2	401.8
04:00 - 05:00	468.9	434.8	406.1	366.8	226.3	165.1	136.8	118.3	170.9	237.0	364.8	407.1
05:00 - 06:00	474.8	435.9	412.8	364.4	225.7	168.2	139.1	118.2	171.7	240.7	371.2	417.7
06:00 - 07:00	487.2	443.3	422.2	365.9	230.8	174.7	145.0	120.7	176.0	249.2	380.9	435.2
07:00 - 08:00	490.6	442.8	427.0	364.7	229.6	174.4	145.8	119.7	174.8	250.2	383.3	439.5
08:00 - 09:00	485.5	432.2	419.5	354.7	222.0	168.8	139.6	114.0	166.2	243.1	375.3	437.0
09:00 - 10:00	473.5	419.8	405.6	341.7	210.8	158.7	130.8	105.8	157.3	233.7	365.2	429.8
10:00 - 11:00	459.5	407.5	394.6	330.4	200.7	150.0	121.9	98.5	148.6	226.2	355.2	421.6
11:00 - 12:00	445.0	395.9	383.5	319.4	190.6	137.7	111.5	92.6	141.2	216.9	346.9	414.8
12:00 - 13:00	441.6	393.3	381.2	304.1	167.7	107.1	82.7	78.8	133.6	210.2	341.2	410.0
13:00 - 14:00	432.9	385.7	377.1	298.1	169.0	112.0	79.7	60.2	110.2	196.9	329.2	400.5
14:00 - 15:00	423.2	387.4	381.1	330.0	201.6	142.6	102.3	72.9	113.1	183.6	312.5	387.9
15:00 - 16:00	430.8	399.6	395.5	366.0	232.4	159.1	112.1	85.8	127.8	194.5	311.3	391.9
16:00 - 17:00	443.5	422.5	418.5	397.2	253.3	166.1	113.8	90.3	138.7	213.1	320.5	397.8
17:00 - 18:00	459.1	442.4	440.3	426.3	269.6	173.0	117.7	94.0	146.2	225.2	333.7	410.4
18:00 - 19:00	478.5	468.2	463.6	452.9	282.9	179.1	121.9	98.1	153.8	235.0	349.7	427.6
19:00 - 20:00	488.5	479.6	477.8	486.6	303.2	190.7	133.4	107.8	166.5	246.5	361.8	433.0
20:00 - 21:00	480.7	472.2	474.9	494.4	309.1	197.5	139.0	112.1	171.0	249.3	361.7	422.8
21:00 - 22:00	456.0	452.1	455.9	475.6	304.7	196.5	138.2	112.2	171.0	241.2	345.7	400.3
22:00 - 23:00	431.7	423.5	418.5	436.5	286.3	190.2	134.8	109.6	161.5	221.0	331.4	385.1
23:00 - 24:00	438.4	417.0	393.9	382.2	244.5	163.9	116.4	101.3	160.9	227.0	340.6	390.2
All	460.3	431.5	416.6	384.1	239.2	165.1	125.4	104.6	157.8	229.4	351.5	411.2

Ratio to mean Wind Energy Density (W/m²)												
Hour	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
00:00 - 01:00	1.6	1.6	1.4	1.4	0.9	0.6	0.4	0.4	0.6	0.8	1.3	1.4
01:00 - 02:00	1.6	1.6	1.4	1.4	0.9	0.6	0.5	0.4	0.7	0.8	1.3	1.4
02:00 - 03:00	1.6	1.6	1.4	1.3	0.8	0.6	0.5	0.4	0.6	0.8	1.3	1.4
03:00 - 04:00	1.6	1.5	1.4	1.3	0.8	0.6	0.5	0.4	0.6	0.8	1.3	1.4
04:00 - 05:00	1.6	1.5	1.4	1.3	0.8	0.6	0.5	0.4	0.6	0.8	1.3	1.4
05:00 - 06:00	1.6	1.5	1.4	1.3	0.8	0.6	0.5	0.4	0.6	0.8	1.3	1.4
06:00 - 07:00	1.7	1.5	1.5	1.3	0.8	0.6	0.5	0.4	0.6	0.9	1.3	1.5
07:00 - 08:00	1.7	1.5	1.5	1.3	0.8	0.6	0.5	0.4	0.6	0.9	1.3	1.5
08:00 - 09:00	1.7	1.5	1.5	1.2	0.8	0.6	0.5	0.4	0.6	0.8	1.3	1.5
09:00 - 10:00	1.6	1.5	1.4	1.2	0.7	0.5	0.5	0.4	0.5	0.8	1.3	1.5
10:00 - 11:00	1.6	1.4	1.4	1.1	0.7	0.5	0.4	0.3	0.5	0.8	1.2	1.5
11:00 - 12:00	1.5	1.4	1.3	1.1	0.7	0.5	0.4	0.3	0.5	0.8	1.2	1.4
12:00 - 13:00	1.5	1.4	1.3	1.1	0.6	0.4	0.3	0.3	0.5	0.7	1.2	1.4
13:00 - 14:00	1.5	1.3	1.3	1.0	0.6	0.4	0.3	0.2	0.4	0.7	1.1	1.4
14:00 - 15:00	1.5	1.3	1.3	1.1	0.7	0.5	0.4	0.3	0.4	0.6	1.1	1.3
15:00 - 16:00	1.5	1.4	1.4	1.3	0.8	0.6	0.4	0.3	0.4	0.7	1.1	1.4
16:00 - 17:00	1.5	1.5	1.4	1.4	0.9	0.6	0.4	0.3	0.5	0.7	1.1	1.4
17:00 - 18:00	1.6	1.5	1.5	1.5	0.9	0.6	0.4	0.3	0.5	0.8	1.2	1.4
18:00 - 19:00	1.7	1.6	1.6	1.6	1.0	0.6	0.4	0.3	0.5	0.8	1.2	1.5
19:00 - 20:00	1.7	1.7	1.7	1.7	1.0	0.7	0.5	0.4	0.6	0.9	1.3	1.5
20:00 - 21:00	1.7	1.6	1.6	1.7	1.1	0.7	0.5	0.4	0.6	0.9	1.3	1.5
21:00 - 22:00	1.6	1.6	1.6	1.6	1.1	0.7	0.5	0.4	0.6	0.8	1.2	1.4
22:00 - 23:00	1.5	1.5	1.4	1.5	1.0	0.7	0.5	0.4	0.6	0.8	1.1	1.3
23:00 - 24:00	1.5	1.4	1.4	1.3	0.8	0.6	0.4	0.4	0.6	0.8	1.2	1.4
All	1.6	1.5	1.4	1.3	0.8	0.6	0.4	0.4	0.5	0.8	1.2	1.4

Table 3: **Daily and seasonal variations: mean wind speed (m/s) – energy density (W/m2) – ratio to mean energy density (-)**

4. NUMERICAL MODEL

In this section, a description of the CFD numerical models used in order to evaluate the directional properties of the wind flows.

4.1 Topographical data

4.1.1 Orographical data

Orographical data were got from the NASA database. The ASTER database provides elevation information with a resolution of 30 meters.

The corresponding orography is plotted in Figure 9.

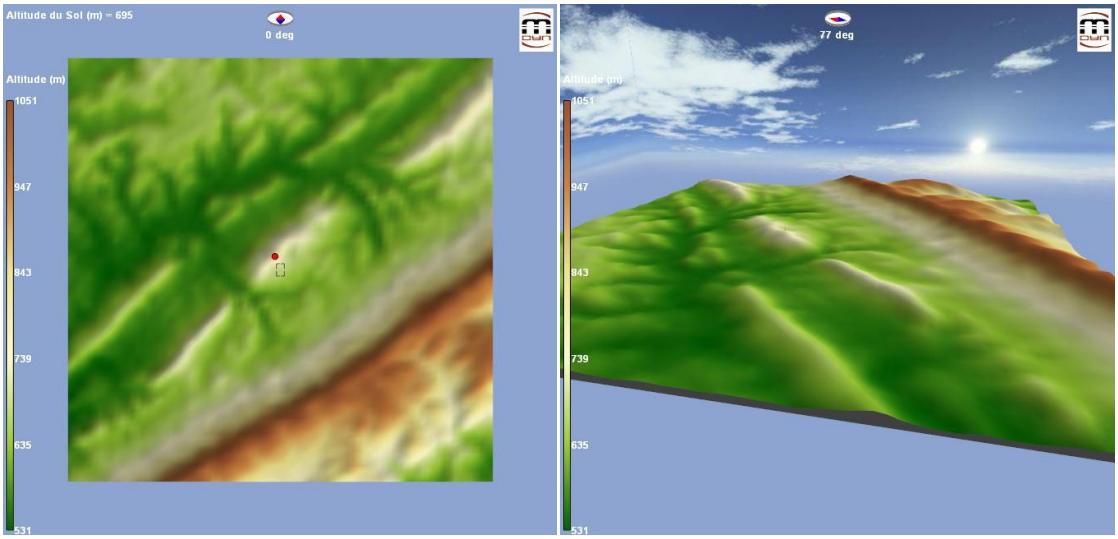


Figure 9: **Wind speed distribution**

4.1.2 Roughness data

According to the type of land cover (extracted from National Land Cover Database, refer to 2.4), a roughness length is deduced.

Roughness model is plotted in Figure 10. A satellite picture is mapped in order to check the roughness variations over the site.

It should be highlighted that this wind resource assessment considers the forested areas near the site (a part of those should be cleared around masts and wind turbines in the case the project is developed).

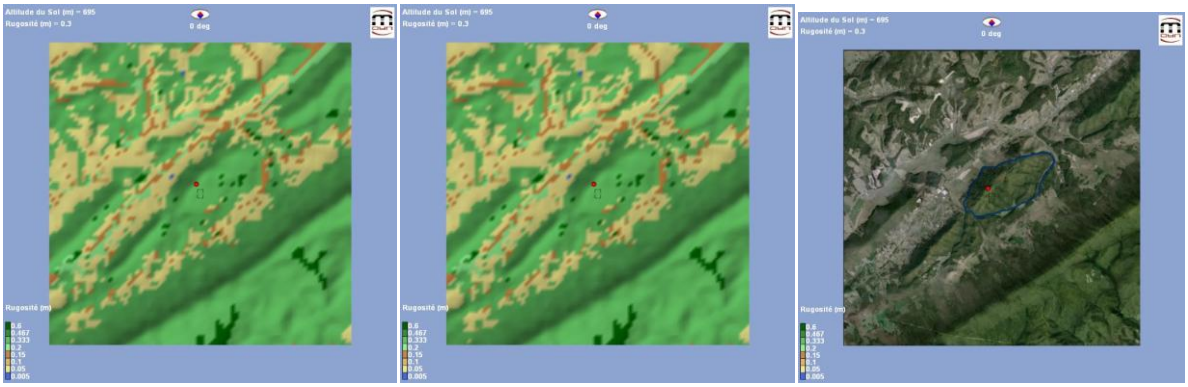


Figure 10: **Roughness model and satellite photography**

4.2 Result points

Some result points are defined.

A virtual met mast is modeled. It is located as given in Table 4. Six virtual sensors are defined from 20 to 80 meters.

Geographical localization (WGS84)	X(m) – Y(m) UTM(NAD83)	Height (m)
37°25'0.56''N - 80°43'33.81''W	1 588 252 – 4 212 561	20
		30
		40
		50
		60
		80

Table 4: **Virtual sensors defined for the model**

4.3 Meshing parameters

Fifteen calculations have been run. The directions to be computed were chosen based on the wind data directional analysis. The gap between two consecutive directions varies from 30° to 10° for prevailing wind directions.

In order to get a better accuracy, the mesh is kept refined all over the zone defined by the black rectangle drawn on Figure 11.

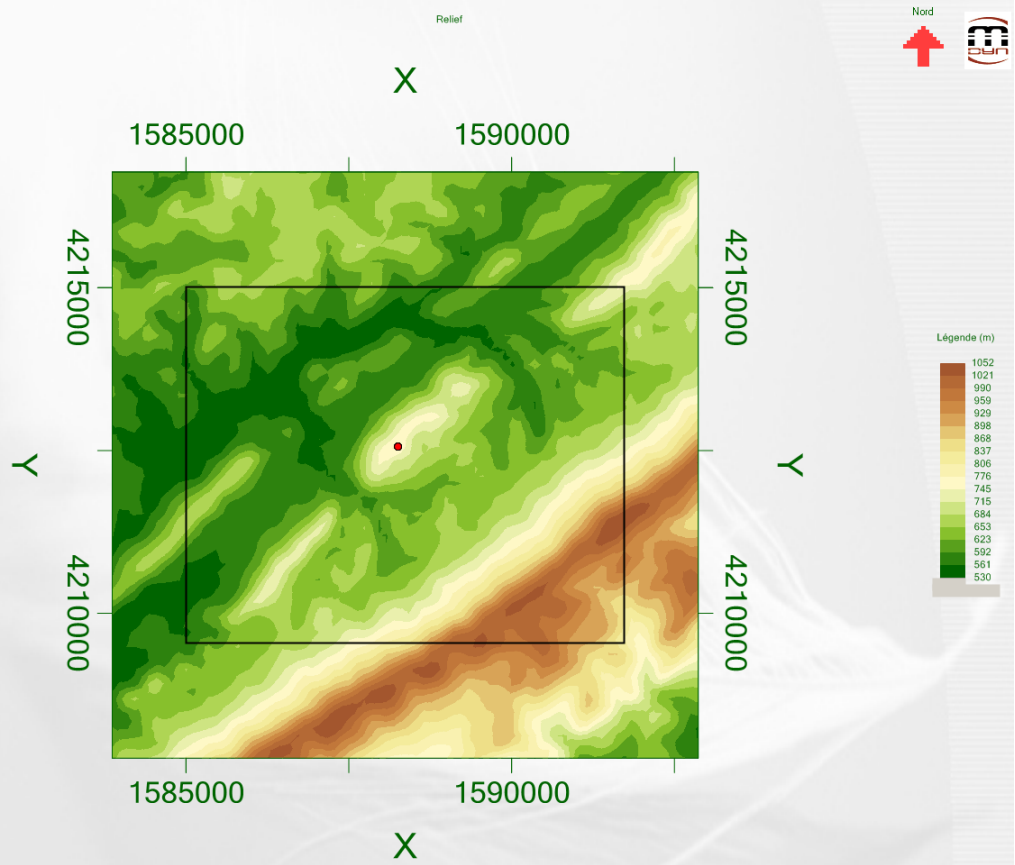


Figure 11: **Refinement zone**

The mesh around this area is then coarsened up to the boundaries of the domain.

The radius defined for the site is equal to 4,500 meters. It leads to a calculation zone which covers a 10,800×10,800 m^2 area. Moreover, the altitude for the upper boundary of the domain is around ,3000 m.

The horizontal resolution (applied over the refined area) is set equal to 25 meters. The vertical resolution (applied near the ground) is set equal to 4 meters.

It should be noticed that for a few directions, horizontal resolution has been decreased (up to 11 meters) in order to improve the convergence process. Thus, the number of cells for the calculations is varying from 2.9 to 24.2 million of cells. For each direction, the corresponding

number of cells is given in Table 5.

Synoptic direction (deg)	Number of cells (-)
30	12 997 152
60	4 802 490
320	2 987 775
120	12 997 152
150	12 636 120
180	7 564 900
210	12 997 152
240	4 802 490
270	2 987 775
280	3 850 200
290	4 467 600
310	13 726 296
320	5170752
320	24 226 580
340	20 528 550
360	2 987 775

Table 5: **Number of cells and calculated directions**

The calculation mesh generated for the 290 degree direction is visualized in Figure 12.

4.4 Model parameters

The atmospheric stability is considered, for each calculation, as neutral.

Default forest density is used for modeling the high roughness zones.

It should be noticed that those default parameters should be considered as a first correct approximation. Thanks to onsite measurements (as soon as the wind is measured at many heights), it is possible to assess the site-specific parameters by calibrating the numerical results thanks to the wind profile measurements.

4.5 Convergence

The terrain being particularly complex, including some high elevation variations which are leading to flow detachments, the convergence process and the result variations at the result point locations have been checked.

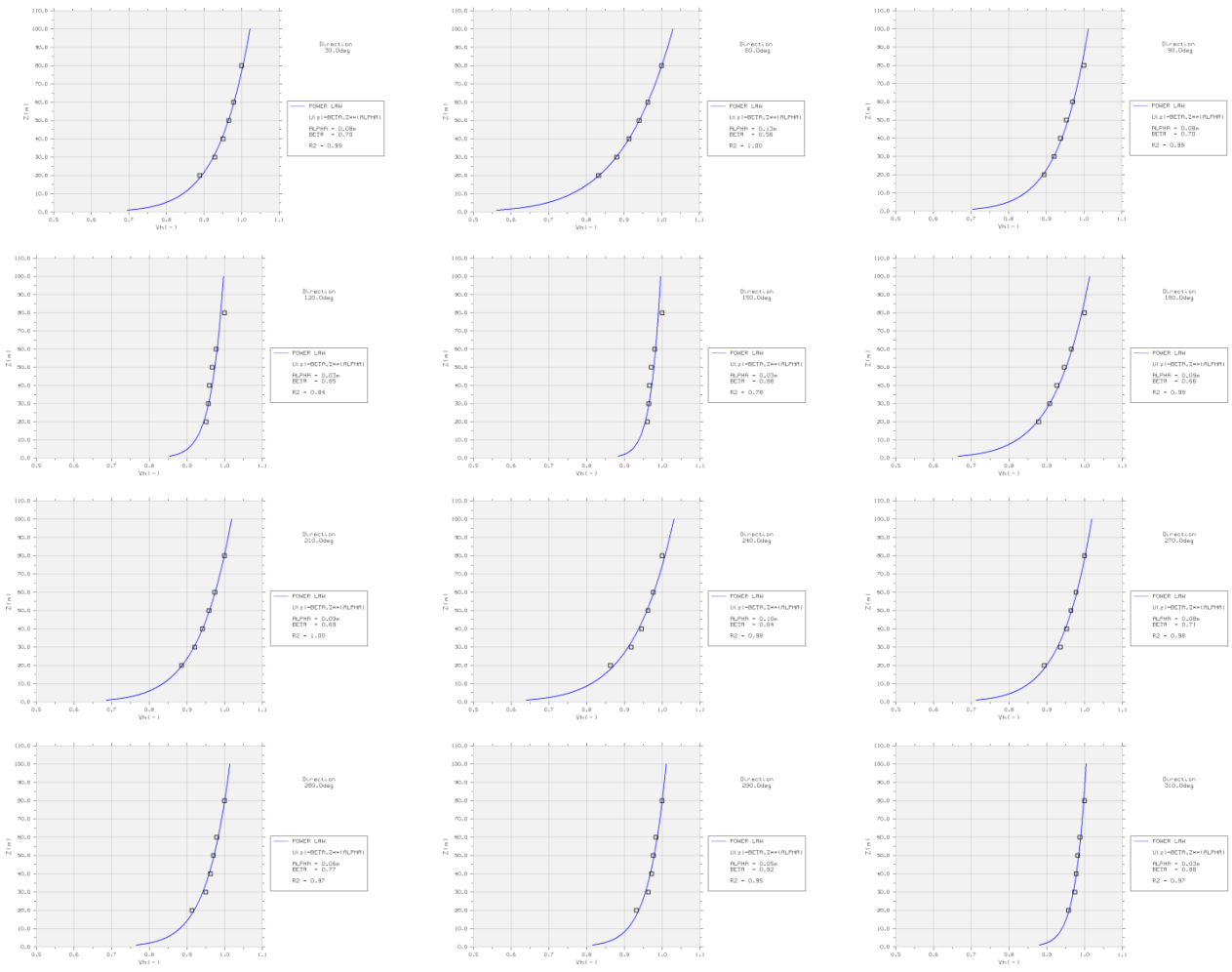
Each time the convergence process was not well behaving, the horizontal resolution has been decreased in order to improve it.

5. RESULTS

5.1 Directional results

A particular attention is paid on the resulting directional wind profiles at virtual met mast location.

For each calculation, the modeled wind profiles are plotted on Figure 12. The horizontal speed-up factors are normalized with the 80 meters high horizontal wind speed. For each wind profile, a regression is processed from the virtual sensors results in order to assess the shear exponent characterizing the wind profiles.



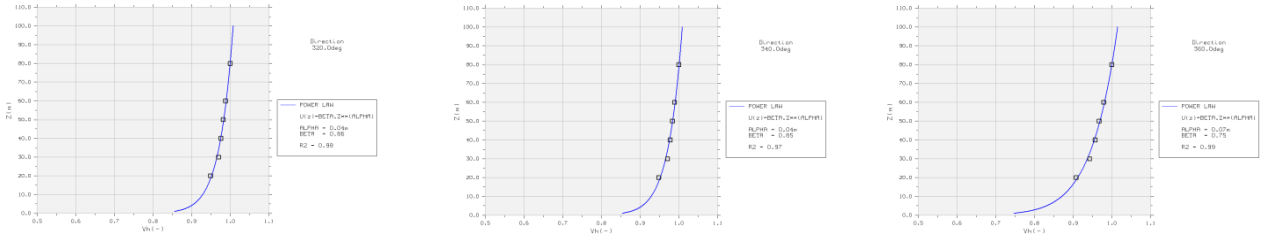


Figure 12: **Calculated wind speed-up profiles**

The resulting shear exponent rose is plotted in blue on Figure 14. It varies from 0.03 to 0.13. On this figure, the prevailing wind direction is highlighted in red color. It should be noticed that for this main wind sector, the flow is particularly accelerated, due to the slope, resulting in a decrease in the wind shear exponent. However, for this localization, it keeps positive.

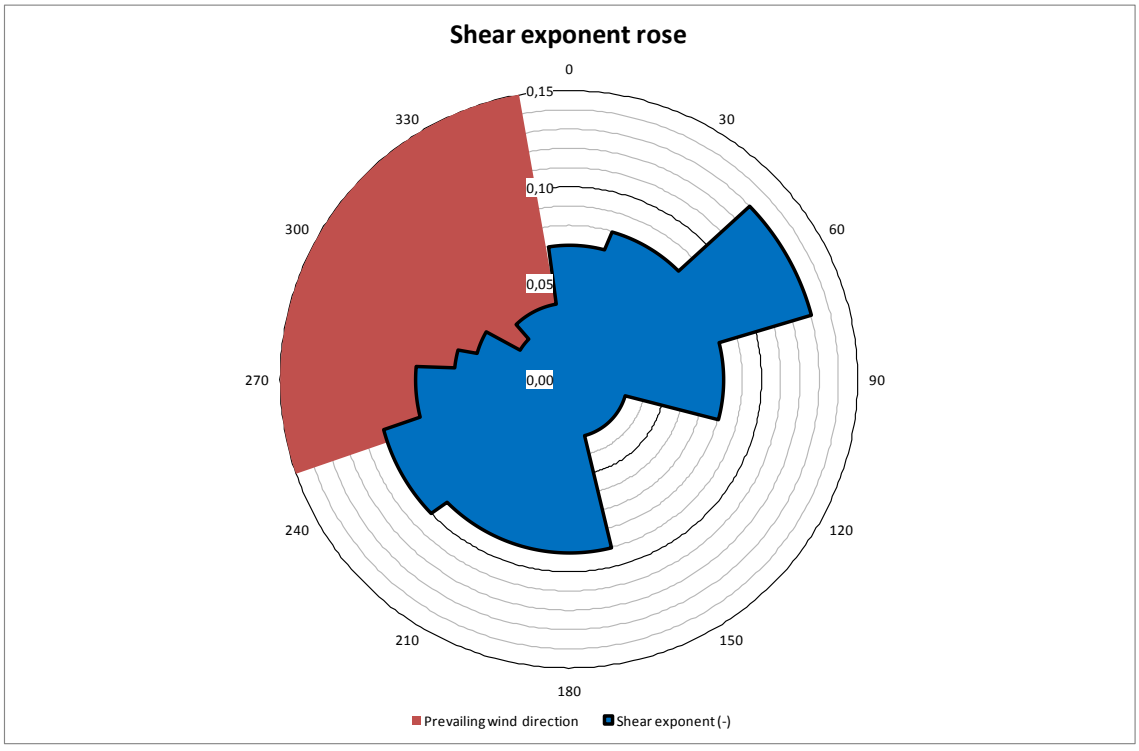


Figure 13: **Shear exponent rose**

The directional vertical inflow angles on the sensors are checked. At 40 meters, the maximal absolute value is less than 2 deg. Next picture presents the inflow angle calculated over the area, at 80 meters, for wind direction 290 deg.

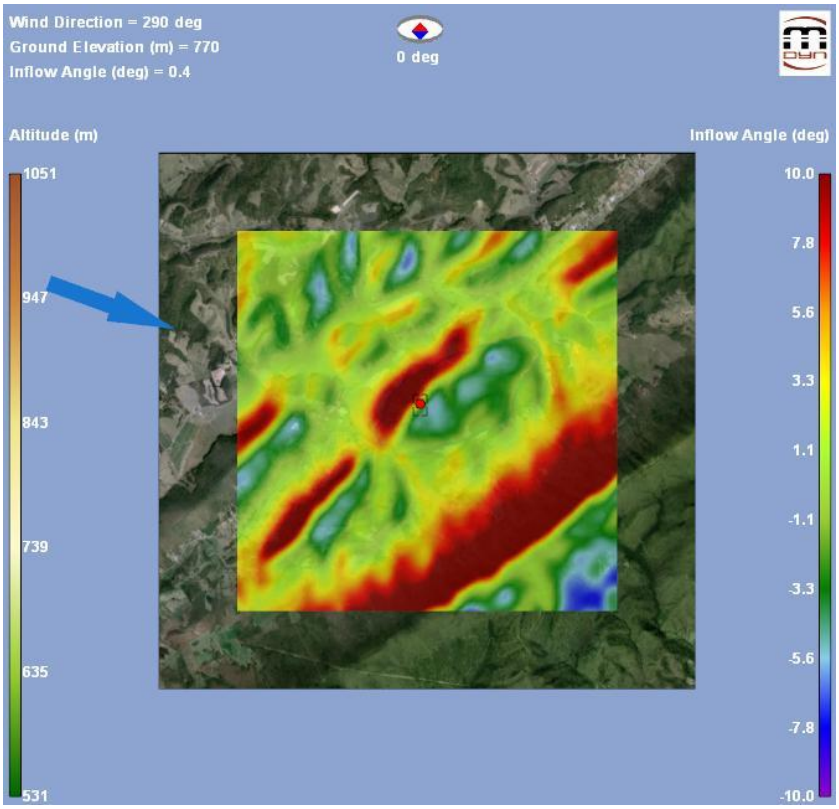


Figure 14: **Inflow vertical angle for wind direction 290 deg at 80 meters high**

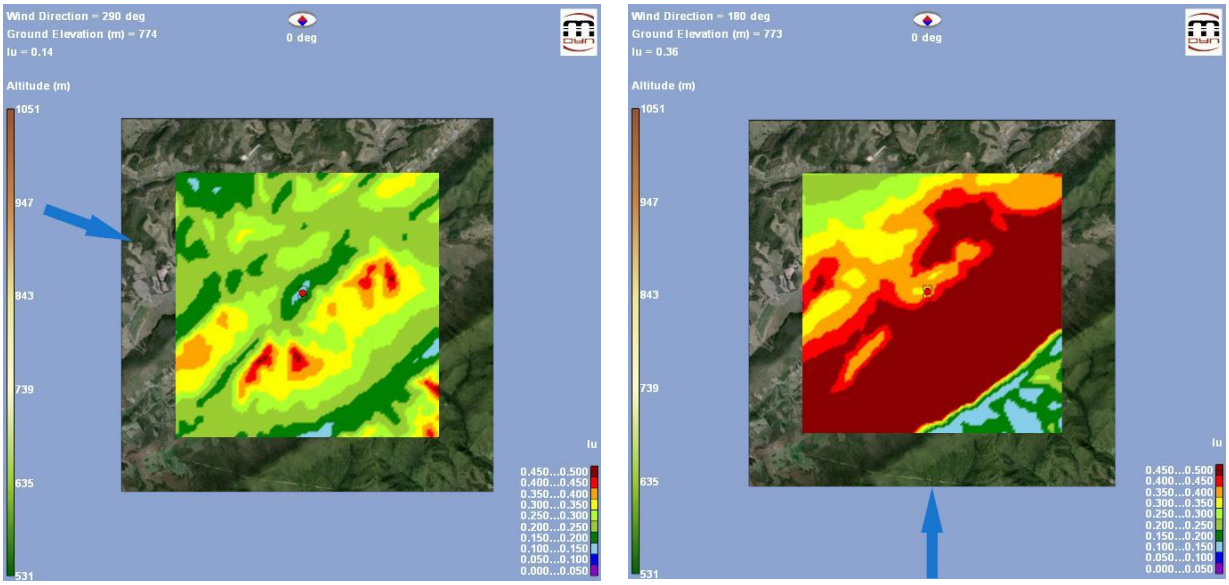


Figure 15: **Turbulent intensity wind for directions 290 and 180 deg**

Turbulent intensity results are eventually analyzed. The mast is located in a low turbulence area, due to the high acceleration of the flow over the hill. This is highlighted on Figure 15 for the prevailing direction.

Nevertheless, it should be pointed out that for the south wind directions, some important flow detachments are foreseen upwind the hill, which leads to high turbulent intensity values over the zone of interest. Thus, calculated turbulent intensity at 80 meters for the mast location is about 36% for direction 180 deg. Those important turbulent intensity directional variations are plotted on Figure 16.

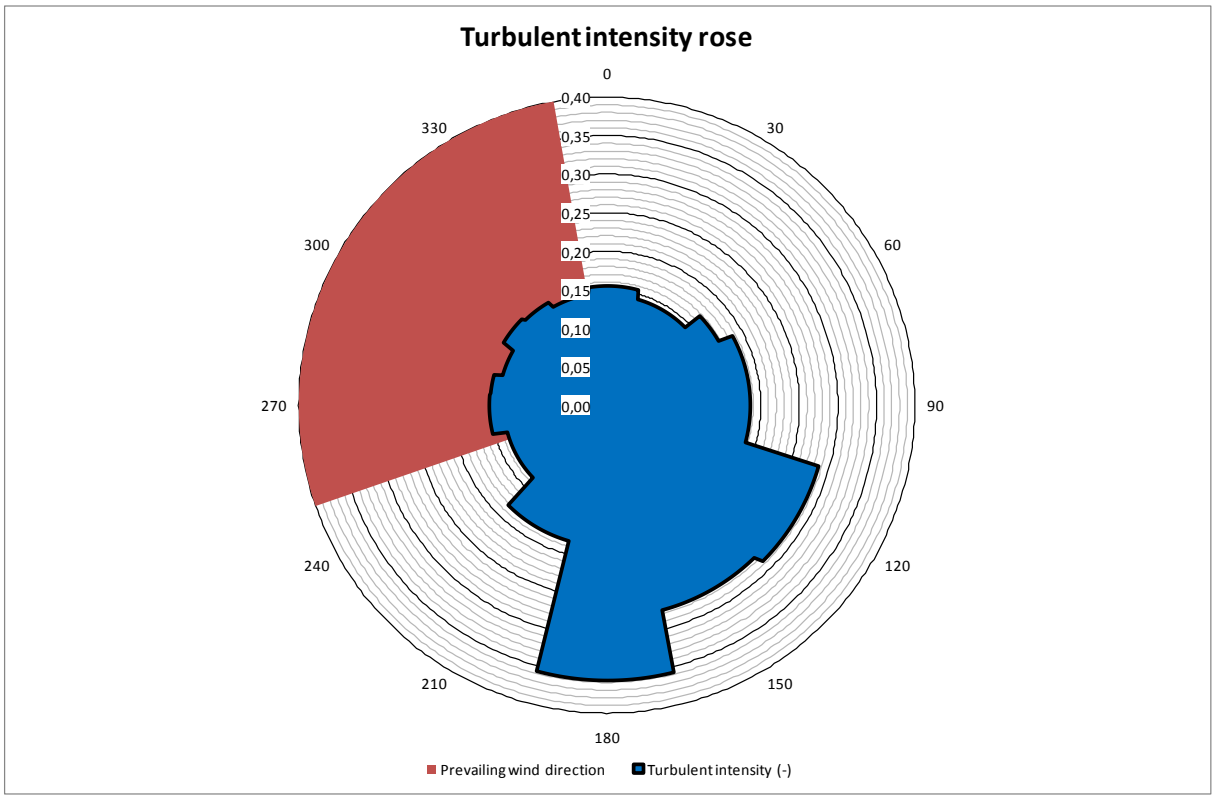


Figure 16: **Turbulent intensity rose**

5.2 Averaged results

Once the extrapolation of the reference climatology is processed, it is possible to plot the averaged results over the site. This includes the mean wind speed (Figure 17), the mean turbulent intensity (Figure 18), the mean absolute inflow angle (Figure 19), and the energy density (Figure 20). The averaged results are given at 40, 60, 80, and 100 meters.

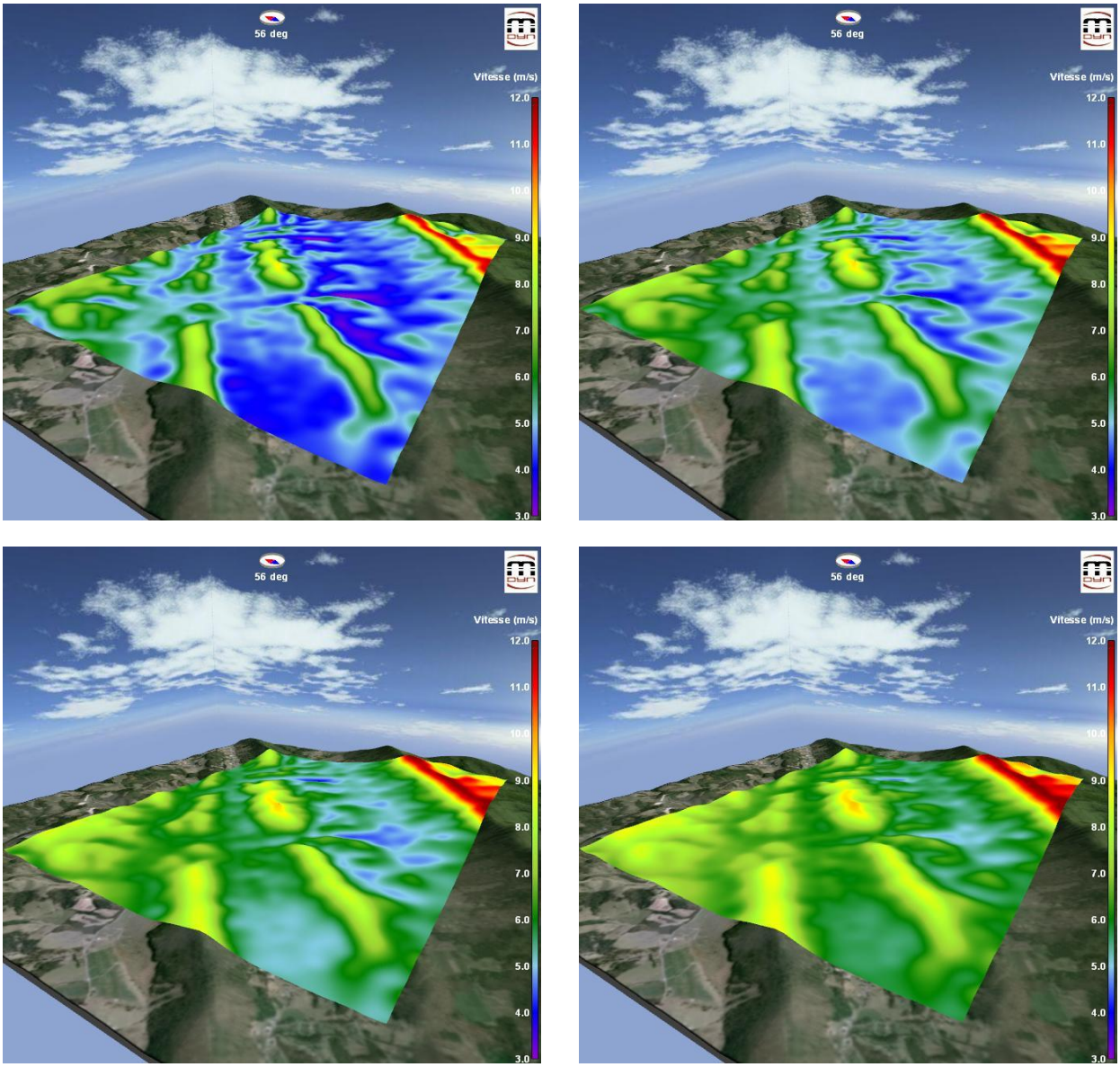


Figure 17: **Mean wind speed (m/s) over the refined area at 40 (top left), 60 (top right), 80 (bottom left) and 100 (bottom right) meters**

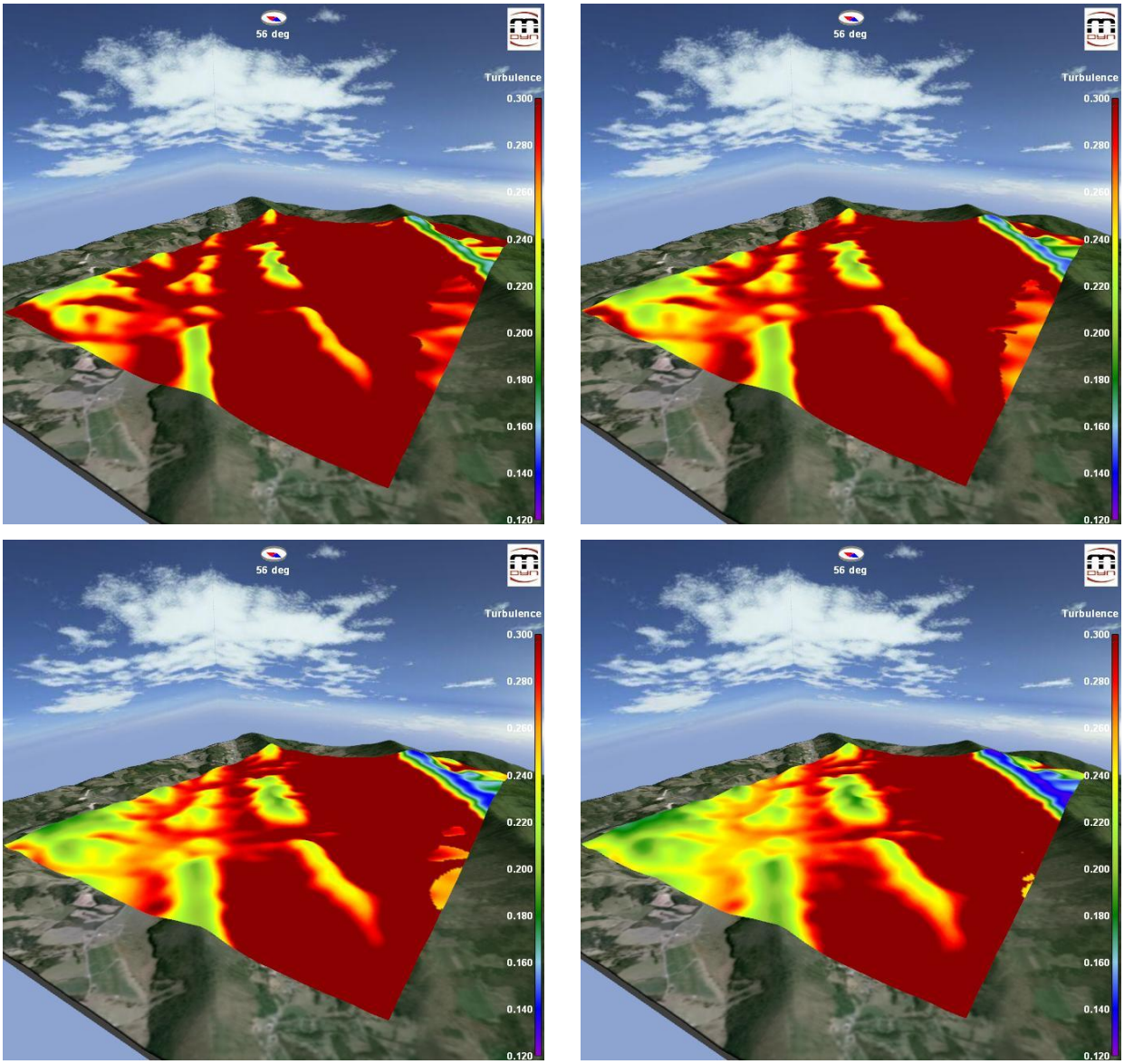


Figure 18: **Mean turbulent intensity (-) over the refined area at 40 (top left), 60 (top right), 80 (bottom left) and 100 (bottom right) meters**

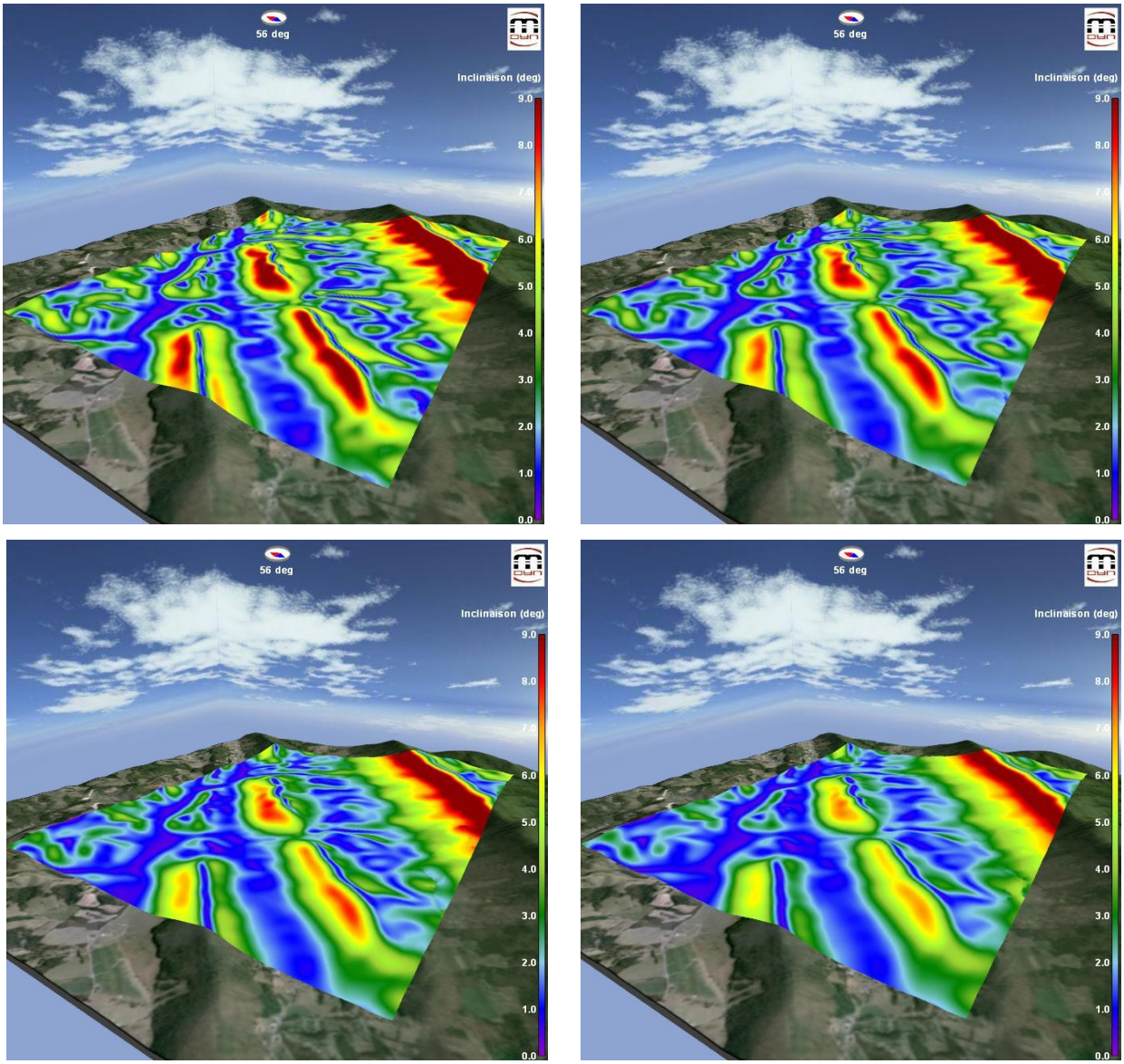


Figure 19: **Mean absolute vertical inflow angle (deg) over the refined area at 40 (top left), 60 (top right), 80 (bottom left) and 100 (bottom right) meters**

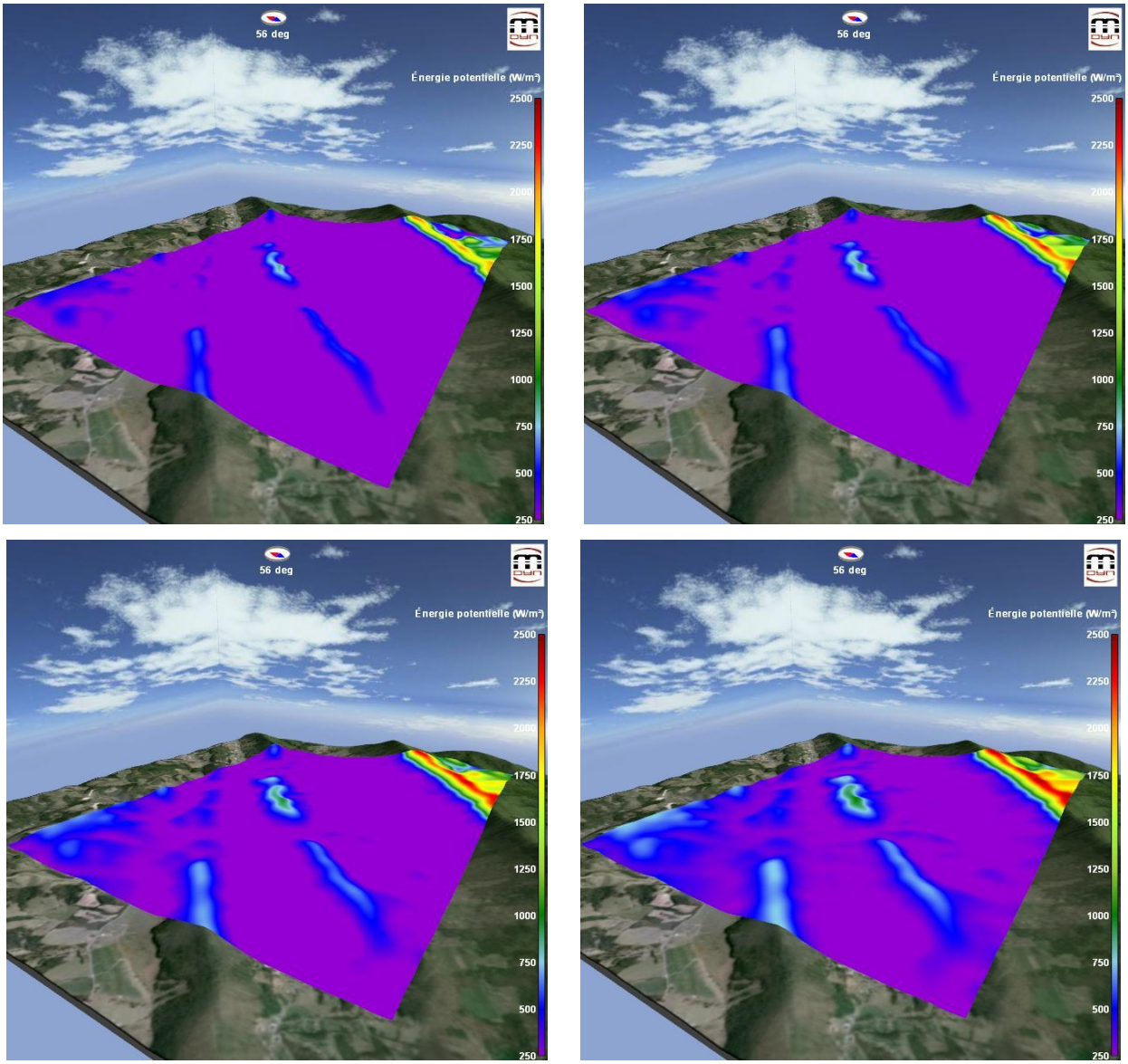


Figure 20: **Energy density (W/m²) over the refined area at 40 (top left), 60 (top right), 80 (bottom left) and 100 (bottom right) meters**

In order to focus on the zone of interest, new zoomed plots of those results are given, from Figure 21 to Figure 24. On Figure 21, a first plot of the zone of interest is given, in order to get the localization correspondence with the following plots.

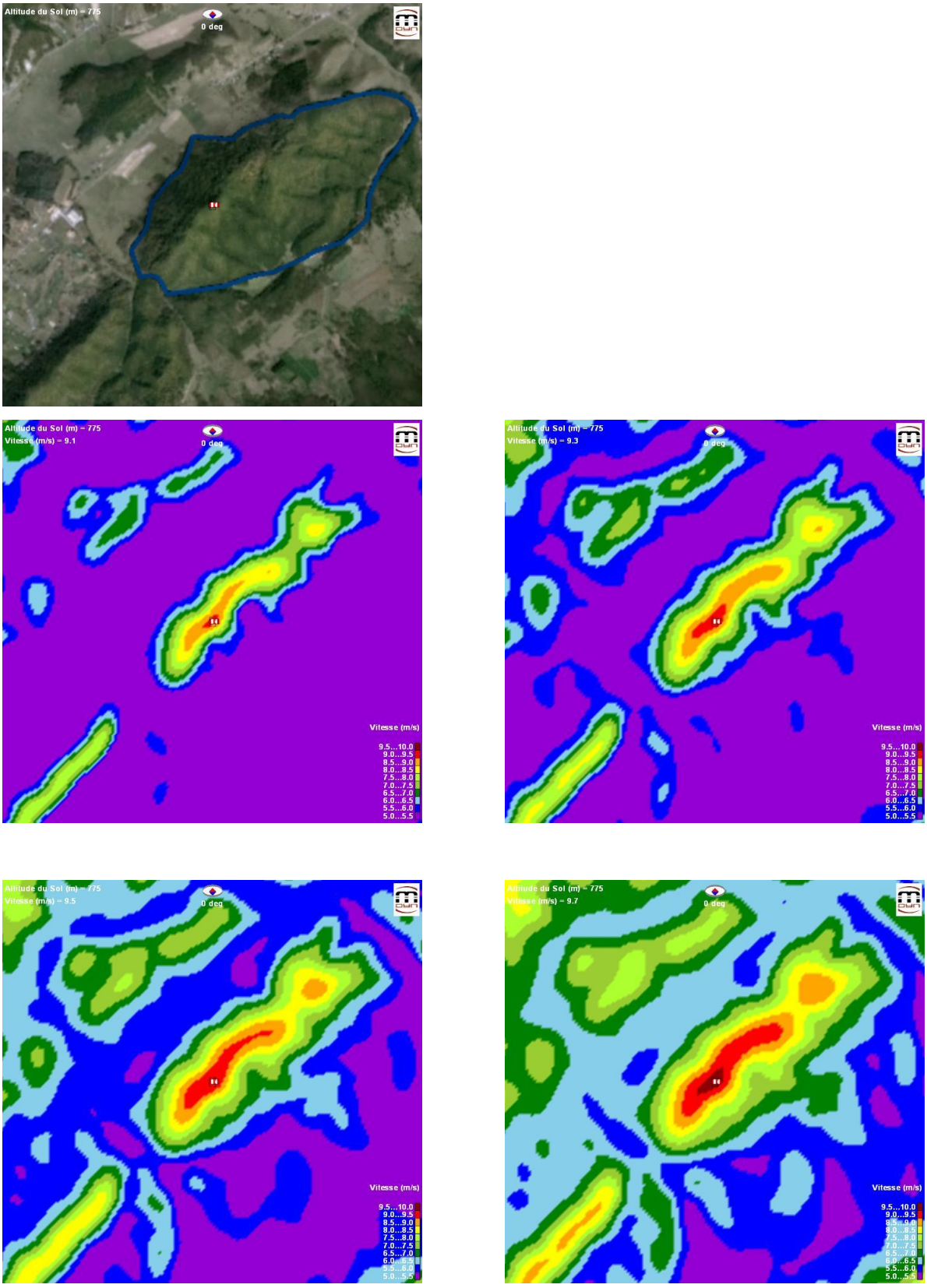


Figure 21: **Mean wind speed (m/s) over the refined area at 40 (top left), 60 (top right), 80 (bottom left) and 100 (bottom right) meters**

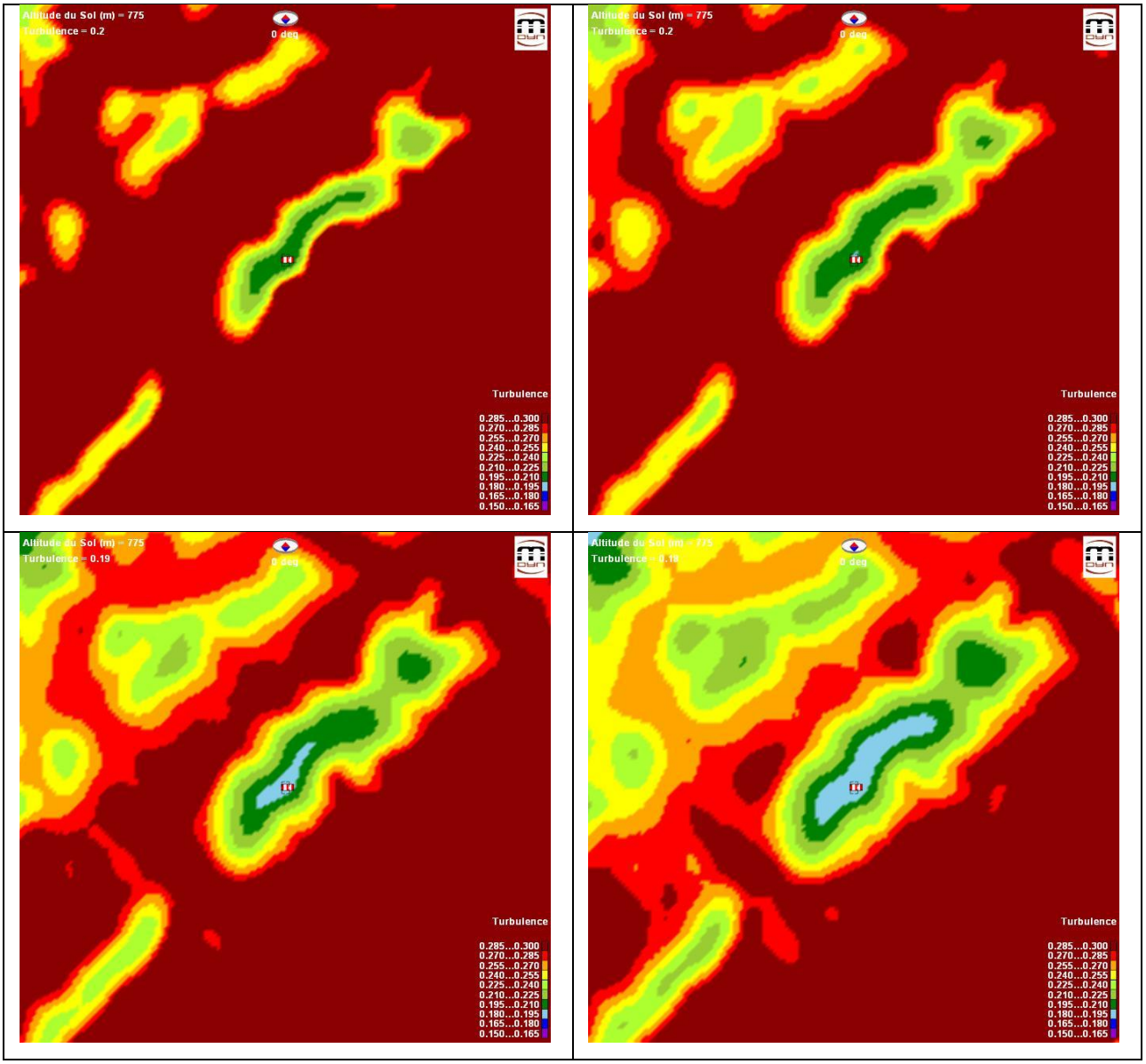


Figure 22: **Mean turbulent intensity (-) over the refined area at 40 (top left), 60 (top right), 80 (bottom left) and 100 (bottom right) meters**

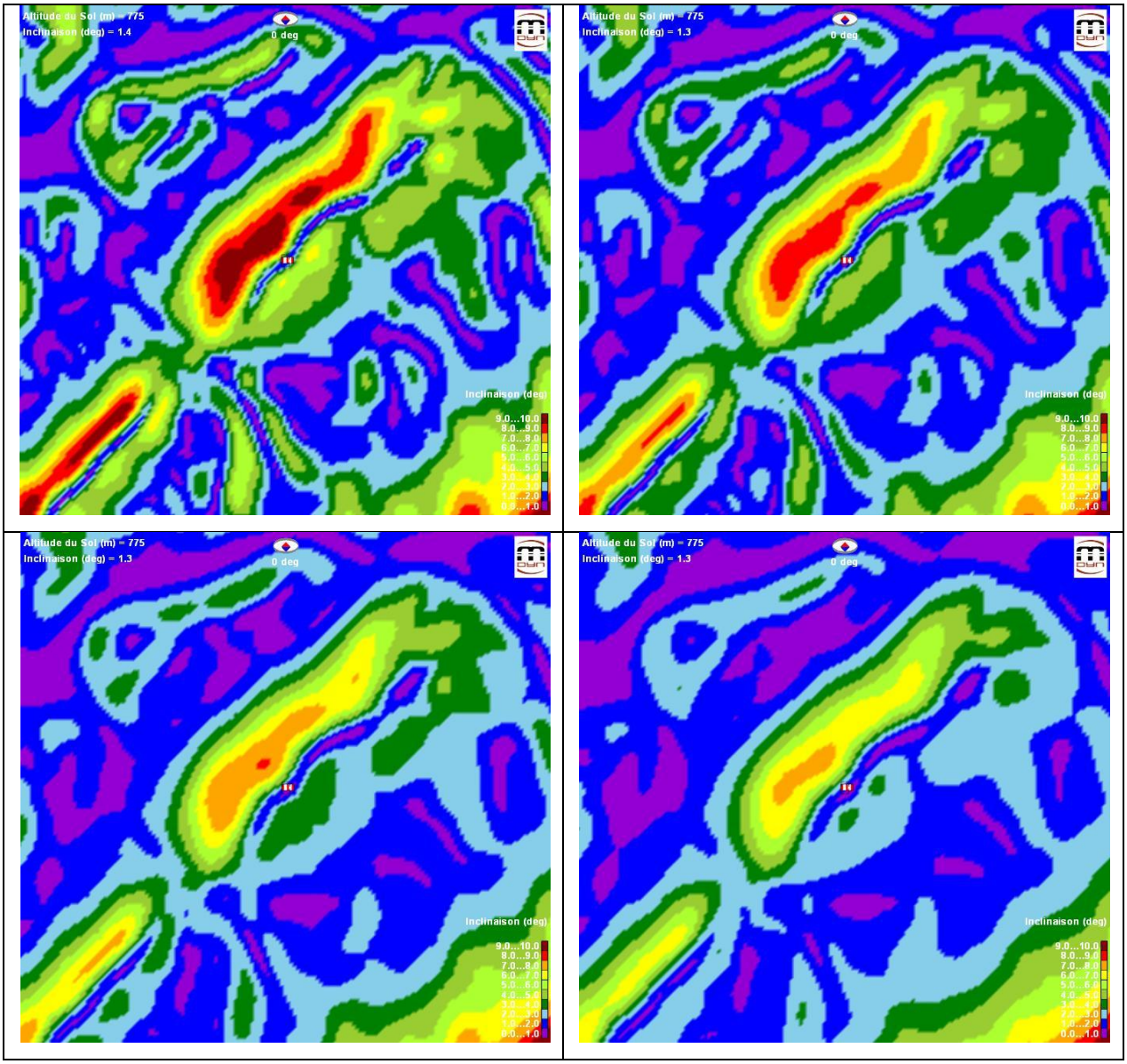


Figure 23: **Mean absolute inflow angle (deg) over the refined area at 40 (top left), 60 (top right), 80 (bottom left) and 100 (bottom right) meters**

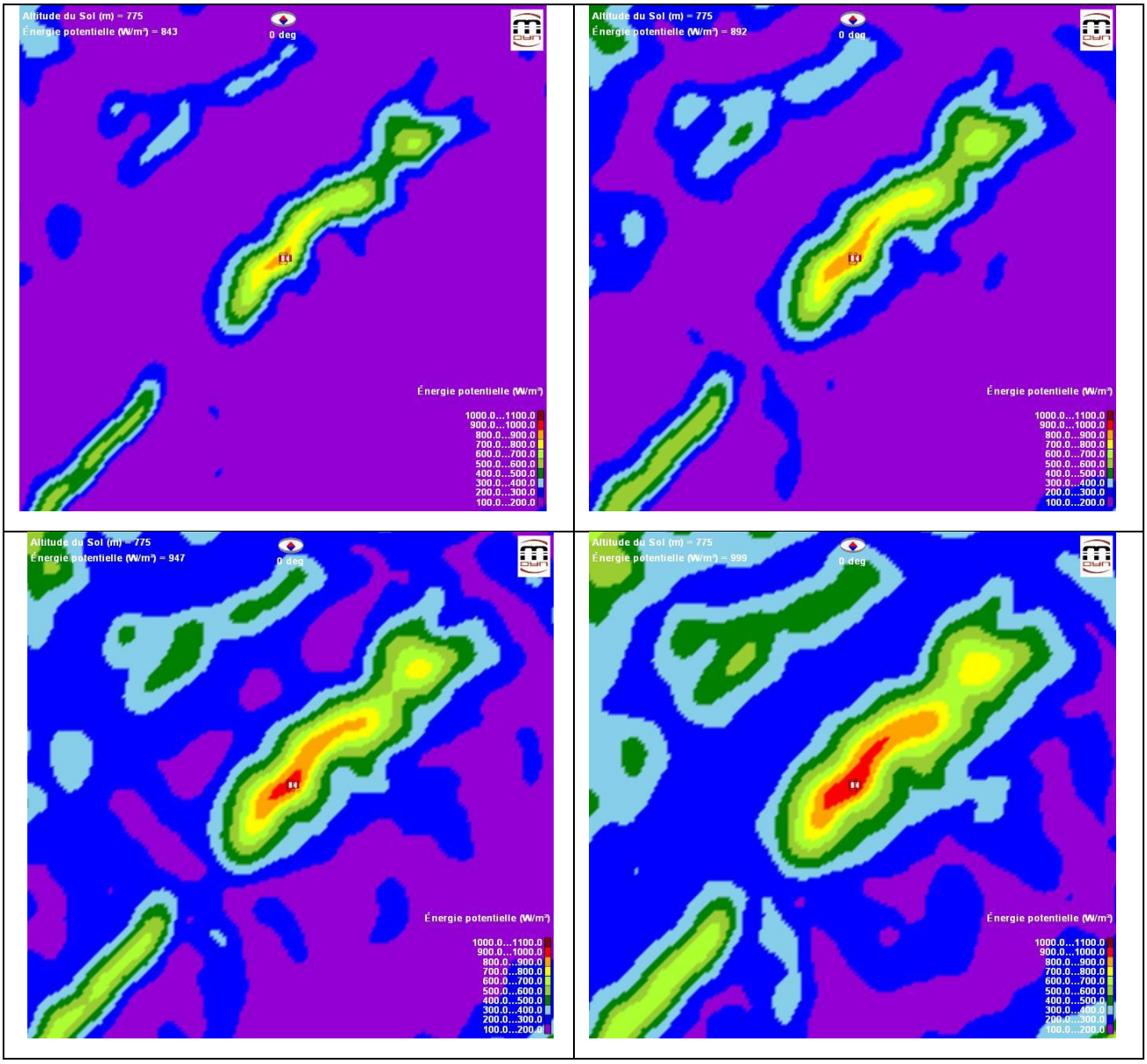


Figure 24: **Energy density (W/m²) over the refined area at 40 (top left), 60 (top right), 80 (bottom left) and 100 (bottom right) meters**

6. CONCLUSION

The wind profile analysis showed low shear exponent for prevailing wind directions, close to 0. As negative wind shear is a strong loading issue for the wind turbines, it seems that setting the mast in a zone were the flow is the strongly accelerated is suited. Moreover, this aspect decreases the error.

From previews results, we can see that the mast is perfectly localized in the area where the flow is the strongly accelerated and with low turbulent intensity. This is particularly highlighted in Figure 21, where the visualization of the mean wind speed at 40 meters shows the mast is located is the over-speeded zone.

Moreover, high inflow angles and turbulent intensity areas should be avoided in order to keep good measurement accuracy. This is verified for mast location as seen in section 4.

Thus, it appears that the virtual mast has a correct localization for erecting the mast, in order to assess the wind resource and the wind properties over the site. Nevertheless, it should be pointed out that a particular attention will have to be paid on the measured turbulent intensities for south wind directions. Indeed, the modeled turbulent intensities are particularly high for those directions, and should become an important charge issue for the wind farm project.

This initial wind resource assessment has been performed by considering the existing land cover. This is not representative of the final wind farm project, which should imply cleared areas around mast and wind turbines.

Thus, the next wind resource assessments should considered those new cleared areas in order to get a reliable expected production at wind turbine locations.

Attachment F

Eric Mathis

Executive Director and SMART-Tech Coordinator at The JOBS Project
e.mathis@jobs-project.org

Summary

Leadership/Committee Work:
Appalachian State Univeristy's Renewable Energy Initiative - The REI is charged with bringing renewable energy projects to the campus of Appalachian State. In an attempt to reduce the university's dependence on fossil fuels, the REI strives to educate the public on the benefits of energy conservation, energy efficiency, and renewable energy.

2009 Green for All fellowship - Academy graduates commit to a one-year term of service as Green For All Fellows. After an intensive three-day training, Fellows work with Green For All to advance policy, communication, and organizing goals for the one-year leadership period.

Active member of the West Virginia Department of Education and Southern Regional Education Board: 2020 Energy and Power - Curriculum development.

Presentations:
“From Technologies of Self to Radiohead: Towards an Understanding of Liberation in Foucault, Pop culture, and Human Resource Management.” Interdisciplinary Studies conference, April, 2006

“Maria Montessori: A Feminist Challenge to the Biographer.” Phi Alpha Theta History Forum & Women’s History Month Symposium, February 2007

“Lacanian Feminism and the Spectra of Passivity.” South Eastern Women Studies Association, May 2007

“An institutional-economic approach to community development in southern West Virginia.” Participated on a panel discussion entitled “Small Wind in Appalachia.” Appalachian Community Economics Conference, June 2008

"Technological Innovation and the Importance of Economies of Agglomeration and Modular Design: Stimulating Manufacturing Clusters within the Central Appalachian Region." Southern Regional Science Association, March 2010

"Sustainable Construction in West Virginia: What Green and Sustainable Mean to the Construction Worker of Tomorrow." Joint Labor Union Apprenticeship and Training Advisory Council Conference, September 2010

Publications:
"The JOBS Project 2010 Strategy Report" - Central Appalachia Prosperity Project

Specialties

graphic design, sustainable development implementation, grant writing, human resource management, leadership development, pedagogy and curriculum development, meeting facilitation, networking, organizational development, instruction workshops, RE project management, technological design, sustainable agriculture, strategy development, and industrial design

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Experience

Executive Director and Smart-Tech Coordinator at The JOBS Project
January 2007 - Present (3 years 10 months)

As the executive director, Mr. Mathis oversees all Smart-Tech and Smart-Schools projects and facilitates their integration into the JOBS Project's commitment to sustainable development under our Smart-Markets, Smart-Growth, and Smart-Solutions programs.

As the Smart-Tech coordinator, Mr. Mathis oversees implementation of all RE projects, developing the Human Sustainability Index (HSI) and acts as the strategic adviser for stimulating RE innovation and growth of RE industry throughout the Central Appalachian region.

1 recommendation available upon request

Data Analyst at Thompson Barney Law Offices
May 2007 - August 2009 (2 years 4 months)

- Organizing class action law suits
- Community outreach, digitally organizing data, researching mining industry, database development

Board Member at Appalachian State University Renewable Energy Initiative
August 2003 - January 2007 (3 years 6 months)

Helped develop and served on board as Vice President, Treasurer, and Secretary.

1 recommendation available upon request

Community Awareness Coordinator at Farm Labor Organizing Committee
January 2003 - August 2005 (2 years 8 months)

Organized community members, educational workshops, set up union meetings

---

Education

Appalachian State University
MC - Women's Studies, Corporeal Feminism, 2006 - 2009

Appalachian State University
MA - History, Institutional Economics, 2006 - 2009

Appalachian State University
BA - Interdiciplinary Studies, Labor Studies - Organizational Psychology and Design, 2000 - 2006
Activities and Societies: SURGE student scholarship
ACT AmeriCorp scholarship

Appalachian State University
BA - Philosophy, Deleuzian Neo-Matrialism, 2000 - 2006
Activities and Societies: International Relations Association
Philosophy Club

Honors and Awards

- 2009 Green for All Fellowship
- 2010 Interstate Renewable Energy Council Innovation Award

Eric Mathis

Executive Director and SMART-Tech Coordinator at The JOBS Project

e.mathis@jobs-project.org

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2 people have recommended Eric

"Eric is a problem solver, and his probing mind makes for thorough research. He is persistent, a natural leader, and engages people to be stakeholders in his endeavors."

— Miriam Makhyoun, *Student Body President, Appalachian State University*, worked directly with Eric at Appalachian State University Renewable Energy Initiative

"Eric is a detail oriented and focused on goals and solutions. He has strong leadership skills and the ability to creatively solve problems. Eric has strong capacity in research and analysis of findings, as well as project development based on his work. His dedication to sustainable enterprise development is admirable and serves his clients and colleagues to great advantage."

— Pam Curry, *Executive Director, Center for Economic Options*, was with another company when working with Eric at The JOBS Project

Contact Eric on LinkedIn

Attachment G

Jennifer S. Hudson

1130 Midland Avenue, Williamson WV · (304) 928-1704 · j.hudson@jobs-project.org

EDUCATION PROGRAM COORDINATOR

Connecting underfunded schools and underprivileged students with new technology
Increasing student achievement and enriching educational opportunities
Poising rural communities to be competitive for 21st century careers

CORE KNOWLEDGE & SKILLS

- Identifying sites for renewable energy instruction
- Integrating renewable energy curricula in schools
- Connecting workforce to training
- Preparing winning grant proposals

WORK EXPERIENCE

Education Coordinator, JOBS Project, WV — *at present*
−Coordinate education programs with local renewable energy projects
WVGreenWorks Inc, Board of Trustees — *2010 –present*
−Provide insight regarding organizational activities and strategic planning
−Discover nuances of 'dynamic governance' decision making process
Americorps VISTA, Step By Step, WV — 2009 - 2010
−Promote student governance in campus energy planning
Volunteer, JOBS Project, WV — 2008 - 2009
−Raise community awareness about renewable energy opportunities
−Event planning: program, local outreach, and media
ESL Instructor, YBM Education, South Korea — 2007-2008
−Develop course materials and pilot new curriculum

COMMUNITY INVOLVEMENT

WV GREEN-UP Council, active member — *2009-present*
−Participate in statewide strategic planning for emerging energy workforce
−Relate funding announcements to disadvantaged schools
−Assist disadvantaged schools in applying for statewide funding

PROFESSIONAL DEVELOPMENT

Appalachian State University, Boone, NC
Bachelor of Science, Secondary English Education December 2006
Concentration: Teaching English as a Second Language (TESL/TEFL)

Brushy Fork Institute, Berea College, KY
Community Economic Development track, 2009

Related training: Appalachian Regional Commission grant writing workshop, WV, 2010; Organizational capacity building workshop, WV, 2010; New Energy, New Economies Conference, OH, 2009; Energy education grant writing workshop, OH, 2009; Good Jobs, Green Jobs Conference, DC, 2009

Attachment H

Mike W. McArthur

93350 Foss Lane, Wasco, OR 97065

Born: September 22, 1948 Salem, Oregon

Experience:

Executive Director, AOC - 2004 to Present
County Judge, Sherman County - 1992 to 2004
President, Klondike Inc. (Family Farm) - 1990 to Present
Wheatacres Irrigation, The Dalles - 1989 to 1990
Coach, Sherman High School and Goldendale High School - 1979 to 1994
Vice President, Welk Farm Inc - 1977 to 1989
High School Teacher, Bandon - 1973 to 1977
High School Teacher, Franklin - 1971 to 1972

Education:

American Leadership Forum - Class XIV
National Wheat Industry Leaders of Tomorrow - 1998
Pacific Institute - 2000
Pacific Program - 1994
National Judicial College, Courts of Special Jurisdiction - 1993
Oregon College of Education, Teacher Certification - 1970 to 1971
Lewis and Clark College, B.S. Psychology - 1970

Professional and Civic - Current:

2003 - 2004	National Association of Counties Board of Directors
2002 - 2004	National Association of Counties Rural Affairs Sub Committee, Chair
1993 - 2004	AOC Board of Directors
1993 - 2004	AOC Legislative Committee
2000 - 2004	Community & Economic Development Steering Committee, Chair
1995 - 1998	Community & Economic Development Steering Committee, Chair
2002 - 2004	City County Insurance Services, Trustee
2001 - 2004	Oregon Community Development Forum, Co-Chair
2001 - 2004	Rural Development Initiatives Board, Chair
2002 - 2004	Libraries of Eastern Oregon, Executive Director
	Co-Convener, LEO Oregon Solutions Project
2000 - 2004	Lower John Day Regional Partnership and Investment Board, Chair
1997 - 2004	Northern Oregon Regional Corrections Board (NORCOR)
2000 - 2004	Mid Columbia Economic Development District Board
2002 - 2004	Mid Columbia Housing Authority
2003 - 2004	Oregon Solutions Advisory Board
2004	Oregon Transportation Plan Advisory Committee
2004	State Advisory Committee on Climate Change
2003 - Present	Oregon Geographic Names Board

Professional and Civic - Previous:

1999	Association of Oregon Counties, President
1993 - 1997	Association of Oregon Counties, District Chair
2003 - 2004	Governor's Industrial Lands Task Force
1999 - 2002	SB 1145 Advisory Committee
2001	Governor's Solutions Project, Umatilla County Dust Blow, Convenor
2001 - 2002	Governor's Economic Strategy Council
2002	Oregon Dispute Resolution Commission
2002	Oregon State Library Board
2002	Governor's Task Force on PERS
1994 - 1999	NorthEast Oregon Area Health Education Center, Board
1997 - 1999	Area Health Education Center Statewide Advisory Board
1996	Governor's Task Force on Gaming
1993 - 1996	Local Government Advisory Committee on Transportation
1997 - 1999	Local Government Advisory Committee on Human Services
1997 - 1998	Legislature's Interim Work Group on Economic Development
1992 - 1999	Mid Columbia Council of Governments
1994	Wy'East Resource Conservation and Development District, Founding Member
1990 - 1997	North Central Regional Strategies Board

Other:

1999 - 2001	Sherman Wheat Growers League, President
1999 - 2002	Oregon Wheat Growers League, Board of Directors
1999 - 2000	Farm Program Committee, Chair
1988 - 1989	Sherman County Grain Growers Cooperative, Director
1990 - 1995	Mid-Columbia Producers Cooperative, Director
1989 - 1992	Sherman County Historical Society, President

Areas of Responsibility:

Association Management
Intergovernmental Relations
County Finance
Public Information
Governmental Organization

AOC Committees:

Board of Directors
Legislative Committee

Attachment I

PETER ANDREW DALKE

Contact Information:

Work address: Oregon Solutions
Portland State University
506 SW Mill Street, Suite 720
Post Office Box 751
Portland, OR 97201-0751

Telephone: (503) 341-5547
Email: dalke@pdx.edu

Home address: 2700 SW English Lane
Portland, OR 97201

Telephone: (503) 226-4862

Summary of Professional Experience:

Oregon Solutions

- 2008 to Present — Natural Resources Project Management, *Oregon Solutions*, National Policy Consensus Center, Portland State University, Portland, OR.

- 5/03 to 2007 — Interim Program Director, *Oregon Solutions*, National Policy Consensus Center, Portland State, University, Portland, OR.

  Oregon Solutions projects since 2003 have included:
  - Lewis and Clark Fort Clatsop-to-the-Sea Trail;
  - Reduced Idling at Truckstops;
  - North Portland Diesel Emissions Reductions;
  - Cardwell Hill Regional Conservation Planning Strategy;
  - Lakeview Biomass Facility;
  - Stream Restoration Partnership;
  - Harney County (Forest) Restoration Collaborative;
  - Federal Forests Advisory Committee Implementation Working Group;
  - Renewable Energy and Eastern Oregon Landscape Conservation Partnership

  More about Oregon Solutions can be found at:
  www.ORsolutions.org

Oregon Department of Environmental Quality

- 2008 to 2009 Watershed permitting and water quality trading program development, Oregon Department of Environmental Quality.

- 9/03 to 2007 Interagency coordinator, Economic Revitalization Team, Oregon Department of Environmental Quality, Portland, Oregon.

- 2002 to 2004 Natural Resource Specialist, Surface Water Management, Department of Environmental Quality (DEQ), Portland, OR. Special assignment as part of team to develop the first watershed-based NPDES permit in the nation, and the first water quality trading permit in Oregon.

- 9/99 – 4/03 Community and interagency liaison, Oregon Department of Environmental Quality *Community Solutions Team* (CST) and *Environmental Partnerships for Oregon Communities* (EPOC) program, Portland, OR.

- 12/01 – 12/02 Chair, *Governor's NW Community Solutions Team.*

- 3/01 – 7/01 Acting Water Quality Permit Manager, Source Control Section, DEQ Northwest Region, Portland, OR.

- 9/98 – 8/99 Natural Resource Advisor, special assignment to the *Governor's Community Development Office*, Salem, OR.

- 6/94 – 8/98 Interagency coordinator, *Environmental Partnerships for Oregon Communities (EPOC)*, Oregon DEQ, Portland.

- 3/92 – 5/94 Assistant to the Director, Oregon DEQ, Portland.

- 1/90 – 3/92 Management Services Division Administrator, DEQ, Portland.

- 9/89 – 12/89 Planning and Policy Development Manager, Environmental Cleanup Division, Oregon DEQ, Portland.

- 9/88 – 8/89 Budget manager, Oregon DEQ, Portland.

Municipal Government

- 7/84 – 7/86 and12/87 – 7/88 Budget analyst, City of Virginia Beach, VA.

Business

- 7/86 – 10/87 Secretary-Treasurer and Director of Operations, Imagination Systems, Inc., Virginia Beach, VA.

- 9/83 – 6/86 Operations Manager and consultant, Imagination Software, Inc., Virginia Beach, VA.

- 12/82 – 8/83 Financial management, Dalke's Theatres, Inc., Woodstock, VA

Professional Recognition includes:

- 2003 Friend of Rural Water Award, Oregon Association of Water Utilities, for "dedication and willingness to assist small Oregon communities to solve environmental problems".

- 1996 Reinventing Government Award ("Hammer Award"), National Performance Review and US EPA, for the "community compliance flexibility team".

- 1995 Certificate of Recognition, DEQ Director Langdon Marsh, for "outstanding work implementing the Environmental Partnerships for Oregon Communities" program.

- 1995 Investing in People Award, Governor John Kitzhaber, for "building significant collaborations and partnerships" through development of Environmental Partnerships for Oregon Communities.

Education:

- B.A. Environmental Sciences and Economics, University of Virginia, Charlottesville, VA. 1980.
- M.B.A. Finance, Pennsylvania State University, State College, PA. 1983.

Representative Presentations **& Panels**

- *Environmental Planning: Cutting Edge Thinking and Praxis*, with Rich Margerum, University of Oregon, Gail Achterman, Institute for Natural Resources, Oregon State University, and Steve Greenwood, Essex Consultants, Oregon Planning Institute Conference, September 15-16 2005, Eugene, OR.
- *Collaborative Governance,* with Susan Brody, National Policy Consensus Center and Portland State University, for the China Ministry of Land and Resources delegation, September 21 2005, Portland, OR.
- *Oregon Solutions Process for Community Projects: the Milwaukie Waterfront Example,* with Portland State University staff, for the Vietnamese Decision-

Maker Study Exchange, Ho Chi Minh City delegation, May 23 2005, Milwaukie, OR.

- *Building Social Capital Through Community Solutions,* with Oregon Solutions staff, Oregon Mediation Association Fall Conference: Building Social Capital, November 5-6 2004, Beaverton, OR.
- *Community-based Problem Solving: Oregon Solutions Model,* with Greg Wolf, National Policy Consensus Center, for the Palestinian Delegation Training at Portland State University, June 1 2004, Portland, OR.
- *Community Solutions: A Model of Government Coordination & Collaboration,* panel with Robin Roberts, Governor's Office and Chad Olson, City of Rainier, OR, at the National Brownfields Conference 2003: Growing a Greener America, October 28 2003, Portland, OR.
- *Compliance Assistance to Small Communities – A Proactive Approach,* panel with Joe Francis, Associate Director, Nebraska Department of Environmental Quality, for the US EPA National Compliance Assistance Providers Forum: Optimizing Resources for Environmental Results, December 3-6 2002, San Antonio, TX.
- *Small Community Compliance Problems: Working to Find Solutions*, Oregon Association of Water Utilities Summer Classic VIII, August 26 2002, Seaside, OR.
- South Tillamook County, Oregon – Regulatory and Community Development workshop, February 26 2002, Pacific City, OR.
- *Building on Compliance Flexibility for Small Communities – Environmental Partnerships for Oregon Communities,* US EPA Small Community Advisory Subcommittee of the Local Government Advisory Committee, March 1-2 2001, Seattle, WA.
- *Collaborative Efforts for Restoring Watersheds in Rural Communities: An Oregon Example,* poster session co-author with David Livengood, Oregon DEQ, American Water Resources Association International Conference on Riparian Ecology and Management in Multi-Land Use Watersheds, August 28-31 2000, Portland, OR.
- *Successful Methods for Providing Compliance Assistance to Communities and Tribal Governments,* with representatives from the Ute Tribe, Pueblo Office of Environmental Protection, City of Chicago and EPA Region 4, US EPA Forum 2000: Building Compliance Assistance Partnerships, March 1-2 2000, Atlanta, GA.
- *Wastewater and Drinking Water Panel,* Rural Infrastructure Conference sponsored by U.S. Senator Ron Wyden, December 15 1999, Eugene, OR.
- *Addressing the Challenge: Examples of How Assistance Providers Can Contribute to the Solution,* with Dave Rozell, Oregon DEQ and Bruce Barbour, Washington Department of Ecology, Northwest Pollution Prevention Roundtable Fishing for Success: Keys to Providing Successful Assistance, October 28-29 1998, Seattle, WA.
- *Incorporating flexibility into new and existing environmental regulations and other system components to account for small town priorities and needs,* panel with Ken Harmon, US EPA Office of Enforcement and Compliance Assistance

and Mayor Jeanne Burch, City of Fossil, OR, for the Environmental Council of the States: A Small Town Dialogue, October 5-6 1998, Austin, TX.

- *Environmental Partnerships for Oregon Communities,* Pacific Northwest Pollution Prevention Resource Center Regional Roundtable, January 30-31 1997, Seattle, WA.
- *Compliance Flexibility Demonstration Projects,* presentation with representatives from Idaho, Nebraska and New Hampshire state environmental regulatory agencies at the EPA Small Towns Task Force and the National Rural Development Partnership Joint Meeting, March 29 1995, Washington, D.C.
- Small community water and wastewater workshops series, 1996-2003. Delivered 18 workshops across Oregon.

Attachment J

Wendy R. Willis
Deputy Director for National Programs
National Policy Consensus Center
Portland State University
503-725-9091
wwillis@pdx.edu

Professional Experience

Director for National Programs July 2008 – present
National Policy Consensus Center
Portland State University
Serves as deputy director in charge of coordinating and managing national programs and initiative.

Director of Business Development and Engagement July 2007- July 2008
National Policy Consensus Center
Portland State University
Served as lead for fundraising, business development, and civic engagement for the National Policy Consensus Center.

Deputy Director
Development Director 2007-Present
Policy Consensus Initiative
Serves as deputy director and part-time development lead for the Policy Consensus Initiative.

Program Manager October 2007-July 2008
Oregon Solutions
Portland State University
Served as program lead for social sustainability. Developed, assessed, and managed projects in the area of social sustainability; served as resource for other project managers.

Executive Director 2003-2007
City Club of Portland Portland, Oregon
Managed and ran 1700-member non-profit organization dedicated to citizen participation and civic engagement.

Assistant Federal Defender 1995-2003
Federal Public Defender Portland, Oregon
Advocated for clients, both orally and in writing, in the United States District Court, the Ninth Circuit Court of Appeals, and the United States Supreme Court.

Adjunct Faculty Member 2002-03
Lewis & Clark College, Northwestern School of Law Portland, Oregon
Proposed, designed and taught seminar on post-conviction relief.

Law Clerk 1993-1995
Oregon Supreme Court Salem, Oregon
Chief Justice Wallace P. Carson, Jr.
Assisted Chief Justice in drafting legal opinions and memoranda. Represented Chief Justice on committees and task forces on issues affecting the bar and the judicial department.

Adjunct Faculty Member 1994-95 Academic Year
Willamette University College of Law Salem, Oregon
Taught legal research and writing to first-year law students. Supervised students in preparing their first briefs and in presenting mock oral arguments.

Education

J.D. Georgetown University Law School 1993
Magna cum laude Washington, D.C.
Activities: Notes & Comments Editor, *Georgetown Law Journal*; Georgetown Criminal Justice Clinic
Awards: Order of the Coif; West Award for Best Third Year Grades; Award for Best Student Note

B.A. Willamette University 1988
Major: Political Science Salem, Oregon
Senior Seminar: Alexis de Tocqueville, *Democracy in America*
Awards: Annie M. Barrett Award for Scholarship; Jesse E. West Award for Service

Community Service and Volunteer Activities

American Leadership Forum	
Service Opportunities Workgroup, Chair	2007-present
Abernethy Elementary Site Council	2008 – 2010
Chair	2009-2010
Upstream Public Health Board	2009 - 2010
Abernethy Elementary Foundation Board	2006-2009
Board Member, p:ear	2004-07
Multnomah County Cultural Coalition	2005-2007
Co-Chair of Coalition	2006-2007
Willamette University Board of Trustees	1999-2001
Willamette University Alumni Association	1995-2002
President of Board	1999-2001

Task Force on Gender Fairness Oregon State Bar – Supreme Court	1996-98
Post-Conviction Workgroup, Indigent Services Commission	2002-03
Executive Committee, Criminal Law Section of Oregon State Bar	1998-2000
Board of Directors, Oregon Criminal Defense Lawyers' Association	1997-98

Honors and Awards

Business Journal's 40 Under 40 Award	April 2006
American Leadership Forum, Class XX	2005-06

Attachment K

Aurelius Robleto

1017 S. Braddock Ave.
Pittsburgh, PA 15218

Tel: 412-478-9090
Fax: 412-346-1035
apr@robletolaw.com

ADMISSIONS

- State Bar of Pennsylvania (2005); U.S. District Court for the Western District of Pennsylvania; Supreme Court of Pennsylvania.
- State Bar of West Virginia (pending).

LEGAL EXPERIENCE

Solo Practitioner, Pittsburgh, PA *September 2010 to Present*

- Represent commercial debtors and creditors including a used automobile dealer ship, trucking company and an equine veterinary practice.
- Represent an emerging renewable energy non-profit organization in development of wind farm networks.

Bailey & Glasser, LLP, Charleston, WV *November 2009 to September 2010*
Associate

- Concentrated in commercial insolvency and bankruptcy litigation, commercial and corporate transactions, and energy and environment matters.
- Negotiated coal, oil and gas leases with an emphasis on Marcellus Shale.
- Resolved boundary, royalty and wheelage disputes for parties to mineral leases.
- Represented a coal operation debtor in a Chapter 11 bankruptcy proceeding with approximately $25 million in debt and drafted a plan of liquidation.
- Conducted workout plans with multiple banks and commercial debtors.
- Prosecuted and defended adversary proceedings including fraudulent transfer, contract disputes and claims objections.
- Handled multi-million dollar commercial transactions, lender liability claims, minority shareholder litigation and complex contract disputes.
- Prosecuted predatory lending claims on behalf of large residential developer.

Campbell & Levine, LLC, Pittsburgh, PA *February 2006 to November 2009*
Associate

- Represented corporate and individual business debtors, unsecured and secured creditors, official committees of unsecured creditors, personal injury claimants committees and asbestos liability channeling trusts in bankruptcy matters.
- 100% success rate appealing decisions of the United States Bankruptcy Court. Drafted winning bankruptcy appeals to the United State District Court for the Western District of Pennsylvania and the United States Court of Appeals for the Third Circuit.

- Second chaired the defense of preference/fraudulent transfer case in excess of $1 million; drafted a winning motion to dismiss the preference claim and prepared the expert witness to successfully defend the fraudulent transfer count at trial.
- Conducted day to day matters in Chapter 11 cases for commercial debtors.
- protection of secured creditor rights in bankruptcy cases, contribution claims, business formations, bankruptcy and non-bankruptcy asset sales.

Allegheny County Office of the Public Defender, Pittsburgh, PA *May 2004 to August 2004*
Legal Intern

- Researched and drafted memoranda on numerous criminal law issues, including the *corpus delicti* rule, sufficiency of Miranda warning and suppression of evidence.
- Drafted pleadings, including a petition for post conviction relief.

Greenfield Brewer and Kay, Pittsburgh, PA *September 2003 to December 2003*
Law Clerk

- Discussed strategy in criminal cases including the appeal of a felony murder conviction.
- Conducted legal research and drafted memoranda on pre-trial and appeal issues including admissibility of certain expert testimony, false confession and traffic stop validity.

OTHER EXPERIENCE

The Jobs Project, LLC, Charleston, WV *August 2010 to Present*
Interim Member of Board of Directors

- Review and revise operating agreement of affiliated limited liability company.
- Review and comment on employment agreements and cooperation agreement.
- Identify potential legal hurdles in proposed wind farm construction.

United Parcel Service, Pittsburgh, PA *June 2000 to January 2006*
Senior Computer Technician

- Drafted user manuals for end users of proprietary applications and hardware.
- Conducted technician training seminars for new system rollouts.
- Trained new technicians in troubleshooting hardware and software problems.

Lancaster Malleable Castings Co., Lancaster, PA *Summer 1995*
Iron Molder

- Operated caste production machines and poured molten iron into castes.

EDUCATION

University of Pittsburgh School of Law, Pittsburgh, PA
Juris Doctor, December 2004

Semester Honors, 4 awards
GPA: 3.26

Saint Vincent College, Latrobe, PA
Bachelor of Arts, History, December 1999

Dean's List, 4 awards

MEMBERSHIPS AND AFFILIATIONS

- American Bankruptcy Institute
- American Bar Association
- Pennsylvania Bar Association
- Allegheny County Bar Association
- Generation Charleston
- Business Network International

REFERENCES AVAILABLE UPON REQUEST.

Attachment L

JOSEPH DALE BROUSE
206 Dean Street
Beckley, WV 25801
(304)228-3121

Employment Experience

August 2007-present
Natural Capital Investment Fund-Beckley, WV

Business Lender

Duties include promotion of non profit loan program for sustainable business development in West Virginia and Virginia. Credit analysis and credit presentation to investment committee. Coordination of technical assistance to small businesses.

December 2005-August 2007
Business Services Officer
BB&T Beckley, WV

Duties include: commercial lending, prospecting for deposits and fees, managing existing portfolio, and investment sales. (Series VI and 63 licensed). Managed loan portfolio of $20mm.

October 1998-December 2005
Bank One, Oak Hill, WV
Business Relationship Manager/ Assistant Vice President
Managed loan portfolio of $37mm as well as total relationships that included deposits and fee based service accounts. Designated Commercial Real Estate Lender for southern WV.

March 1997-October 1998
Bank One, Beckley, WV
Banking Center Manager

Responsible for attainment of banking center goals in deposits, loans and investments, branch control, hiring and coaching of sales staff. Served as Change Leader for West Virginia South Market I meetings with community market leaders. Completed Cohen-Brown Sales Training-Leadership and Business Techniques.

May 1994-July 1995
United National Bank, Beckley, WV
Customer Service

Duties include: cashing checks, making deposits, and handling withdrawals.

June 1993-May 1994
Montgomery Ward, Beckley, WV

Assistant Personnel Manager
Duties include: staff duties, payroll, training, and hiring.

Education

Concord College, Athens, WV-May 1996. Bachelor of Arts in History; Minor in Political Science.
Beckley College, Beckley, WV (Mountain State University)-January 1989 to May 1991.
Woodrow Wilson High School, Beckley, WV-June 1988. Graduated with Honors.

Activities/Honors
-Member of Beckley Rotary Club
-Chairman, Raleigh County Democratic Executive Committee
-Board Member, Raleigh County Community Action Association
-Steering Committee Member, New River Community and Technical College
-Instructor for Entrepreneurship course taught in conjunction with WVU-Technical College and WorkForce West Virginia.

Attachment M

CELINE BEZAULT
RESUME

Fluid Mechanics Engineer – Digital modelling

Education and Training

2004-2007 Engineer ISITV (Institut des Sciences de l'Ingénieur de Toulon et du Var - 83), Field : Fluid Mechanics
Master2 degree of Digital Modelling in oceanography physics and coastal meteorology
Obtaining of a merit scholarship

2004 Preparatory course for «grandes écoles » – Maths Sup Maths Spé – Lycée Pothier – Orléans (45)

Work experience

Since 10/2009: Wind energy and environment Engineer - Meteodyn

2007-2009: Study and development engineer specialized in 3D CFD studies, ARIA Technologies

- Studies of atmospheric dispersion of pollutants on industrial sites
- Studies of security hazard on industrial site
- Specific developments inserted into the CFD ARIA Local code – ESTET (FORTRAN)
- In charge of maintenance and developments for the software dedicated to the CNES and the DGA CAEPE
- Clients training – Conception and realization

2007: Development of simulation software and studies dedicated to the spreading of pollutants, ARIA Technologies - 6 months training period

- Development around d'ARIA Local – ESTET
- 3D modelling of atmospheric dispersion of pollutants on industrial nuclear sites

2006: UV Atlas validation mission, NIWA (National Institute of Water and Atmospheric Reseach), New Zealand – 3 months training period

- Comparison measurements / calculations – validation : results integrated in the future version

2005: Modelling of the deformation of a boat hull, Research department Mauric (13) –1,5 month internship

- Computations on the bottom of the hull, resistance and stability

Compétences

- Digital modeling applied to atmosphere and to coastal oceanography
- Fluid Mechanics, material resistance, hydraulic
- Ocean-Atmosphere exchanges, Meteorology
- Hydrodynamics
- Study and construction offshore
- Oceanic circulation and swell
- Industrial risk management

Computer Skills

- Range of ARIA Technologies software : ARIA Local, ARIA Risk, SARRIM, ARIA Impact
- Range of Meteodyn softwares: Meteodyn WT, Urabwind, Transat
- CFD codes (MERCURE, SATURNE), basis in C, fortran, shell, Unix, Matlab
- Autocad, SteelWin (finite element software)
- MS Office (Excel, Word, PowerPoint), bases en MS Pr

Language Skills

English	good skills, both written and oral: TOEIC: 855
Spanish	good skills, both written and oral

Selection of international publications by Céline Bezault

Sanquer S., Bezault C., Clarenc T., Houbart JC. (2010) Simulating the Bolund hill flow by CFD approaches. New Zealand Wind Energy Conference, 29-31 Mars 2010, Palmerston North NZ

Bezault C., Dupont G., Weaver C., (2010) Use of a CFD model for vertical wind extrapolation in complex terrain. European Wind Energy Conference & Exhibition, 20 au 23 avril 2010, Varsovie, Pologne

Texier O., Clarenc T., Bezault C., Girard N., Degelder J., (2010) Integration of atmospheric stability in wind power assessment through CFD modeling. European Wind Energy Conference & Exhibition, 20 au 23 avril 2010, Varsovie, Pologne

Attachment N

DIDIER DELAUNAY
RESUME

Engineer Ecole Centrale de Lyon - PhD in Meteorology Paris VII

Since 2002: Founder and President of METEODYN

- Received the "Golden Label of Innovation" by « Carrefour Entreprise Sarthe » in Feb.2005
- Development of software suite WT, TopoWind, UrbaWind
- World Leader for wind induced risk studies on railway lines (France, Spain, Italy, South Korea)
- Management and coordination of the European project WEATHER for the development of Wind Alert Systems, which gathers 11 European partners, among them U. of Birmingham and Nottingham, Politecnico di Milano.

1983-2002: Applied research in wind effects - Centre Scientifique et Technique du Bâtiment (Nantes)

- **Wind effects on large structures and constructions**:
  Wind characterization on construction sites: measurements, modeling, statistical analysis
  Measurement and analysis of the dynamical response of structures
  Validation of computing methods and wind-tunnel simulations
  References: Normandy Bridge, Millau Viaduct, Rion-Antirion Bridge, Vasco da Gama Bridge…

- **Urban Climatology**
  Development of a computational software for the assessment of outdoor climatic comfort.
  Studies regarding aerodynamic comfort in outdoor spaces.
  Natural ventilation studies
  Atmospheric pollution studies: numerical computations, in-situ measurements.
  References: Le Louvre's urban environment, Porte Maillot, Maison de la RATP (Paris) - Centre J.M. Tjibaou (Nouméa) - Mapping in France of radiation's contribution to vertical walls.

- **Wind protection of terrestrial transports**
  Wind characterization: measurements, modeling, statistical analysis
  Wind simulation for vehicles' dynamical response
  Protection Strategies (wind alert systems, wind breakers)
  References: TGV Méditerranée, Eurotunnel, Hanover-Würzburg line, CDG airport

- **Wind power climatology**
  Determination of reference cyclonic wind speeds in the DOM-TOM to set calculation rules
  Regional maps of wind power resources (Bretagne, Corse, and Antilles)
  Regional maps of natural ventilation potential (Antilles, Guyane, Réunion)
  References: Wind power resource maps – Addition of cyclonic wind studies in the Eurocode1

1977-1982: Institutional Research – CNRS

- CNRS laboratory of Glaciology and Environmental Geophysics of Grenoble: PhD, Doctor-Engineer thesis on the katabatic winds of Adelie Land (Antartic).
- CNRS laboratory of precipitation's physics Grenoble : physical and numerical modeling of atmospheric phenomena (fog, radiation, precipitations)

Academic activities

ENPC-Paris	: Master's degree courses « Statistical Climatology»
CNAM-Nantes	: Courses « Finite differences and volumes methods»
Nantes Architecture School	: Master's degree courses « Urban Micro-climatology»
Météo-France	: Seminars « Wind Power »

40 publications and international communications
Member of Thesis juries
Member of several scientific committees

Selection of international publications by DELAUNAY

WIND MODELLING

Delaunay D., Chantelot A., Guyader T., Alexandre P. (2004) Meteodyn WT: A software for wind resource assessment in complex terrain, European Wind Energy Conf., London (UK), Nov. 2004

Nicoullaud V., Delaunay D. (2000) Modelling particle deposition in turbulent dispersed two-phase flow, Int. Conf. on Computational Wind Engineering , Birmingham (UK), Sept. 2000

Delaunay D. (1995) Calcul numérique des écoulements, Traité de physique du bâtiment - Tome 1 : connaissances de base, Ed. Centre Scientifique et Technique du Bâtiment, Paris, 1995

Delaunay D., Lakehal D., Pierrat D. (1995) Numerical approach for wind loads prediction on buildings and structures, J. of Wind Engineering and Industrial Aerodynamics, July 1995

Pierrat D., Delaunay D. (1995) Numerical simulation of the flow past a 2-D model hill, Euromech colloq. Atmospheric turbulence and dispersion in complex terrain, BOLOGNA (ITA), sept. 1995

Delaunay D., Locatelli J.P. (1990) A gust model for the design of large horizontal axis wind turbines, European Wind Energy Conference and Exhibition, Madrid, Spain, Sept. 1990

URBAN CLIMATOLOGY

Clarenc T., Delaunay D. (2009) UrbaWind, un nouvel outil pour l'évaluation du confort climatique en milieu urbain, séminaire Association Francophone pour l'Ingénierie du Vent, Bruxelles, Avril 2009

Delaunay D., Soubra S., Coiret A., Carré S., Bouvier P. (2002) Development of an interactive design tool for the evaluation of pedestrians thermal environment, 1st Int. Workshop on Architectural and Urban Ambient Environment – February 6-7-8, 2002, Nantes, France

Delaunay D. (1998) Numerical simulation of the pollutant dispersion at the street scale: The importance of turbulence modelling and discretization, Proceedings Int. Conf. on Air Pollution Modelling and Simulation, Champs-sur-Marne, France, October 26-29, 1998

Delaunay D. (1997) Numerical simulation of atmospheric dispersion in an urban site: comparison with field data, J. of Wind Engineering and Industrial Aerodynamics, November 1997

Delaunay D., Lakehal D., Barré C., Sacré C. (1997) Numerical and wind-tunnel simulation of gas dispersion around a rectangular building, J. Wind Engineering and Ind. Aerodynamics, April 1997

Delaunay D. (1995) Rayonnement solaire et éclairement, Traité de physique du bâtiment - Tome 1 : connaissances de base, Ed. Centre Scientifique et Technique du Bâtiment, Paris, 1995

WIND EFFECTS ON CONSTRUCTIONS

Delaunay D. (2006) Calcul des actions du vent dans l'Eurocode 1, Communication Association France-Belgique-Suisse pour l'Ingénierie du Vent, Paris, 19/09/2006

Barré C., Delaunay D., Flamand O., Grillaud G.(1999) The wind design of the Millau Viaduct, KRYNICA'99 – Wroclaw – Sept. 13-18, 1999

Delaunay D., Grillaud G., Biétry J., Sacré C. (1999) In-situ validations of wind design studies for long-span bridges: the Millau Viaduct, 10th Int. Conf. on Wind Engineering - Copenhagen (DK) 21-24 June 1999

Delaunay D., Grillaud G. (1998) Field measurements of the wind response of a cable-stayed bridge: validation of previsional studies: Normandy Bridge and Pont de l'Iroise, J. of Wind Engineering and Industrial Aerodynamics, April 1998

Biétry J., Delaunay D., Conti E. (1995) Comparison of full-scale measurements and computation of wind effects on a cable-stayed bridge, J. Wind Engineering and Industrial Aerodynamics, July 1995

Delaunay D., Grillaud G. (1994) Méthodes d'estimation des caractéristiques du vent dans les sites complexes, Congrès AFPC-ITPTP, PARIS, 14 juin 1994

TRANSPORT - WIND ALARM SYSTEM

Sterling M., Quinn A.D., Hargreaves D.M., Cheli F., Sabbioni E., Tomasini G., Delaunay D., Baker C.J., Morvan H. (2010) A comparison of different methods to evaluate the wind induced forces on high sided lorry. J. of Wind Engineering and Industrial Aerodynamics, January 2010

Delaunay D., Baker C., Cheli F., Wright N. (2006) Wind Alarm Systems for Road and Rail Vehicles, the WEATHER project, 13th Int. Road Weather Conference, Turin (I), March 25th - 27th 2006

Delaunay D., Cléon L.M., Sacré C., Sourget F., Gautier P.E. (2003) Designing a Wind Alarm System for the TGV-Méditerranée – 11th Int. Conf. on Wind Engineering – Lubbock (Texas – USA) June 2003.

Gautier P.E., Cléon L.M., Delaunay D., Hongre L. (2002) Protection de la ligne TGV-Méditerranée basée sur une prévision temporelle et spatiale des forts vents latéraux, Journées « Capteurs et traitement du signal pour les transports guidés », Paris, Déc. 2001 - revue I2M – Editions Hermès

Gautier P.E., Delaunay D., Sacré C., Parrot M., Dersigny C. (2001) TGV-Méditerranée – High Speed Line Safety against cross-winds: a slow-down system based on anemometric measurements and spatial short-term meteorological prediction, World Congress Railway Research, Koln (D), Nov 2001

WIND ENERGY AND CLIMATOLOGY

Clarenc T., Girard N., Chantelot A., Delaunay D. (2007) Wind farm production assessment in forested and complex terrain, European Wind Energy Conference, Milan, Italy, 7-10 May 2007

Chantelot A., Delaunay D., Clarenc T., Koulibaly D. (2006) Wind Resource Assessment in Forested and Complex Terrain, European Wind Energy Conference, Athens (Greece) , 27 Feb - 2 March 2006

Sacré C., Delaunay D. (1992) Structure spatiale de la turbulence au cours de vents forts sur différents sites, J. Wind Engineering Industrial Aerodynamics, n. 1/3, 1992, pp. 295-303, vol 41

Barnaud G., Berlianu I.V., Bietry J., Delaunay D. (1990) Le cyclone Hugo : des propositions d'actions pour éviter de nouveaux dégâts, CSTB Magazine, n. 34, Mai 1990, pp. 3-7

Delaunay D. (1989) Cartographie du vent en Guadeloupe et en Martinique pour application à la ventilation naturelle, Congrès CIB 89. PARIS, 19-23, Juin 1989

Delaunay D. (1988) Extreme wind speed distributions for tropical cyclones, J. Wind Engineering Industrial Aerodynamics, 1988, pp. 61-68, Vol 28

Delaunay D. (1987) Cartographie de l'énergie éolienne en Bretagne, Congrès Arts et Techniques du vent, Saint-Malo, juin 1987

Delaunay D. (1987) Vents extrêmes dus aux cyclones tropicaux dans les DOM-TOM, Building climatology'87 - 2nd international symposium, Moscow (URSS), 12-15 Mai 1987

Attachment O

meteodyn
meteorology & dynamics

THOMAS GUYADER
RESUME

Computer Engineer – Analyst / software developer

Education and Training

2001 – 2004 University of Mans – IUP MIME Master GEII - Specialization: Interactive systems engineering
1999 – 2001 N. Appert High school – two-year technical degree in Industrial IT

Work experience

Since July 2004 **Meteodyn Software development Manager**

- Development of Meteodyn software and graphical user interfaces (Wind energy, Small wind, Climatic comfort in outdoor spaces, forecasting, natural ventilation)
- Specifications elaboration, analysis, conception, tests
- Support to creation of the scientific modules and integration
- Participation to studies
- Graphic standards, icons
- Equipment logistics and security
- Technical support

March - June 2004 **Master degree training period: Meteodyn**

- Graphical User interface development of a software dedicated to wind computation.

June – August 2003 **IT training period: Geo-Technologies**

- Localization and visualization of vehicles by GPS system

Computer Skills

Programming

- Platforms : Visual Studio, Eclipse
- UML Conception : Entreprise Architect
- Object language : C#, C++ / Java
- WEB language : HTML, XML, PHP, JavaScript
- Other languages : Fortran, C
- DirectX et OpenGL libraries

Technical

- Multithreading, multi processors
- Tools dedicated to the quality, deployment, follow-up and robustness of the software: FxCop, NUnit, Log4Net, Hudson, InnoSetup, MsiExec, AnkhSVN, Tortoise

Other Software

- Microsoft Office
- Geographical information systems: Autocad, GoogleEarth, GlobalMapper
- CAD software : Rhino, Autocad
- Image software: Photoshop

Language skills

Technical English	good skills, both written and oral

Selection of international publications by Thomas Guyader

Delaunay D., Chantelot A., Guyader T., Alexandre P. (2004) Meteodyn WT: A software for wind resource assessment in complex terrain, European Wind Energy Conf., London (UK), Nov. 2004

Attachment P

CV
JEAN-CLAUDE HOUBART

Engineer in computer science- ENSIIE (Ecole Nationale Supérieure d'Informatique pour l'Industrie et l'Entreprise)
Diploma in Financial Management - Conservatoire National des Arts et métiers (C.N.A.M.), Paris
PhD « Logic and Philosophy of the Knowledge », University of Nantes - Thesis on the systems theory and cybernetics. Pass with 70 to 80%

Since 11/ 2008 **Technical Manager - Meteodyn**

- Management of the technical team
- Head of Meteodyn WT and UrbaWind software development.
- Pre sales support.
- Projects :
  - Wind Atlas, PACA region
  - East European high speed railway wind safety study
  - Salty deposits study for Alstom Transport.

From 03/2006 to 11/ 2008 **Technical Manager– Pacte Novation, West Agency**

- Technical management of the agency (20 persons).
- Quality Key resource : Implementation of CMMI in preparation for the agency's certification
- Projects:
  - Processing and analysis of the XML flows between **la Poste** and franking machines operators. 200 days x Persons, .NET.
  - Restructuring of the pay software for the **Caisse Nationale des Industries Électriques et Gazières** (**EDF / GDF**): Retirement and disability. 5 000 days x persons, J2EE.
  - Follow-up application for files dedicated to setting-up connections and materials for the **DISIT**, proper Telecom company of **La Poste**. 900 days x Persons, J2EE.

- Pre sales tasks : Response to invitations to tender, elaboration of proposals

From 03/2005 to 03/2006 **Business Developer Consultant – Thales**

- Key account manager (**DGI**, **La Poste** et **MACIF**).
- Management (30 employees)
- Responsible for new technologies invitations to tender.
- Creation of an agency at Niort (France) : recruitment, technical and logistical means setting-up, ISO 9001 implementation

From 2004 to 2005 **Professor – Conservatoire National des Arts et Métiers (CNAM)**

- Teaching 1 evening/week of the unit called "Urbanization and Architecture of information systems management"

From 2002 to 2004 **Consultant / Project Manager – Pacte Novation**

- Technical solutions, architecture, conception and supervision of the following projects :
  - Management **of security keys information server** for the Technical Research Department (actual DTC) of **La Poste (French Post Office)** for franking machines. 600 days x Persons, .NET.
  - Integration of a workflow resource and recruitment process setting-up for **Regional Airlines** (**Air France Groupe**). 50 days x Persons, .NET.
  - Qualification means for edge servers for the social security system of **GIE Sesam Vitale**. 600 Days x Persons, J2EE.
  - System tool for the LDAP directory of the **Conseil Régional des Pays de la Loire**. 350 Days x Persons, .NET.
  - Workflow for deploying internal applications of **La Poste (DIRR)**. 250 Days x Persons, .NET.
- Consultancy in methodology, quality and project management for the SNCF/DSIV and the CNIEG (retirement company for EDF/GDF)
- Head of partnership: Workflow W4 publisher; IBM «Combinatorial optimization»; Microsoft on .Net, Biztalk and K2.Net. platform
- Recruitment: Technical skills of the applicants.

From 1997 to 2001 **Consultant / Independent expert**

- Creation of a Web Agency (5 employees - Turnover 150 K€)
- Consultancy and expertise on new technologies for the University of La Sorbonne (Paris 3), Cardif, BNP Paribas Group.
- Training on new technologies and on UML for Atos Origin, France Telecom Multimedia, CNAF, CS Communication et Systèmes …

From 1995 to 1997 **Logistician / Expatriate administrator - Médecins du Monde**

- Financial and **logistics** management for 2 missions - Angola (1.5 M€ /year) and Iraqi Kurdistan (800 K€/year). In charge of the expatriates safety.

From 1991 to 1994 **Development Engineer – French Ministry of Justice**

- Creation and development of IT modules dedicated to the code of criminal procedure automation and head of the test team (2 persons) for the project qualification.

Selection of international publications by Jean-Claude Houbart

Sanquer S., Bezault C., Clarenc T., Houbart JC. (2010) Simulating the Bolund hill flow by CFD approaches. New Zealand Wind Energy Conference, 29-31 Mars 2010, Palmerston North NZ

Attachment Q

Christopher J. Burgess

Chief Operating Officer
Alpha Energy, LLC
202.302.4164 · cjb@alpha-energy.com

Company Responsibilities

Mr. Burgess is responsible for ensuring that business operations are efficient and effective. He is the lead for project development and the regulatory affairs of the company, including site planning, local zoning and variances and environmental compliance. Mr. Burgess has over 10 years of experience as an environmental professional and project manager with a variety of experience in multi-disciplinary projects. His responsibilities and area of expertise include new business development, preliminary feasibility studies, project planning, compliance documentation and governmental relations.

Project Experience Highlights

Mr. Burgess has over ten years of work experience in project management. He has shown initiative and provided leadership while managing projects and working issues ranging from environmental planning to national emergency response operations. The following is a compilation of some of the experiences and skills that are relevant to project development and management:

- Preliminary feasibility assessments for Erie PA, Crisfield MD, Currituck NC, Somerset MD, Ottawa Lake, MI and Southwest Missouri wind energy projects
- Wind Energy project development for Annapolis, Crisfield and Southwest Missouri
- Management of all environmental and energy regulatory issues for Alpha Energy LLC
- Managed environmental permitting and regulatory issues for multiple engineering projects 1999-2000
    - National Environmental Policy Act preparation and publications for multi-million dollar water and wastewater projects
    - Clean Water Act regulation compliance
    - Endangered Species Act mitigation measures
    - Coastal Zone Management Act compliance
- Emergency Operations Center Team Leader for the EPA: Integrated GIS centralized desktop support into the DC and all Regional offices. Led and managed $560,000 office renovation and technology refresh March – July 2006
- Deputy Incident Commander for the EPA Hurricane Katrina Response in Washington DC : managed EPA's Emergency Operations Center during EPA's federal response to Hurricane Katrina / Rita 2005-2006

Professional Experience

United States Environmental Protection Agency (US EPA) Office of Emergency Management, Washington, DC
Program Analyst – Emergency Operations Center Team Leader: June 2006 –February 2009

US EPA Chemical Preparedness and Prevention Office
Washington, DC
Environmental Protection Specialist : August 2000 –June 2006

Rivers and Associates Inc., Greenville, NC
Planner II: August 1998 –August 2000

Education

Master of Science: Environmental Science & Policy
John Hopkins University (JHU) Baltimore, Maryland.

- Graduated with Honors, December 2004

Bachelor of Science: Urban and Regional Planning
East Carolina University (ECU) Greenville, North Carolina.

- Graduated Magma Cum Lade December 1999
- American Planning Association, Outstanding Student of the Year
- John C. Ralph Honors Scholarship
- Chancellor's List

Attachment R

Keith A. Pauley
3200 Kanawha Turnpike
Building 701, Suite 200
Dow Technology Park
South Charleston, WV 25303
800-611-2296 x81
keith.pauley@matricresearch.com

EDUCATION/TRAINING:
Master of Science, Nuclear Engineering, Oregon State University, 1995
Bachelor of Science, Nuclear Engineering, Oregon State University, 1988

PROFESSIONAL TRAINING
Rational Software Development Process, Rational, Inc., 04/01
The Anatomy of Project Management, Leadership First, Inc., 03/99
Project Management Certification Program, International Institute for Learning, 05/97
Statistical Design and Analysis, International Institute for Learning, 05/96
Project Management Fundamentals, Battelle Memorial Institute, 02/96
Project Leadership, Management and Communications, George Washington University, 05/95
Project Risk Management, George Washington University, 06/94
Criticality Safety Analysis, Battelle Memorial Institute, 01/94

SUMMARY

Mr. Pauley has over 19 years of technical experience in the development of high technology systems for various federal agencies. He currently leads the Mid-Atlantic Technology Research and Innovation Center (MATRIC) as its initial President. Previously, he has designed and developed various hardware and software systems, including the Space Shuttle "glass cockpit", Department of Energy defense materials production hardware, International Space Station micro-meteoroid shielding, space power and propulsion systems, and a solid state laser system. His systems engineering approach has allowed him to provide leadership in the Independent Verification and Validation of International Space Station software. He has provided extensive project management leadership for many government customers for projects ranging up to $300M .His proven skills in systems engineering, software development and project management have resulted in successful conclusion of every project in which he has being involved. He is an active researcher and technical innovator with NASA and several other federal agencies.

PROFESSIONAL EXPERIENCE SUMMARY:

Mid-Atlantic Technology Research and Innovation Center (MATRIC) **04/04-present**
President and CEO
Work Experience Summary
Mr. Pauley leads all aspects of the Mid-Atlantic Technology Research and Innovation Center, a non-profit research organization in South Charleston, WV. With 46 employees, MATRIC has rapidly grown in its three years of operations in its three business areas: Chemical and Environmental Technologies, Health and Life Sciences and Advanced Engineering Systems.

He is actively leading three research projects for the NASA IV&V Facility on "Test Coverage Methods", "Software Assurance of the STOL Test Language", and "Software Assurance of FPGA Systems."

Titan Corporation **01/02 – 04/04**
Project Manager, Fairmont, WV
Work Experience Summary
Mr. Pauley managed the 40-person IV&V team, the largest IV&V project in the world, which provides independent oversight and support to critical software development on the International Space Station for the National Aeronautics and Space Administration (NASA). The IV&V effort assesses software development progress on 26 CSCIs using requirement, design, code and test analysis methods as well as the use of an independent testing facility. The IV&V project's efforts are geographically distributed between Houston, TX, Huntsville, AL, and Fairmont, WV. Mr. Pauley provided primary customer interface, including budget development and deliverables. Mr. Pauley was the critical interface to both ISS programmatic boards and panels and the development prime contractor (Boeing), including presentation to senior NASA filed center and headquarters executives, and Boeing management. Furthermore, Mr. Pauley was responsible for all Titan ES3 business development within West Virginia and is part of the business development team for the federal government software development market.

United Space Alliance **06/98 – 01/02**
Deputy Program Manager, Houston, TX
Work Experience Summary
Mr. Pauley managed the $370+M project (~$75M per year) with over 225 direct reporting personnel and three major subcontractors (Boeing, Lockheed-Martin Owego, Motorola) to develop new computer hardware and software systems for the Space Shuttle cockpit, including 2 new flight computers and over **500 kSLOCs** of Criticality 1 real-time software using CMM Level 5 processes. Mr. Pauley was part of a small team that developed the original architecture for the Cockpit Avionics Upgrade and instantiated the design using rapid prototyping systems engineering methodologies. Mr. Pauley was also responsible for all technical and programmatic aspects of the project, including systems engineering, subcontract management, budget development, financial reporting, metrics and primary customer interface.

Ares Aerospace Corporation **06/97 – 06/98**
Senior Project Manager, Houston, TX
Work Experience Summary
Mr. Pauley directly supported the United Space Alliance Chief Executive Officer (CEO) in technology application and systems engineering on the Space Shuttle. Mr. Pauley developed and implemented a multi-attribute decision analysis information technology system to evaluate space shuttle program upgrades, modifications and corporate investments.

Battelle Memorial Institute **01/94 – 12/96**
Business Line Manager, Richland, WA
Work Experience Summary
Mr. Pauley developed and operated the Environmental Restoration Business Line. He developed the business line from initial start-up to $21M in annual revenues within 1 year, including major contracts from the D&D Program Office at the National Energy Technology Laboratory. Mr. Pauley was the Operations Manager for the B-Cell Safety Cleanout Project, including the management of a $7M annual budget, 50 person staff, RADCON planning, engineering, procurement, fabrication, and training. He designed, developed and implemented an Nd:YAG solid state laser cutting system for hot cell operations.

Battelle Memorial Institute **05/92 – 12/93**
National Security Project Manager, Richland, WA **10/96-6/97**
Work Experience Summary
Mr. Pauley provided management and technical leadership in the area of surveillance, tracking, protection, and accountability of nuclear weapons materials in the Former Soviet Union and other Third-World Nations.

Coordinated 50+ staff from 3 Department of Energy national laboratories.

Battelle Memorial Institute **06/88 – 1/94**
Space Technology Development Engineer, Richland, WA
Work Experience Summary
Mr. Pauley supported the development of nuclear power and propulsion systems, including selection to 3 national panels:

1. Member of NASA's Space Environmental Effect Working Group
2. Member of the NASA/DOE Steering Panel on SEI Nuclear Propulsion Test Facilities
3. Supported NASA/DOE Steering Panel on SEI Fuels, Materials and Related Nuclear Propulsion Technologies

Mr. Pauley supported General Electric's Ground Engineering System test design at Hanford, including criticality and radiation shielding analyses.
Mr. Pauley also supported numerous defense-related projects, including SDI Multi-Megawatt reactor and fuel designs.
Mr. Pauley conducted Space Shuttle-based materials exposure experiments as a principal investigator on the EOIM/3 payload and developed micro-meteoroid multi-layer ceramic fabric shielding concept that is now baselined for the International Space Station.
Mr. Pauley conducted numerous thermal vacuum tests at the Johnson Space Center as well as low-gravity tests on the NASA KC-135 for various thermal management conceptual designs, including heatpipes and cryogenic radiators.

Hardware	Software	Computer Languages
Intel and PowerPC processors	MS Office; MS Access	C/C++
VAX	VxWorks	Visual Basic
IBM mainframes	VAPS	Fortran
CRAY parallel processing computers	StateMate, Simulink	JAVA, html

CLEARANCE
Formerly held Department of Energy "3/Q" with sigmas
Formerly held Department of Defense "3/Q"

PROFESSIONAL AFFILIATIONS
Member, Project Management Institute
Member, American Nuclear Society

PUBLICATIONS / PUBLIC/PROFESSIONAL PRESENTATIONS GIVEN
36 journal articles and conference publications
Over 200 government documents and contractual reports

Attachment S

GREG W. CLUTTER

3427 Collins Ferry Road • Morgantown, WV 26505
Work: (800)611-2296 x842• Mobile: (304) 612-6265 • Email: greg.clutter@matricresearch.com
Entrepreneurial Development Experience • Start up Financing •
Extensive Industry Background • International Experience

PROFESSIONAL EXPERIENCE

Mid-Atlantic Technology, Research & Innovation Center, Inc. – Feb 2008 to Present

DIRECTOR OF COMMERCIALIZATION

Responsible for all aspects of MATRIC and subsidiaries' focused technology commercialization and entrepreneurship initiative. Initiative includes seed stage investment fund, commercialization services to start up companies and entrepreneurial training programs.

- Structure negotiated and closed multiple equity and near-equity seed investments in start up companies.
- Coordinate relationships with venture capital companies and professional service providers.

West Virginia High Tech Consortium Foundation - Fairmont, WV July 2002 – Jan 2008

DIRECTOR OF COMMERCIALIZATION

Responsible for all aspects of West Virginia focused technology commercialization and entrepreneurship initiative. Initiative includes seed stage investment fund, commercialization services to start up companies and entrepreneurial training programs.

- Structured, negotiated and closed multiple equity and near-equity seed investments in West Virginia start up companies.
- Coordinate relationships with all West Virginia venture capital companies and professional service providers.
- Manage annual operating budget of approximately $1M and seed stage investment fund of $1.5M.
- Supervise team which provides business planning, advisory and other services for West Virginia start up companies.
- Have created proposals and strategies to secure over $2M in operating and seed stage funding from Claude Worthington Benedum Foundation, the Appalachian Regional Commission and various West Virginia state agencies.
- Led program to designation of an Appalachian Regional Commission Development Venture Capital Fund.
- Secured funding for and oversee strategy creation and implementation for statewide Kauffman Foundation FastTrac educational program.
- Managed the launch and implementation of West Virginia small business R&D grant assistance program.
- Lead the vision, design and execution of annual West Virginia venture capital conference.

Nortel Networks - Research Triangle Park, NC April 1998– July 2002

SENIOR MANAGER - SUCCESSION SOLUTIONS COMMERCIAL MARKETING

Led team responsible for creation and implementation of commercial marketing and pricing strategies for Voice over Internet Protocol (VoIP) products. Portfolio included over 30 new products and solutions. Designated as Nortel Networks "Top Talent" performer.

- Created and implemented revised commercial strategy to align pricing and commercial positioning to overall marketing and business unit strategy. Revised strategy protected long term revenue streams.
- Restructured and implemented VoIP software commercial and pricing strategy.
- Led team that was instrumental in crafting commercial structure for $1 billion Sprint contract for new products.
- Trained global sales teams on pricing and commercial strategies for product portfolio.
- Regularly devised commercial programs to drive long and short-term revenue goals.

MANAGER – PRODUCT AND SEGMENT MARKETING

Responsible for leading cross-functional teams to create overall positioning, sales presentation materials, marketing collateral, trade show support and sales team training.

- Played significant role in launch of new product lines and creation of go-to-market sales strategies.
- Drove increased emphasis on the true customer financial impact from implementing Nortel solutions.
- Coordinated communication of key customer functionality requirements into product development teams.
- Responsible for implementing customer solution demonstration labs and trade show technical demonstrations.
- Secured secondary customer engagements through customer presentations as subject matter expert.

MANAGER – OPERATIONS AND CUSTOMER SERVICE

Oversaw the implementation of new products into customer service processes. Implemented key projects to improve manufacturing cycle times.

- Performed analysis and devised additional processes to shorten manufacturing cycle times by 10% - 20%.
- Program managed technical trials for new technology solutions through gating process.
- Created and implemented new processes to simplify new product introduction into customer service functions.
- Led team of five people, which implemented tools to improve labor utilization in manufacturing.

Nortel Networks - Châteaudun, France & Morrisville, NC July 1997 – March 1998

FACILITATOR –MATERIAL SERVICES

Assisted in implementation of central raw materials storage facility and demand-pull materials systems for French manufacturing facility. Supervised 25 employees at North Carolina manufacturing facility.

- Devised strategy for safety stock that resulted in 20% increase in materials flexibility at lower safety stock levels.
- Created work team foundation among associates that included the implementation of peer performance reviews.
- Implemented system that resulted in 35% decrease in material processing times and 25% increase in cycle count accuracy.

Deloitte & Touche LLP - Charlotte, NC June 1992 – July 1995

SENIOR ACCOUNTANT

Managed audit teams responsible for performing quantitative and qualitative analysis on clients' financial statements and records. Industries served include manufacturing, real estate and health care.

- Supervised international engagement of manufacturing client with $1 billion in annual revenue.
- Streamlined communication and audit procedures for multi-office engagement that produced cost savings of 25% versus previous years.

EDUCATION & PROFESSIONAL DEVELOPMENT

University of North Carolina
Kenan-Flagler Business School - Master of Business Administration
Beta Gamma Sigma Business Honor Society

West Virginia University
Bachelor of Science in Business Administration (Accounting)
Summa cum Laude

Venture Capital Institute Graduate
Atlanta, GA, 2005
Industry Leading Training Program for those in Venture Capital Investment Field

National Association of Seed and Venture Funds
Annual Conferences and Professional Development Events 2005, 2006 and 2007

Kauffman Foundation FastTrac Facilitator Training
Kansas City, MO, 2004 (30 hours)
Training Program for Facilitators/Instructors of FastTrac Programs

Intellectual Property Law and Venture Capital Financing – CLE International
Research Triangle Park, NC - 2003 and 2004 (30 hours)
Legal education on Intellectual Property, Technology and Venture Capital Law.

Media Training – Fleishman-Hillard International Communications
Research Triangle Park, NC, 2000 (10 hours)
Analyst and press interview training for Nortel Networks spokespeople for successful media interactions

OTHER LEADERSHIP ROLES AND ACTIVITIES

Certified Public Accountant – West Virginia and North Carolina

Regular Guest Lecturer - West Virginia University College of Business and Economics

Technology Based Economic Development Group – Steering Committee Member, West Virginia Vision Shared

Leadership Harrison – Harrison County Chamber of Commerce leadership program Class of 2004

Operations and Manufacturing Intern, Burlington Industries Menswear Division, Clarksville, VA 1995

Kenan-Flagler MBA Student Association, Chairman Community Service Club, 1994-95

Beta Alpha Psi Professional Fraternity, Chapter President - WVU 1991-92

Attachment T

The JOBS Project
Placing Democracy within Development

10/20/10

Appalachian Regional Commission
Attn: James Bush
WV Development Office
Capitol Complex, Building 6
Charleston, WV 25305-03 11

Re: Angel Winds Renewable Energy, LLC

Dear Mr. Bush,

The JOBS project has been apprised of the funding request that has been submitted to the West Virginia Development Office/Appalachian Regional Commission for the pre-feasibility studies of what could potentially be West Virginia's first locally-owned utility scale wind farm. The JOBS Project believes that Mid-Atlantic Technology, Research and Innovation Center (MATRIC), being the primary sponsor of this application, brings the proper level of experience needed to assist in such an evaluation.

The JOBS Project has been actively working with Angel Wind Renewable Energy, LLC since late November, 2009 and is in full support of expanding the locally-owned wind model in Monroe County and throughout the state of West Virginia. We hope this application is reviewed in a favorable manner and the request for funds are granted.

We will commit a total of $48,000 in in-kind services.

Sincerely,

The JOBS Project, Executive Director

The **JOBS** Project
www.jobs-project.org
1130 Midland Ave.
Williamson, WV 25661
(304)601-9091

Attachment U

P | C | I
POLICY CONSENSUS INITIATIVE

Greg Wolf, Executive Director
P.O. Box 1762
Portland, Oregon 97207
(503) 725-9079 FAX (503) 725-9099
gwolf@pdx.edu
www.policyconsensus.org

October 20, 2010

The letter will serve as the Policy Consensus Initiative and Association of Oregon Counties commitment of $17,000 in workshops, as reflected in the overall grant application. One workshop was conducted last June to provide preliminary support, and the other will be conducted with the team to help launch the project.

Very sincerely yours,

Wendy Willis
Deputy Director
PCI

Attachment V

Aurelius Robleto

ROBLETOLAW
1017 S BRADDOCK AVE PITTTSBURGH, PA 15218
TEL 412-243-2109 **FAX** 412-346-1035
apr@robletolaw.com

October 19, 2010

Eric Mathis
The Jobs Project
e.mathis@jobs-project.org
(Via Electronic Mail)

Re: Letter of Commitment

Dear Eric,

Kindly accept this letter as evidence of my commitment to serve on the Interim Board of Directors of The Jobs Project ("TJP") and to provide such legal advice and services to TJP as are reasonably necessary.

Generally, I bill clients at an hourly rate of $250.00 but I intend to provide legal services and practical advice as a member of the Board of TJP without charge. I anticipate that I will spend 100 hours performing services for TJP.

I intend for this letter to evidence my commitment to TJP however, this letter shall not serve as evidence of a binding engagement or an unconstrained promise to provide *gratis* legal services to TJP in perpetuity.

Sincerely yours,

/s/ Aurelius Robleto
Aurelius Robleto

Attachment W

Attachment X

Philadelphia, October 19th, 2010

Addressee: **Appalachian Regional Commission**
Attn: James Bush
WV Development Office
Capitol Complex, Building 6
Charleston, WV 25305-03 11

Re: Angel Winds Renewable Energy, LLC

Dear Mr. Bush,

Meteodyn has been apprised of the funding request that has been submitted to the West Virginia Development Office/Appalachian Regional Commission for the pre-feasibility studies of what could potentially be West Virginia's first locally-owned utility scale wind farm. Meteodyn believes that Mid-Atlantic Technology, Research and Innovation Center (MATRIC), being the primary sponsor of this application, brings the proper level of experience needed to assist in such an evaluation.

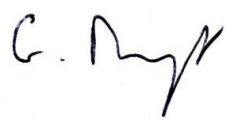
Using its expertise in meteorology and wind modeling in rough terrain, Meteodyn has already performed the wind resource mapping of the site of Little Mountain. The total amount for this study was evaluated at $12,600, costs being based on salaries and pay off of software development and material. Meteodyn would like to support the Angel Winds project as we believe it will have a positive economical impact on the area, and regarding the future development of wind energy projects in West Virginia. Therefore, Meteodyn offers to absorb the cost related to the construction of the mapping, the calculation of the wind energy production, and the realization of the deliverable, bringing the price of the wind study down to $4,900.

Meteodyn will perform a risk assessment which includes the quantification of the project specific uncertainties and the whole range of exceedance probabilities of the wind farm's annual energy production, using the data available at this early stage of the project. Meteodyn offers an in-kind contribution of $800 for this analysis bringing the cost of the risk assessment to $1,000.

Meteodyn will write a computer program to check on the performance of the anemometers. This program will recognize any dysfunction during the data acquisition period and will report problems to Meteodyn. Meteodyn will submit monthly data reports to Angel Winds and a final report, presenting the results and conclusions after a year of measurements. Meteodyn will use its improved matrix MCP method (Measure Correlate Prediction) in order to produce long-term prediction on the site of Little Mountain. The cost for the wind analysis described in this paragraph is $19,700. This price includes an in-kind contribution of $4,000, which brings the total in-kind contribution of Meteodyn to $12,500.

Meteodyn has been aware of this project since late November, 2009 and is in full support of expanding the locally-owned wind model throughout the state of West Virginia. We hope this application is reviewed in a favorable manner and the request for funds is granted.

Sincerely,



Guillaume Dupont
Business Manager
Guillaume.dupont@Meteodyn.com

Attachment Y

Attachment Z

CENTER FOR ECONOMIC
Options, Inc.
A CATALYST FOR SOCIALLY AND ECONOMICALLY SUSTAINABLE ENTERPRISES DEVELOPMENT

October 18, 2010

Appalachian Regional Commission
Attn: James Bush
WV Development Office
Capitol Complex, Building 6
Charleston, WV 25305-03 11

Re: Angel Winds Renewable Energy, LLC

Dear Mr. Bush,

I have been apprised of the funding request that has been submitted to the West Virginia Development Office/Appalachian Regional Commission for the pre-feasibility studies of what could potentially be West Virginia's first locally-owned utility scale wind farm. The Center for Economic Options (CEO) fully supports community-owned wind and believes it may provide the type of economic diversification so crucially needed in our rural counties. CEO has been aware of this project since late November, 2009 and is in full support of expanding the locally-owned wind model in Monroe County and throughout West Virginia.

This project complements programmatic work we are planning, and will be able to offer workforce-related resources and connections, and training modules and curricula related to the wind industry. We are looking forward to assisting with this project as it develops.

I also believe that Mid-Atlantic Technology, Research and Innovation Center (MATRIC), being the primary sponsor of this application, brings the proper level of experience needed to assist in this pre-feasibility study.

We hope this application is reviewed in a favorable manner and the request for funds is granted.

Sincerely,

Pam Curry

Pam Curry
Executive Director

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