



## **R.P. Delio and Company announces a major milestone in its assistance in bringing one of the world's only atoll-based commercial microgrid platforms to life.**

*R.P. Delio and Company is pleased to report that a microgrid designed based on its Waypoint Power™ platform is now under construction, and major components are destined for the remote Palmyra Atoll, owned by The Nature Conservancy (TNC), so bringing forward the goal of removing nearly all fossil fuel use from this sensitive Pacific wildlife reserve.*

The Palmyra Renewable Energy Project (PREP) seeks to almost completely eliminate fossil fuel use from the remote scientific research facility and nature reserve on Palmyra Atoll. R.P. Delio and Company has donated more than \$100,000 in its engineering time, acting as the design consultant to produce a completely integrated clean energy solution for TNC that helps ensure they will achieve the project's goals. The company's proprietary MicroIPP™ and MicroBESS™ engineering concepts were provided free of charge to TNC in support of this truly inspirational project. The Waypoint Power™ Platform's system architecture plays a critical role in the regulating of energy supply, demand and power quality from the diverse generation and storage sources connected to the microgrid.

Ray Delio, CEO of the company, said, "R.P. Delio and Company is fully supportive of, and has significantly invested in, TNC's groundbreaking project. We are proud that our Waypoint Power MicroIPP™ and MicroBESS™ designs are helping to enable such a worthy cause. Removing fossil fuel use from this pristine and near intact nature preserve sends a clear message that TNC aims to be the leader in responsible conservation and financial sustainability."

"Since its inception, RPD has donated hundreds of labor hours for the design and engineering of a solution to meet TNC's goals. The design and related services donated to the PREP have a projected value of \$100,000, clearly demonstrating our commitment the project's goals, which include the donating of our expertise in project management, fund-raising support, strategic planning, logistics and risk management."

CEO Raymond "R.P." Delio and key staff from R.P. Delio and Company, a Hawaii-based full-service energy consultancy firm, have been donating their time for the design and build of the Palmyra Renewable Energy Project (PREP). This integrated microgrid solution, only made possible through the company's extensive expertise and its innovative technology designs, will help eliminate fossil fuels (except for emergency backup using diesel from Pacific Biodiesel) from the remote scientific research facility and nature reserve on Palmyra Atoll in the Pacific, which is owned and operated by TNC. R.P. Delio and Company was brought on-board as a member of the Palmyra Advisory Council (PAC) early on in the project, advising with regard to "microgrid design, procurement and construction support for the PREP".

As a sensitive and important nature reserve, removing a source of adverse local environmental impacts is an important goal of the PREP. The PREP will also reduce the risks associated with operating at a remote site, providing a system that is able to produce power primarily from local energy resources. Additionally, major cost savings will be realized for TNC, allowing the funding of additional improvements to research facilities.

The PREP was initially designed to install a system consisting of 100kW capacity of solar PV, 20kW capacity from 2 avian-friendly vertical axis VisionAir5 Urban Green Energy wind turbines, and several diesel backup

generators, all connected to a dual-media energy storage system, consisting of both battery and compressed air energy storage. The plans relating to the use of wind turbines evolved as the system went from design to final approval. R.P. Delio and Company's Waypoint Power™ controller is a critical component for managing these diverse energy resources.

At the heart of the design (though not currently planned for install) is the Waypoint Power™ MiroNOC™ controller consisting an industrially robust programmable logic controller (PLC), with proprietary sensors and programming. The MicroNOC is designed to serves as the decision-making brain for the necessary Demand and Supply Dispatch decisions. It also commands a number of dynamic load management properties for the system. The Waypoint Power™ Platform undertakes voltage and frequency regulation, monitoring the microgrid to ensure that the distribution of the system's energy balance is maintained at all times. Making decisions like feeding the battery clusters or choosing to start the SCUBA compressed air energy storage, as well as the other large energy consumers, all occur in real time, 24/7/365.

In addition to providing the tangible environmental and financial benefits, the proposed solution will also provide something less tangible, but perhaps more critical – a sense of security in an insecure world. Whether caused by natural disaster, modern-day piracy, terrorist attack or system mismanagement, power outages place a severe stress on any organization. This stress is made greater when assistance is over 1,000 miles away. The system will be designed to offer a robust and capable solution to these dangers, should they disrupt any of the system's power-generating components. By leveraging on the energy stored in EV's and backup battery banks, we expect that the site will have continuity of power – and service – when TNC needs it most.

The Waypoint Power™ Platform is an end-to-end solution and family of products from R.P. Delio and Company that works with third party systems to provide a foundation for seamlessly and securely connecting devices, equipment, buildings, and other system and in so doing, delivering secure, scalable and inter-operable, clean and sustainable energy, along with real-time trusted data, enabling dynamic operations and delivering value through powerful microgrid analytics.

The MicroNOC™ will run an automated optimization frequently, every minute to optimize microgrid operations, generators, power flow controllers, switches and loads, what we call Demand and Supply Dispatch. These components must be outfitted with sensors and communication links that can provide real-time information to a central communications control, the MicroNOC. We want to standardize microgrid communications and systems so they are compatible with the local distribution grid and each other. Our focus with the Waypoint Power™ Platform is the optimization of disparate Building and Energy Management Systems, coordinating with each other in a deeper and more meaningful way to fluctuate operations based on parameters such as real time demand and supply to drive towards an ever lower levelized cost of energy for the aggregated system, and lower carbon emissions.

R. P. Delio and Company has been at the heart of the clean energy transformation for the best part of a decade. The company's principals have been involved in several groundbreaking projects and programs, helping to drive forward what many now characterize as the “third industrial revolution.” But that transformation is far from a purely technical challenge.

It involves a complex and dynamic interaction between energy policy, markets and technology – an evolving landscape that R.P. Delio and Company has proven adept at navigating.



R. P. Delio and Company stands ready to assist its clients in the successful navigation of this new technology vista, by providing the following services:

- Energy Auditing, Energy Engineering and Master Planning
- Renewable Energy Development (Microgrid, PV, Wind, Biofuel, Cogen)
- Smart Grid Technology & Renewable Energy Integration Consultancy
- Overhead and Underground Electric Distribution
- Construction Management
- Demand-side and Peak Load Energy Management
- Energy Policy Compliance and New Legislation Consulting



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