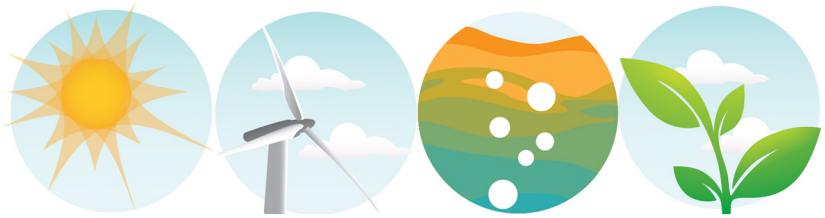
# RE POWER `EM

Wind Resource Feasibility Study Proposal

for St. Vincent de Paul of Alameda County
Oakland, CA, USA
19 Nov 2012



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# RE POWER `EM

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Proposal number 01-2012, Oakland, CA, 19 November 2012



Skystream 3.7 image courtesy of Southwest Wind Power

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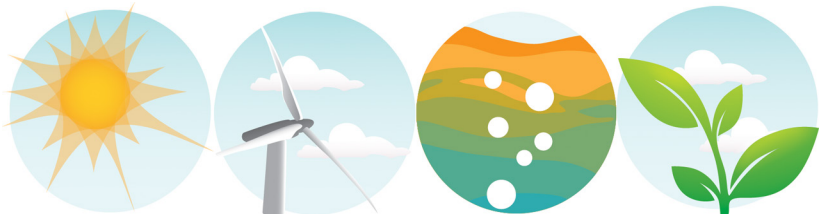
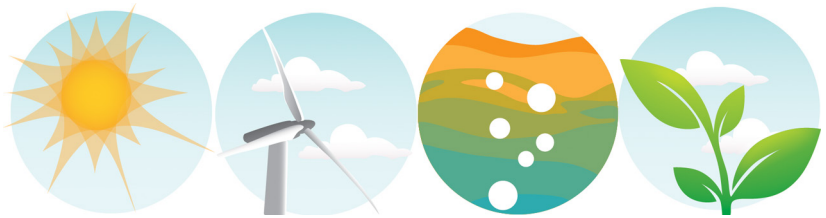


01

# EXECUTIVE SUMMARY

## Prepare. Respond. Adapt.



In disaster relief scenarios, the human species is no longer truly self-sufficient. Because of this, we need to adapt in the way that we think about future scenarios that will involve the 'indifference' of Mother Nature, like Hurricane Sandy. Sandy was a poignant reminder of how little most of the USA citizenry thinks about the reliability and importance of energy--that is, until it's not there.

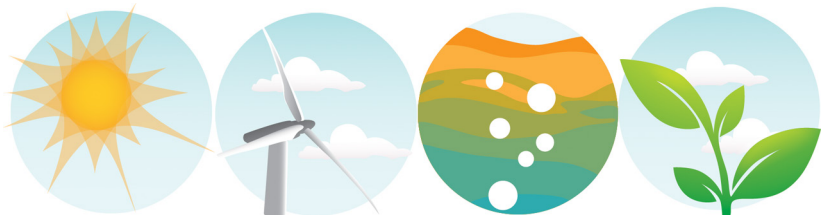
Hurricane Sandy reminded us that our motorized vehicles, our buildings and our communications require constant, available energy access to energy and energy carriers, be they electricity or hydrocarbon fuels i.e. gasoline, diesel or natural gas. It has been demonstrated, time and time again that the immense enterprise of supply line of energy provisioning can be easily disrupted. There have been demonstrations where short-term consequences have been acutely tragic, with damaging economic effects that can also linger for a very long time.

Our energy systems need to be agile and as robustly designed as possible, with built-in redundancy and assets dispersion for better resource management during overwhelming and extreme events, that stand the test of time post-disasters, be they due to natural disasters, financial, unexpected/unanticipated events, etc., requiring adaptation employing 'everyday brilliance for disaster resilience.'

Our answer to generating solutions with a positive impact includes fortifying the St. Vincent de Paul Society (SVdP) of Alameda County in California by diversifying this organization's renewable energy portfolio with hybrid renewable energy systems. The first step toward implementing this proposition to upgrading the electrical infrastructure requires performing a wind resource survey for the two of the SVdP Oakland campuses; the East Oakland SVdP Distribution Center and the West Oakland Community Center/Dining Center.

# EXECUTIVE SUMMARY

Prepare. Respond. Adapt.



This proposal to provide a wind feasibility study is presented to the St. Vincent dePaul Society (SVdP) of Alameda County, Oakland, CA, USA. This aim for the outcome of this study is to augment the current energy portfolio and include back-up power emergency response options and contingencies for deployment during disaster relief events. The energy generated from a propose wind turbine to  meeting day-to-day power needs, and investigating alternative, agile and adaptable storage opportunities for un-interruptible power requirements during disaster relief events, as well as for robust, longer term sustainable needs.

This document provides an overview of my relevant qualifications, and my proposed approach to working with SVdP to develop a viable plan developing a strategy for siting and installing wind turbines on the SVdP property. Additionally, this document can be used to serve as a start for appealing to funding of a place-based initiative in developing innovative approaches in preparing for an uncertain climatic future.

## Approach to working with SVdP

Kimberly King will be available on a weekly basis to conference and meet. Wind resource data will be collected weekly, adhering to the following (tentative) time line:

- Dec 2012 - Feb 2013 (Stage 1 - East Oakland campus wind data collection)
- Mar 2013 - May 2013 (Stage 2 - W. Oakland campus wind data collection)

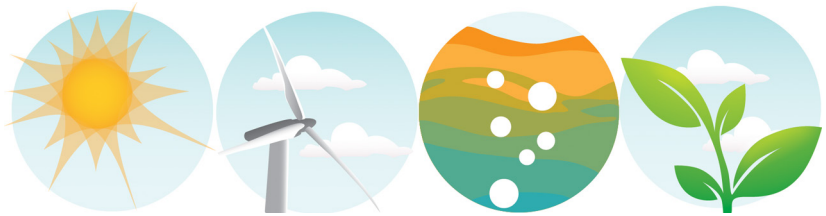
03

# QUALIFICATIONS

## Prepare. Respond. Adapt.

Kimberly King is a hybrid renewable energy engineer, disruptive technologist, generalist, technical writer, web content management, copy editor and communications specialist with a background in renewable energy, systems engineering, sustainable development, and IT systems analysis and administration. As a hybrid renewable energy engineer, Kimberly is an agile engineering generalist with an understanding of sustainable development whose skills set are typically comprised of an amalgam of mechanical and electrical engineering. Kimberly is able to design and assemble systems and components that are comprised of more than one renewable energy (RE) technology i.e. solar, wind, hydro-kinetic (ocean/wave/micro-hydro), biomass, geothermal and storage (battery, hydrogen fuel cell, fly wheel). The RE technologies selected depend on one's geographical predisposition, resource availability and the end-use need.

Kimberly is a member of the Energy Institute (UK), International Solar Energy Society (ISES) and the Union of Concerned Scientists. She possess a comprehensive knowledge of current research and trends being conducted in the field of renewable energy and sustainability development; nationally and internationally.



# 04

# *Unique Expertise, Background and Experience*

For the past three years, since completing her post-graduate degree from the Centre for Renewable Energy Systems Technology (CREST) at Loughborough University in the Midlands of the UK, Kimberly King has been investigating wind resources for installing small wind turbine generators in the urban/built environment. A summary follows:

## 2009

**Loughborough, UK.** Performed research and investigated opportunities for siting small wind turbines in the built environment using the Warwick Wind Trials (WWT) data. The WWT was the first study of its kind in the world to monitor 26 rooftop wind installations on a variety of urban and rural sites over 12 months that commenced in 2007 in the Midlands of the UK.

**Portland, OR, USA.** Submitted a proposal to Portland State University, Portland, OR, USA to conduct vibrational and noise mitigating research for a small, urban, rooftop wind turbine system. The impetus for this project proposal was due to information resulting to mechanical noise issues propagated by aerodynamics when analyzing wind resource data from the Warwick Wind Trials in the UK.

## 2011

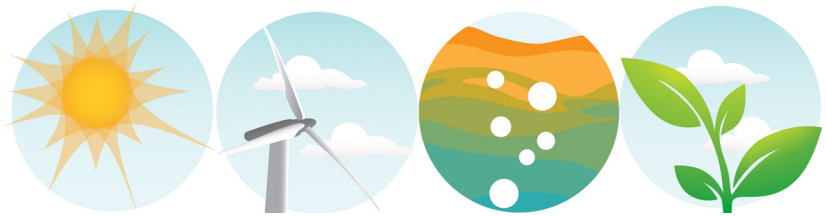
**Pittsburgh, PA, USA**. Provided consultation on small wind turbine installation. This included providing data acquisition and visualization recommendations at the Phipps Conservatory Center for Sustainable Landscapes in Pittsburgh, PA, USA.

**Napa, CA, USA.** Developed a conceptual commercial application schema for installing small wind turbines in the built environment at two organic farms. This also included investigating opportunities for installing photovoltaics, solar hot water and biomass waste recovery systems. The aim is to mindfully identify and address how ecosystems respond to change, how to facilitate public engagement by telling a story that resonates with all stakeholders, to help the environment and to learn how to mitigate the decline of biodiversity--even in the urban environment.

**Oakland, CA, USA.** Performed renewable energy policy research for the Local Clean Energy Alliance (LCEA) located in Oakland, California, USA. Investigating distributive/decentralized energy, energy/demand reduction, community choice alliance energy programs arenas.

## 2012

**Berkeley, CA, USA.** Decommissioning a small wind turbine generator (WTG) that was installed in December 1981.



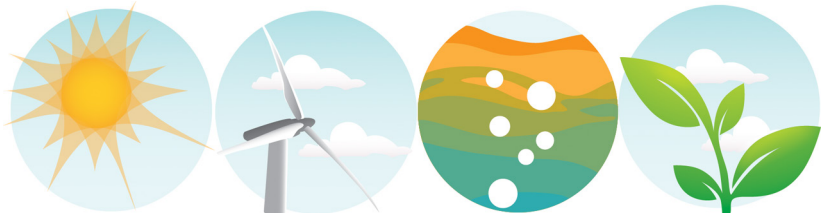
# SCOPE OF WORK

## Prepare. Respond. Adapt.

The purpose of Stage 1 is to screen potential locations on the East Oakland and West Oakland campuses to identify appropriate sites for the installation of a small wind turbine generator. The goal is to apply filters to evaluate potential sites that would preclude a wind turbine installation. Filters include:

**Insufficient wind resources** - Economically viable wind projects can be developed using 'marginal' wind resources as a preliminary filter for identifying sites. A more complete wind resource evaluation, including wind resource uncertainties in wind resource estimates will be conducted in Stage 2.

**Setbacks** - Insufficient set backs from property lines, residences, buildings or other sensitive receptors. In Stage 1, conservative 'rule of thumb' for acoustic and safety setbacks will be used.



**Access** - Available access pathways for delivery and construction of wind turbines.

**Infrastructure** - Restrictions may include proximity, capacity and challenges with interconnection to Pacific Gas and Electric's (PG&Es) distribution system.

**Community issues** - Successful wind projects are embraced by the community, if they are included in the design process. Potential interference with scenic view sheds must be considered. Conducting a meeting for community comment would be prudent.

**Permitting** - Successful permitting of a wind project is dependent on a number of factors, so enumerating definitive filters in advance of determining potential sites and locations is difficult. As a part of Stage 1, identifies sites will be scored for presumed complexity in permitting. Details on existing or planned wind energy bylaws in Oakland.

### Stage 1 Deliverable

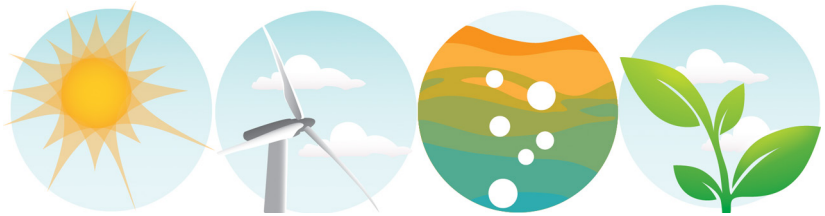
A preliminary report describing the sites reviewed, the findings, and the recommendation of the sites for a small wind turbine installation.

# SCOPE OF WORK

## Prepare. Respond. Adapt.

The most promising sites identified in Stage 1 will be incorporated into a detailed analysis. Budgetary limitations will likely be the driving factor for determining the most viable sites for an installation. Typically, at least one year of meteorological data is required to support a comprehensive feasibility study.

In Stage 2, a work session will commence to review the findings of Stage 1, so the sites under consideration for a final installation can be identified. The aim is to discern if power generated by a wind turbine will fortify and diversity the current energy portfolio and become part of the contingency planning, so the 40,000+ people served by St. Vincent de Paul Society of Alameda County California can be assured services will not be interrupted because of lack of electricity. The outcome of the feasibility study will become the tool and reference for engaging technical consultants in the design and construction. The



## *Stage 2 - Detailed Analysis for Emergency Preparedness Planning*

analysis will include the following:

### Wind Resource Assessment

After the three months of met data is collected, the wind data will be analyzed using the WRPlot and NREL's HOMER ® Micropower Optimization Model software programs, focusing on determining average wind speeds, potential energy production, as well as uncertainty analysis to enhance understanding where possible sources of error can arise during a wind feasibility study. These results will aid SVdP in making an objective decision to move forward based on risk level associated with the project.

### Financial Modeling

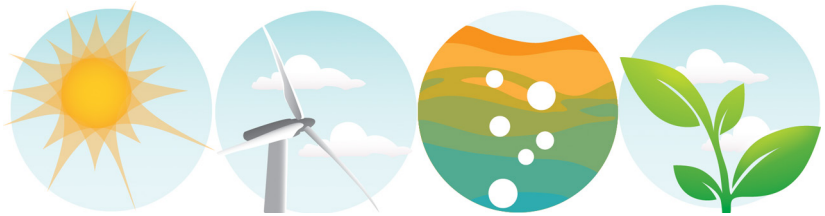
Using the developed economic model, for developing pro forma financial projections, including estimated revenues and expenses under the ownership of a nonprofit organization. This will also include engaging the local utility, Pacific Gas and Electric to asses avoided costs.

### Regulatory Environment (if applicable)

Shadow flicker, noise (acoustic), wildlife and electrical interference at the proposed turbine sites will be taken into consideration for modeling any potentially adverse effects. This analysis can serve as a road map for project development guidance and knowledge-base sharing for future investigations in this locale.

# SCOPE OF WORK

Prepare. Respond. Adapt.





## *Stage 2 - Detailed Analysis for Emergency Preparedness Planning (Cont'd)*

### Physical Construction

During the technical design stage of the project, any difficulties in construction at the proposed turbine sites will be assessed. The availability of appropriate wind turbines for the proposed sites will be evaluated.

Additionally, during Stage 2, a review of interconnection guidelines, estimate requirements and cost will be conducted at the proposed sites.

### Addressing Community Issues

During Stage 2, a public information plan and schedule will be adopted. The aim is to create an effective communication tool to conduct at public stakeholder meetings.

### Stage 2 Deliverable

A final report describing the sites reviewed, the findings, and the recommendation of the sites for a small wind turbine installation. This will include the number of turbines that could be located on the identified site, the projected energy production, and the percentage of the municipal load that could be serviced through the wind energy at the respective locations. Data will be gathered on existing municipal energy uses for these calculations.

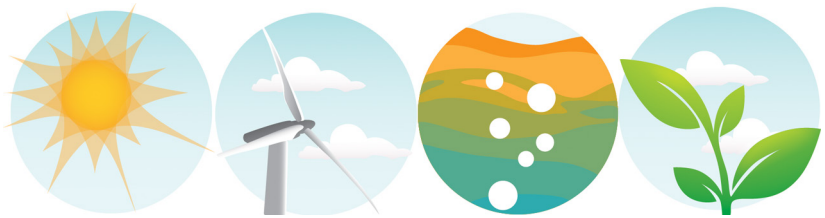
# 08

*Curriculum Vitae*

# APPENDIX

Prepare. Respond. Adapt.

See the attachment which follows.



# Curriculum Vitae

## Personal information


First name(s) / Surname(s) **KIMBERLY L. KING**

Address(es) PO Box 22002
Oakland, CA 94623 USA

Telephone(s) +1 (415) 832-9084 Mobile | +1 (415) 832-9084

E-mail(s) kimgerly@kimgerly.com


## Desired employment

**RENEWABLE ENERGY ENGINEER**

## Professional Summary

Project engineer, renewable energy engineer, disruptive technologist, technical writer, web content management, copy editor and communications specialist with an extensive background in renewable energy, systems engineering, sustainable development, and IT systems analysis and administration. Greatest strengths include taking bold, decisive and definitive action to solve problem, agile and adept at networking and building strategic alliances by utilizing conventional, unconventional and creative approaches, developing and working in collaborative teams, and composing concrete, concise, clear technical documentation. Comprehensive knowledge of current research and trends being conducted in the field of renewable energy and sustainability development, nationally and internationally. Broad-based computer skills including hardware, web and software. Held leadership and decision-making roles in computer software start-up companies during the dot-com.

## Work experience

Dates 12/11/2012 - Present

Occupation or position held Renewable Energy Engineer/Consultant

Main activities and responsibilities Perform energy assessment for back-up power emergency response options and contingencies at two locations of the St. Vincent de Paul Society of Alameda County. This includes performing a wind resource study, energy efficiency optimization for meeting day-to-day power needs, and investigating alternative storage opportunities for uninterruptible power requirements during disaster relief events.

Name and address of employer St. Vincent de Paul Society of Alameda County, Oakland, CA, USA, http://www.svdp-alameda.org/

Type of business or sector Charity, Disaster Relief

Dates 28/05/2012 - 09/11/2012

Occupation or position held Technical Writer/Consutlant/Project Engineer (Telecommuting Contract)

Main activities and responsibilities Principal technical writer for the UH-HNEI/DOE Grid, Photovoltaic and Battery Projects Smart Grid Inverter Project. Generate technical copy for a nascent smart grid communications protocol standard to be used for embedding a high-penetration of residential PV inverters on existing electrical distribution networks. Deliverables included functional requirements, systems architecture, use cases, communications flow, functional mappings, as well as designing and developing an acceptance test plan for the virtual, proof-of-concept and integrated environments. Perform research on embedding renewable energy generators on low-voltage and medium voltage electricity networks.

Name and address of employer Silver Spring Networks, Redwood City, CA, USA, http://www.silverspringnet.com/

Type of business or sector Smart Grid Networks for Renewable Energy Applications

Dates 01/09/2011 – Present

Occupation or position held Renewable Energy Researcher

Main activities and responsibilities Perform renewable energy policy research including investigating distributive/decentralized energy, energy/demand reduction and community choice alliance energy programs arenas.

Name and address of employer Local Clean Energy Alliance, Oakland, CA, USA, http://www.localcleanenergy.org/

Type of business or sector Renewable Energy Policy

| | |
|---|---|
| Dates | 01/08/2009 – (In-perpetuity contract) |
| Occupation or position held | Project Engineer (Telecommuting Contract) |
| Main activities and responsibilities | Conduct wind and hydrokinetic engineering research, provided analysis and compiled information for a consultancy specializing in energy conservation, maximising of resource efficiencies, system automation and integration. |
| Name and address of employer | Silvercrest, South Normanton, Derbyshire, UK, http://www.silvercrestec.com |
| Type of business or sector | Renewable Energy, Energy Efficiency Designs |

| | |
|---|---|
| Dates | 01/01/2008 – 01/09/2011 |
| Occupation or position held | Web Consultant, Technical Writer, Partner (Telecommuting Contract) |
| Main activities and responsibilities | Responsible for editing and writing web copy for global audiences, enhancing the navigability of the web site, performing search engine optimization and usability testing for Wattminder, an advanced, real-time photovoltaic system and utilities monitoring and intelligent diagnostics web site. |
| Name and address of employer | Yang Associates, Sunnyvale, CA, USA http://www.wattminder.com & http://pvmonitor.net |
| Type of business or sector | Renewable Energy |

| | |
|---|---|
| Dates | 01/09//2007 – 31/10/2007 |
| Occupation or position held | Technical Writer (Telecommuting Contract) |
| Main activities and responsibilities | Technical Writer responsible for composing patent applications for the multi-disciplinary consulting firm specializing in wind energy applications. |
| Name and address of employer | Chinook Wind, Everson, WA, USA, http://www.chinookwind.net |
| Type of business or sector | Renewable Energy |

| | |
|---|---|
| Dates | 14/01/2006 - 30/06/2006 |
| Occupation or position held | Project Engineer |
| Main activities and responsibilities | Project Engineer at a mechanical engineering firm that specializes in high performance, environmentally sustainable and energy efficient heating, ventilating and air conditioning system designs. Assisted in defining the data control points, monitoring equipment and data visualization software selection for energy and resource performance monitoring on the Carnegie Institution Global Ecology Center building. Conducted performance-based energy calculations and analysis for PG&E's Non-Residential Incentive Program with a focus on industrial buildings. Provided content updates and assisted with report and proposal generation. |
| Name and address of employer | Rumsey Engineers, Inc., Oakland, CA, USA, http://www.rumseyengineers.com |
| Type of business or sector | Mechanical Engineering/Energy Efficiency |

## Projects, research, presentations & publications

**Projects and research**

06/2012 – 11/2012 :: Subcontractor/Principal Technical Writer for Silver Spring Networks. Contributed to the UH-HNEI/DOE Grid, Photovoltaic and Battery Projects Smart Grid Inverter (SGI) Project. Redwood City, CA, USA http://www.hnei.hawaii.edu/node/217, http://www.silverspringnet.com

02/2012 – Present :: Decommissioning a small wind turbine generator installed in the urban/built environment in 1981. Berkeley, CA, USA
http://www.youtube.com/watch?v=wP0AC_cvQ8c&feature=youtu.be

02/2012 – Present :: Investigating opportunities utilizing LED lighting technology for optimizing indoor plant propagation and repurposing shipping/building materials for raised bed production in the urban environment. RE Power `Em, Oakland, CA, USA

09/2011 – Present :: Perform renewable energy policy research for the Local Clean Energy Alliance (LCEA) investigating distributive/decentralized energy, energy/demand reduction, community choice alliance energy programs arenas. Oakland, CA, USA http://www.localcleanenergy.org/

08/2009 :: Conduct preliminary wind and hydrokinetic engineering research for a conceptual pumped hydro-wind schema for Silvercrest Energy and Automation. http://www.silvercrestec.com/

01/2006-06/2006 :: Define the data control points, monitoring equipment and data visualization software selection for energy and resource performance monitoring on the Carnegie Institution Global Ecology Center building. http://www.cbe.berkeley.edu/mixedmode/carnegie.html

2004-2005 :: Perform eight residential solar installations as a volunteer for Grid Alternatives and Sutton Solar in the San Francisco Bay Area, USA. http://www.gridalternatives.org/, http://www.suttonsolar.com/

**Proposals**

06/2010 :: *Solarize NE Proposal for* Sustainable Solutions Unlimited, LLC, Portland, OR, USA *http://www.solarizeportland.org/*

10/2009 :: *Mitigating Noise Generated by Small Wind Turbines* Proposal for the Portland State University Mechanical and Materials Engineering Capstone Project, http://www.pdx.edu/mme/

**Publications and presentations**

03/2012 :: *Installing Small Wind Turbine Generators (WTGs) in the Urban/Built Environment – What not to do…* for RE-Power `Em, http://www.kimgerly.com/projects/WysingerWTDecomProject_WhatNotToDo.pdf

01/2010 :: *RE Power Haiti Short Business Plan Concept* for the Solar Electric Light Fund, Washington, DC, USA http://www.self.org

04/2010 :: Presentation – *GIS & Wind Siting – Using GIS to Assist in Siting WTGs in the Urban/Built Environment*, Centre for Renewable Energy Systems Technology (CREST), Loughborough University, UK

09/2009 :: Interim Report - *Wind Speed and Energy Yield Analysis of Small Wind Turbines on a 45m High-rise Building in the Built Environment*, Centre for Renewable Energy Systems Technology (CREST), Loughborough University, UK

09/2007 – 10/2007 :: Contributor to US Patent Application Publication, Pub. No.: US 2007/0057517 A1, *Wind Turbine Load Control Method,* http://www.chinookwind.net

10/2004 – 03/2005 :: Publication, *Installing Photovoltaics on California K-12 Schools,* http://rahus.org

**Consultations**

03/2011 :: Provide consultation on small wind turbine installation including data acquisition and visualization recommendations at the Phipps Conservatory Center for Sustainable Landscapes in Pittsburgh, PA, USA http://phipps.conservatory.org/project-green-heart/green-heart-at-phipps/center-for-sustainable-landscapes.aspx

01/2008 – 09/2011 :: Provide recommendations for performing search engine optimization and usability testing for Wattminder, an advanced, real-time photovoltaic system and utilities monitoring and intelligent diagnostics web site for Yang Associates, Sunnyvale, CA, USA http://wattminder.com/ & http://pvmonitor.net/

## Education & training

| | |
|---|---|
| Dates | 29/09/2008 – 17/06/2010 |
| Title of qualification awarded | Postgraduate Diploma (PGDipl, MSc non-thesis) Renewable Energy Systems Technology |
| Principal subjects | Completed graduate coursework in solar, wind, ocean/hydrokinetic, biomass renewable energy systems, integration, sustainability, policy and environmental management. Specialization in hybrid renewable energy systems. Performed research, analyzing data from small wind turbines sited on high-rise buildings in the built environment in the Midlands of the UK. |
| Name and type of organisation providing education and training | Centre for Renewable Energy Systems Technology (CREST), Loughborough University, Loughborough, UK, http://www.lboro.ac.uk/crest/ |
| Level or international classification | Postgraduate Diploma (PGDipl, MSc non-thesis) |
| Dates | 04/04/2005 - 31/05/2005 |
| Title of qualification awarded | PV Design and Installation Certificate |
| Principal subjects | Photovoltaic and Design and Installation coursework |

| | |
|---|---|
| Name and type of organisation providing education and training | Engineering Technology<br>Diablo Valley College, Pleasant Hill, CA, USA |
| Level or international classification | Certificate |
| Level or international classification | Post-baccalaureate student |
| Dates | 15/09/1991 - 31/03/1993 |
| Title of qualification awarded | BSc Mathematics |
| Principal subjects | General mathematics and engineering coursework in engineering graphics, statics, materials engineering, discrete event systems simulation, statistical mathematics, differential equations, linear algebra and boundary value problems. |
| Name and type of organisation providing education and training | Georgia State University, cross-enrolled Georgia Institute of Technology, Atlanta, GA, USA |
| Level or international classification | BSc (Baccalaureate) |

## Personal skills & competences

Mother tongue(s): English

Other language(s)

| Self-assessment | Understanding | | | | Speaking | | | | Writing | |
|---|---|---|---|---|---|---|---|---|---|---|
| *European level (*)* | Listening | | Reading | | Spoken interaction | | Spoken production | | | |
| **Turkish** | A1 | Basic User | A1 | Basic User | A1 | Basic User | A1 | Basic User | A1 | Basic User |
| **German** | A1 | Basic User | A1 | Basic User | A1 | Basic User | A1 | Basic User | A1 | Basic User |

*(*) Common European Framework of Reference (CEF) level*

**Social skills and competences**

- Excellent communicator with the ability to effectively interact and collaborate at all levels.
- Agile and adept at networking and building strategic alliances by utilizing conventional, unconventional and creative approaches.
- Competent at applying non-trodden path by taking bold, decisive and definitive action approaches to problem solving.
- Work with end-users, engineering, development, marketing, and QA groups to examine issues, develop strategic solutions, validate infrastructure, content and approach for improving processes and procedures.
- Work well independently or as a team member.

**Organisational skills and competences**

- Competent at directing the work of others and project management.
- Able to produce materials conveying appropriate level of detail and results with minimal supervision.
- Effective troubleshooting and communication, critical thought, time management and prioritization skills.

**Technical skills and competences**

- Results-oriented professional with a quick grasp of new technologies.
- Comprehensive knowledge of current research and trends in the field of renewable energy and sustainability development.
- Wind energy systems – Perform data acquisition, data validation and reporting. Develop a commercial application schema for installing small wind turbines in the built environment.
- Solar energy systems - Performed solar site assessments, photovoltaic (PV) design and installation. Composed multiple draft design proposals for installing PV arrays.
- Energy efficiency design - Define data control points, monitoring equipment, data visualization software selection for building energy and resource performance monitoring.
- Systems analysis - Evaluate, recommend, and install technologies, information design methods, analyze system deficiencies and implementing solutions to improve workflow processes.

| | |
|---|---|
| Computer skills and competences | Excellent computer skills – Web, Hardware, and Software<br>• Web: Use HTML, XML, Cascading Style Sheets (CSS), FTP, Adobe Acrobat, Adobe InDesign, Adobe Photoshop and Macromedia Dreamweaver for marking-up and managing web sites.<br>• Hardware Platforms: IBM Mainframe, Macintosh, PC-compatible, Sun SPARCstation<br>• Software: Adobe Acrobat, Adobe ConnectPro, Adobe FrameMaker, Adobe Illustrator, Adobe InDesign, Adobe Photoshop, Apache web server, ArcGIS, AutoCAD, HOMER Energy, Macromedia Dreamweaver, LabVIEW, Microsoft Office Suite for Windows and Macintosh, PVSYST, SolidWorks, SunPath, WindFarm, WRPlot<br>• Operating Systems: MacOS 7.x/8.x/9.x/X, MS-DOS, UNIX (Solaris 7_Intel x86, Solaris 2.6, 2.7, Sun OS 5.7), Windows 95/98/NT 3.51 & 4.0/2000/XP/Vista/7<br>• Languages: C, Python, SAS, UNIX Shell Scripts (awk, Bourne, Korn, sed)<br>• Databases: Access, FileMaker Pro, MySQL, Oracle 8.1.7, Vignette CMS<br>• File Systems, Utilities, Tools: DNS, FTP, NIS, NFS, TCP/IP, Modbus |
| Technical writing skills and competences | • Compose, edit, standardize and revise documentation, including installation guides, tutorial guides, training manuals and proposals, in print and online formats.<br>• Organize, synthesize and gathering data from subject matter experts by observation, reviewing written materials, vendor documentation, regulation manuals and other relevant material sources.<br>• Explain, write and present complex subject matter and materials in an understandable fashion for end-users.<br>• Competencies include manipulating graphics and documentation layout. |
| Driving licence(s) | CA, USA Class D Driver's License |