



Outdoor Lighting Solutions Overview

July, 2014

The Power to Dream



Tel: 0800 637 388 www.renewablesolutions.co.nz

About UGE

Empowering you with Renewable Energy

UGE provides renewable energy solutions for leading global enterprise customers.

With projects in more than 90 countries, UGE is changing the face of distributed renewable energy at a global scale, deploying complete customized solutions.

UGE's modular product platform includes solar and wind power, battery storage, power electronics, remote monitoring, and site planning and deployment. UGE seamlessly integrates best in class solutions to minimize your energy bill, increase energy reliability, and attain your sustainability objectives.



What We Do

With you from start to finish: We work together to ensure you receive the optimal solution and support

Tailor-made solutions: UGE uses a sophisticated engineering toolkit to design a unique solution for every customer

We solve challenges faced by:

- Commercial businesses
- Municipalities and governments
- Universities and educational institutions
- Telecommunications companies
- Outdoor lighting and roadway operators

Key Clients



Honeywell

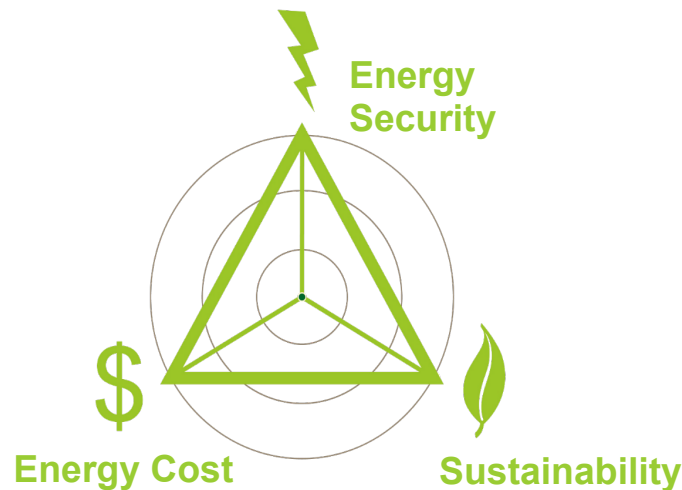


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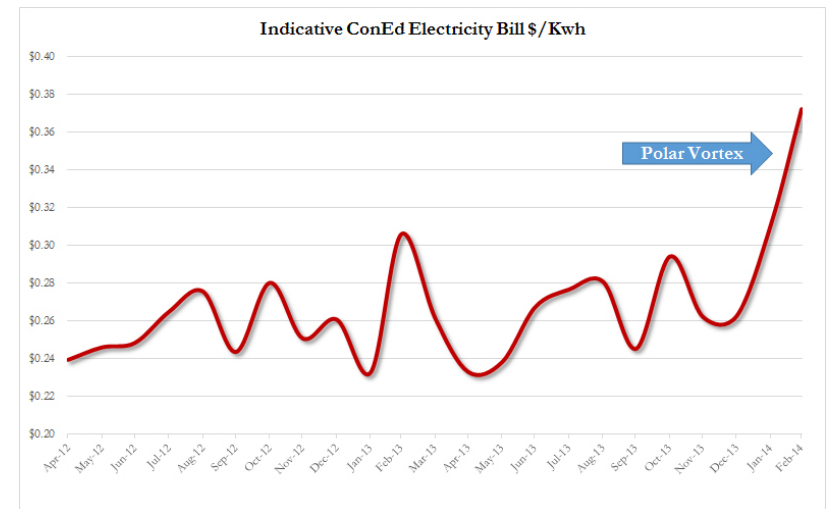
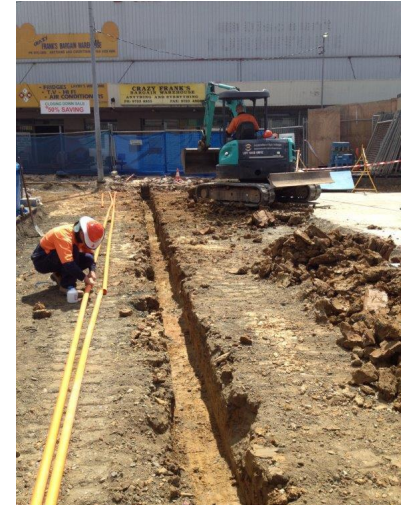
Why UGE Outdoor Lighting Solutions?

- **Save up to 50%** vs. grid-tie with reduced installation costs & no ongoing energy bill
- **Reduce downtime by 80%** with wind and solar powered lights operating independently of the grid
- Meet goals and demonstrate commitment to sustainability with highly visible lighting systems



Grid-Tie Lighting Projects Face Three Main Challenges

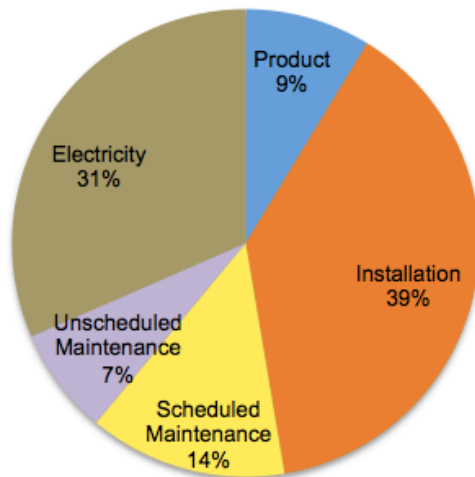
- **Large up-front expenditure:** Extending underground grid power to site is often prohibitively expensive
- **Large ongoing expenditures:** Ongoing electricity bills are typically the largest component of lifetime system costs
- **High uncertainty:** Energy price volatility makes budgeting and planning difficult. System operation is 100% reliant on grid availability



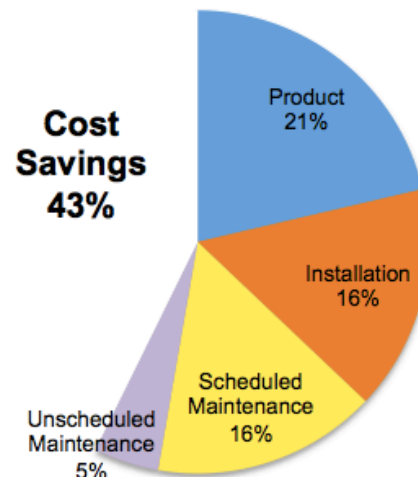
Off-Grid Solutions Save up to 50%, Beginning on Day 1

- No underground trenching or utility connection required – cut installation time in half and reduce project costs
- Eliminate ongoing energy bill & exposure to energy price volatility
- Plug & Play: Add lighting where its needed, without worrying about interference with existing infrastructure

Conventional Streetlight 20-yr Costs

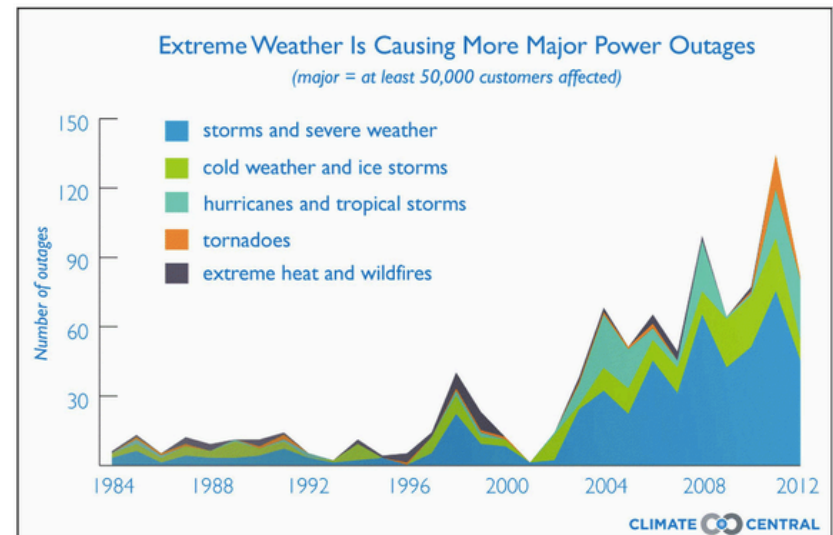


UGE Streetlight 20-yr Costs



Off-Grid Solutions are More Reliable than the Grid

- 80% less downtime compared to grid-tie lighting systems
- Increasing frequency of extreme weather events mean reliable energy systems are more important than ever – Off-grid lighting solutions work 365 nights per year, unaffected by grid outages
- Remote monitoring & control platform minimizes ongoing maintenance requirements & eliminates costly site visits



Robust & Reliable – Testimonial

“This letter is to inform you of the condition of the Sanya we have installed in Northern Australia, a region that was inundated by sea water after a recent cyclone and massive tides.”

“There were waves of approximately 4-5 meters high breaking over the Sanya tower...the tower and its components stayed in tact and were not destroyed.”

“It is now about a year since this event and we have been watching the Sanya for signs of damaged from corrosion etc. I am happy to report that all is well...The tower and the turbine have survived well and show no residual damage.”

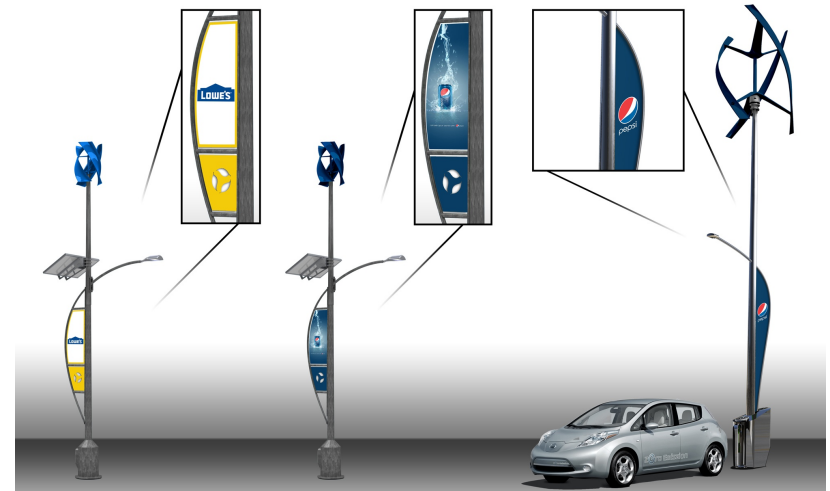
“I am pleased to report that the client is happy and it has been a good test for the Sanyas under extreme conditions.”

Peter McGrath – Urban Wind Power
February 25, 2013



Demonstrate Your Commitment to Sustainability

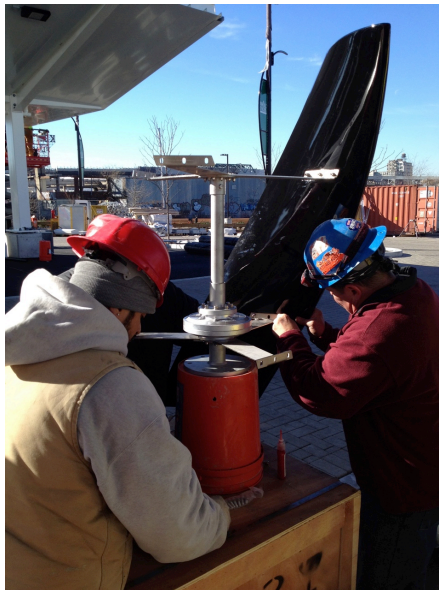
- Renewable-powered lighting solutions contribute toward LEED credits for on-site energy use
- Highly visible sustainability statement
- Marketing & branding opportunities provide additional sources of revenue



Our Approach

End-to-End Solutions & Ongoing Support

From site evaluation to ongoing maintenance, UGE provides turnkey solutions that enable customers meet their energy goals

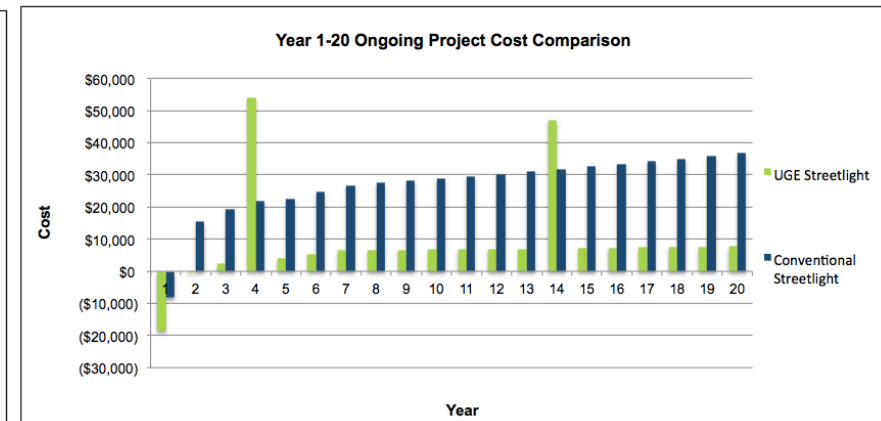
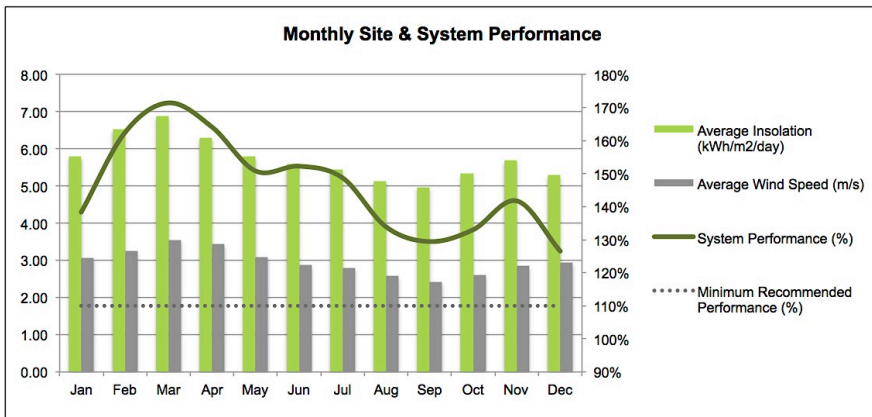
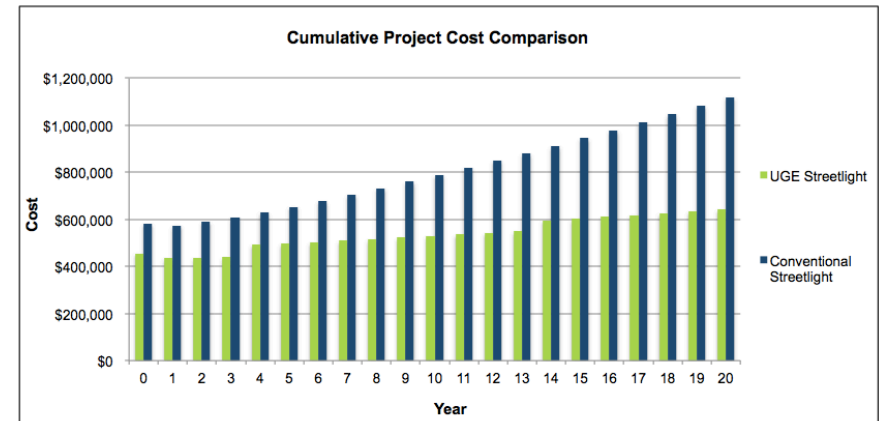


320 dual-headed roadway & pedestrian units

Outdoor Lighting Solutions Toolkit

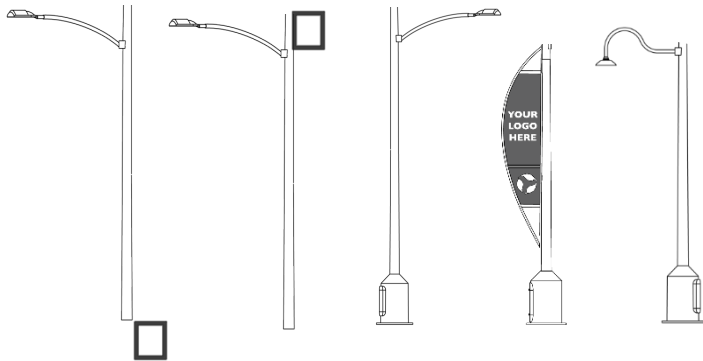
Our portfolio of **planning, assessment, sizing, and financial** tools quickly paint a clear picture for your project:

- Site Assessment
- System Design & Performance
- Photometric Study / Layout
- Spec Sheets
- Quote
- Cost Comparison Study

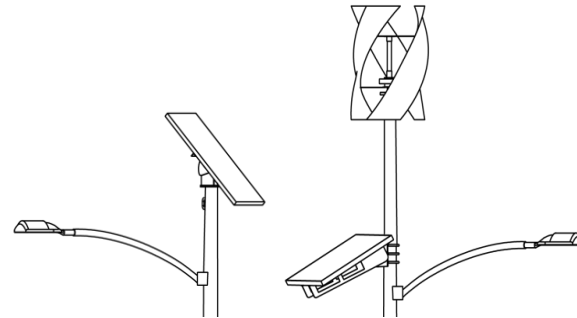


Modular Lighting Design Platform

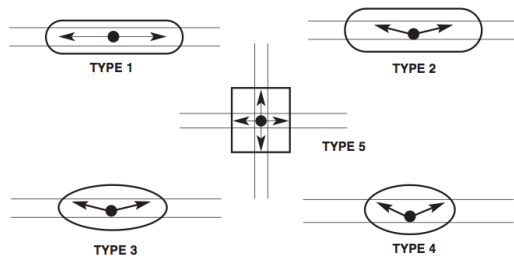
Various tower designs



Solar & Hybrid (wind + solar) solutions



LEDs to meet any need

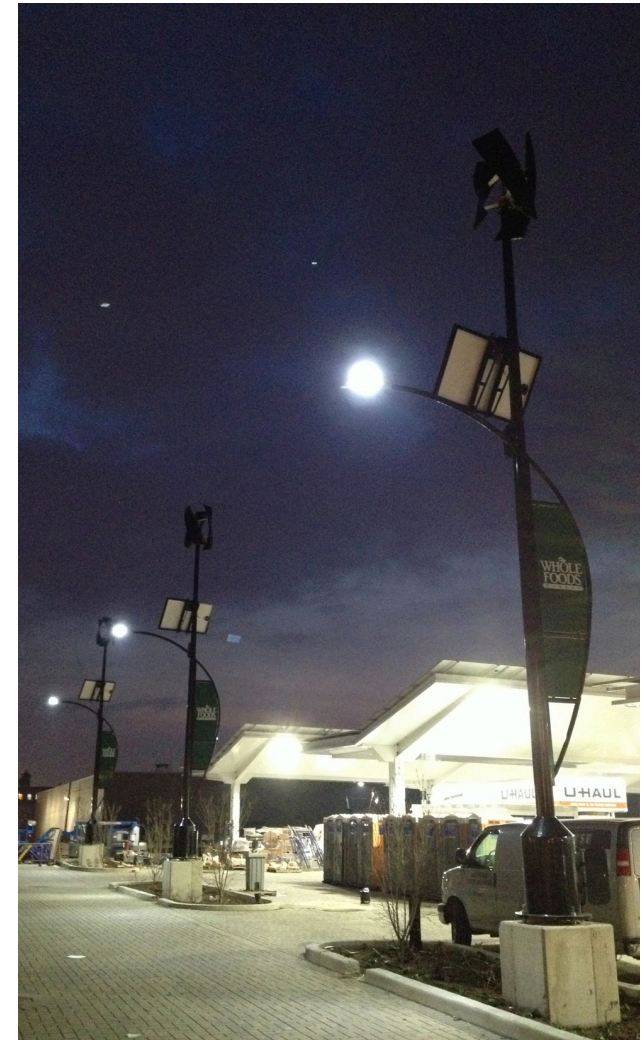


Industry-leading remote monitoring & control platform

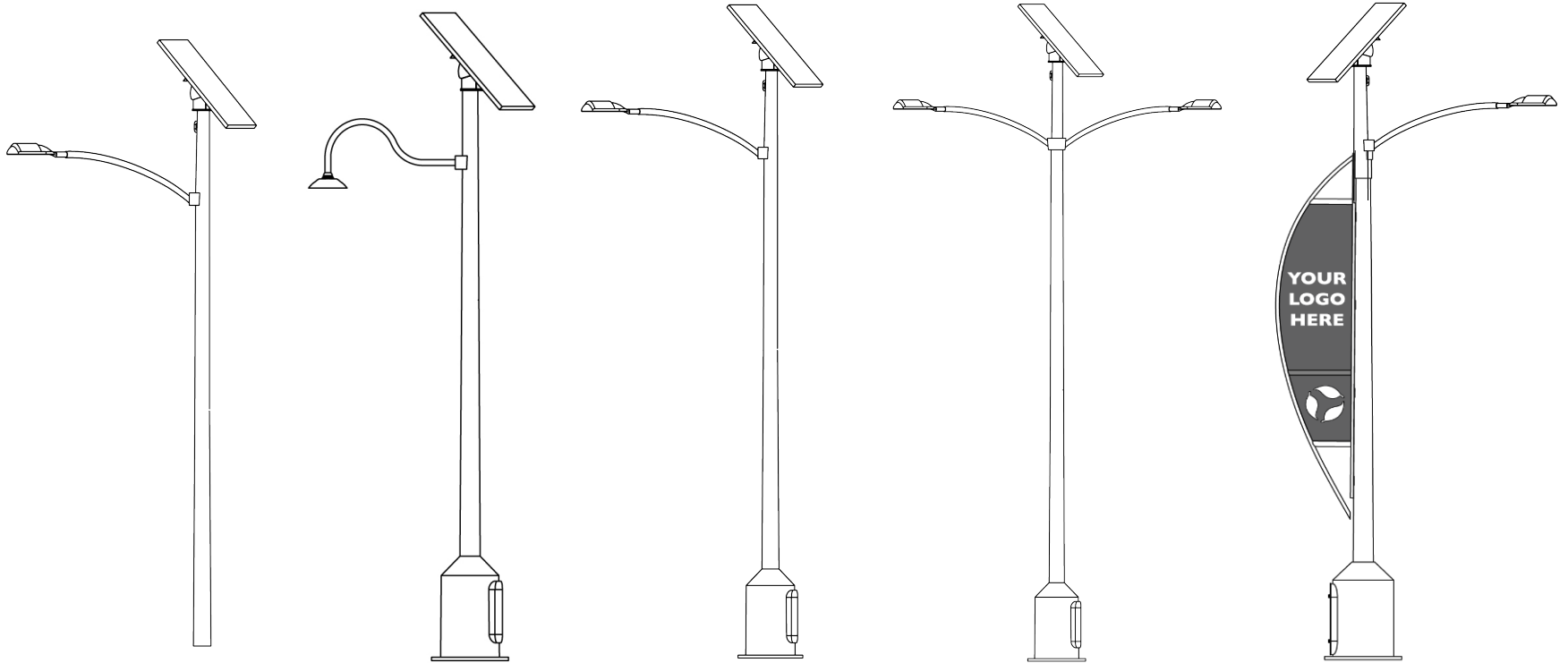


UGE's Renewable Energy Lighting Solutions Applications

- Pole-mounted lighting for roadways, parking lots/area, public spaces, etc.
- 20W – 150W loads
- LED fixtures
 - Replace HPS/MH lights up to 400W
 - Reduce energy use by up to 70%
 - 10 – 20 year product lifetime

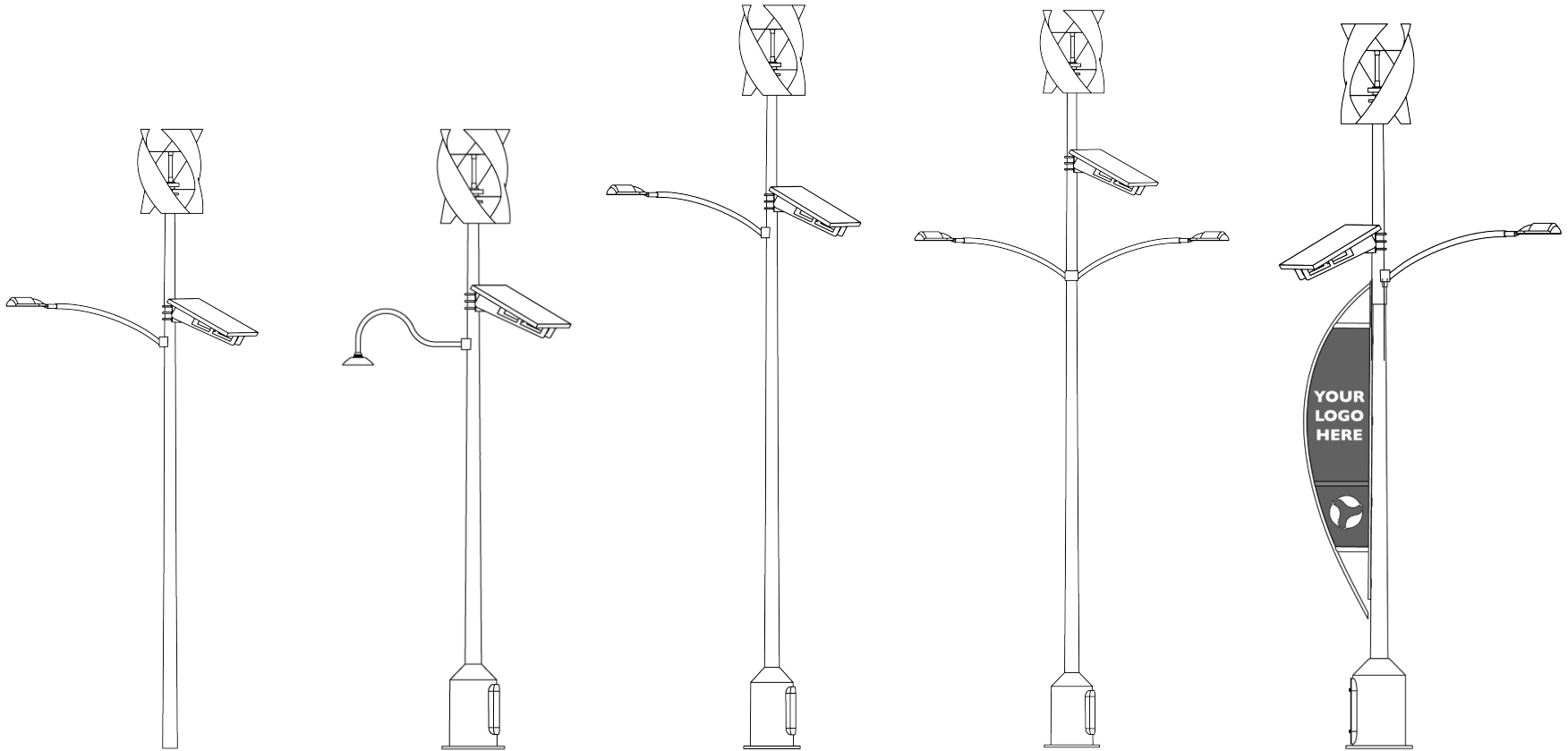


Modular Design for Any Application - Solar



*Prices vary depending on final configuration and volume

Modular Design for Any Application - Hybrid



*Prices vary depending on final configuration and volume

ViewUGE SL Simplifies Operations

Reduce Maintenance Costs up to 90%

- Perform maintenance remotely & eliminate costly site visits
- Optimized performance = longer product lifecycles



Complete Piece of Mind

- Full remote monitoring and control
- Set alerts & notifications to eliminate problems before they arise

Advanced Functionality

- Custom configurations, multiple LED lighting/dimming profiles, and power optimization
- Set it and forget it, or adjust settings as desired with the click of a button



Real Time Web-based Management

- Control remotely via computer, tablet, or smartphone
- Track performance, diagnose, and remedy from the comfort of your office, or anywhere else



3942

WHrs Generated
from solar and wind



551

WHrs Used
from loads



0

LBs of Carbon Offset
total pounds offset



0

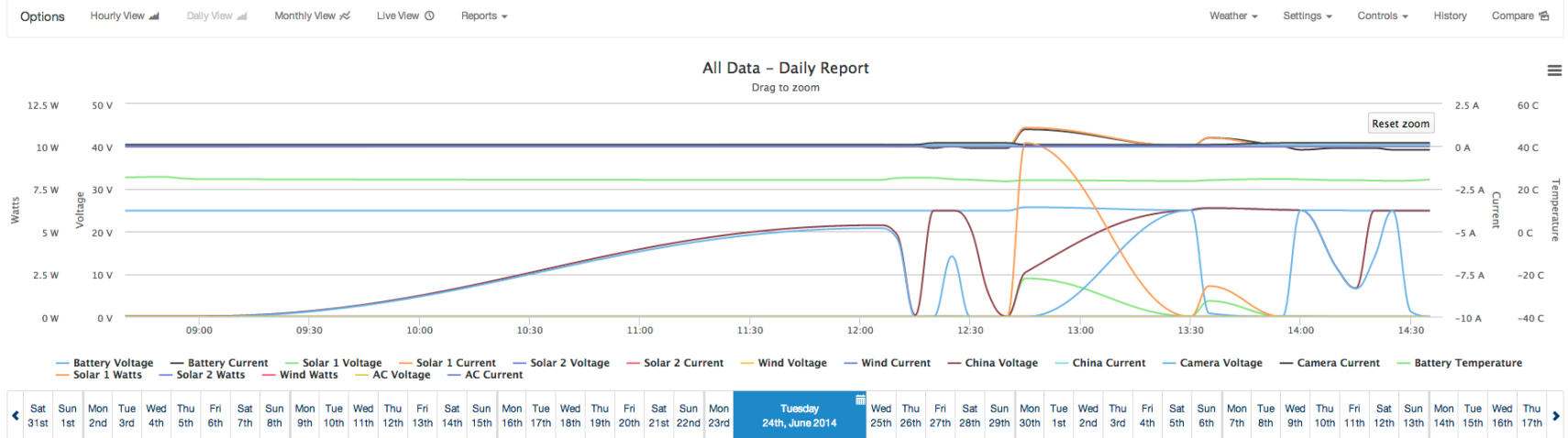
Trees Saved
saving trees is nice



WARNING: Low Voltage Detected on this system

WARNING: Low Voltage Detected on this system

Daily View for Noe Test System 119 ☁️ Mostly Cloudy 🌡️ 24.8°C 76.7°F ☁️ 90.0 % 🌬️ 6.3 kmph 3.9 mph



renewable solutions

Case Study City of PingQuan

Project Overview

Cars entering PingQuan, China, drive on a long stretch of highway that previously had no streetlights. To improve driver safety, the city wanted to add lighting, but stay within budget. UGE installed 105 hybrid, off-grid streetlights that light the way and provide a dramatic entryway to the city. Compared to conventional grid-tie lighting, UGE's off-grid solutions were less expensive to install and save more than \$200,000 over their lifetime by eliminating the ongoing energy bill.

Project Details

- Location: PingQuan, Hebei Province, China
- Completed December, 2012
- UGE Solution vs. Traditional Lighting - \$550,000 vs. \$560,000 up front
- Ongoing savings: >\$200,000 over the 20+ year lifetime



Case Study Whole Foods Market

Project Overview

Urban Green Energy (UGE) partnered with national grocery chain Whole Foods Market to develop a groundbreaking renewable energy powered lighting project at their new location in New York City. The eco-conscious market is illuminated by UGE's off-grid lighting solutions, and customers can charge their electric cars at one of the 2 UGE charging stations in the parking lot. For Whole Foods, this project also represented an opportunity to achieve the rare and prestigious LEED Platinum certification at attractive costs with tangible paybacks.

Project Details

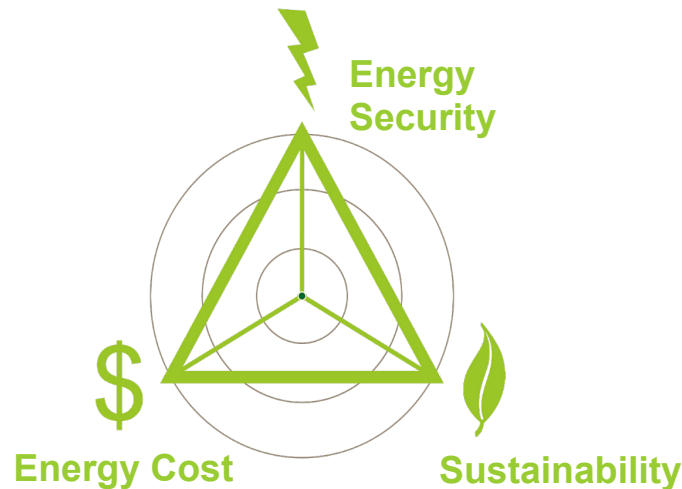
- Location: Brooklyn, NY, USA
- Completed December, 2013
- Annual energy production: 2.5 million kWh
- Street light energy savings: 100%
- Site includes: 19x UGE lighting solutions, 2x UGE Sanya Skypump EV Charging Stations, 325kW Solar Canopy



Summary

UGE's outdoor lighting solutions:

- **Save up to 50%** vs. grid-tie with reduced installation costs & no ongoing energy bill
- Ensure nearly **100% uptime**, independent of the grid, by harnessing clean power from the wind and sun
- Meet goals and demonstrate commitment to sustainability with highly visible lighting systems





**For more information or to book
a free consultation please contact
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